

# **A Thousand Moments of Solitude**



# **A Thousand Moments of Solitude**



**(A Personal Encounter With Suicide)**

**Federico Sanchez**

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For my sons,

Mitchell Xavier who was the wind under my left wing,

and

Fredrick Lawrence who now is the wind beneath both wings.



# My son Mitchell committed suicide on November 12, 2002.

I was devastated.

When my sister died several months earlier, I thought I had discovered how deep grief could be. But my son's death brought me face to face with the true limits of what can be endured. My life turned gray. I was like a still, early winter afternoon in the Antarctic—gray sky, gray clouds, gray ocean, smooth and motionless; the air cold and stifling, no ripples on the water's surface, no movement anywhere, and grief froze me in my place.

I can comprehend the process of fusion that fuels the sun. The life of stars, measured sometimes in billions of years, makes them seem immortal. Yet, too, they perish. I can understand how gravity makes stars bigger, so big in fact that they implode into themselves and then produce a brilliant super nova explosion. I can be aware of how our planet with all its atoms, more than five billion years ago, was created in one of these gigantic fusion furnaces. Supernovas, more than rainbows, are a promise of a new beginning. While physics can take us back in time until a few fractions of a second after the big bang and quantum mechanics can help us build better computers to plot the future course of the universe, we still find it difficult to understand love or ourselves. Or suicide. It seemed like such an abstraction. Now, it had taken my child's life.

I used to think that I was immortal, at least in the sense that some of my genes were passed down. Now, I am less certain about everything. Who are we, really? What makes us, us? We are ethereal in the sense that the atoms that make up our bodies change daily. The food we take in, the energy we use up, our bodies' wastes, insure that there is a constant stream of incoming and outgoing atoms. In that sense, our bodies are continuously transforming. We are never the same; we are passing through. Ultimately, what makes us, us, is our brains.

One should not be shocked when death calls early. Life is so fragile. On the contrary, we should be astonished that life endures against so many obstacles. We should be amazed that love can flourish during a short lifespan, and endure after death, unshakable.

This is a book on aftoktognosis, a word I coined from the Greek aftoktonia = suicide and gnosis = knowledge. It is a journey of exploration, a journey to find answers to the unthinkable.

This story is also about a new life, a new beginning, a rebirth or replenishment, which can be seen as the antitheses of death. It is a story about survival. In the end, I know this story is about love; the love of a man for a woman; the love of a father for his sons. Love gives us stability and security. Love produces new life and continuity. Love, in the face of huge loss, is what gets us through. Love gives life and sustains it.

~

I will never forget that phone call. On Tuesday, November 12, 2002, at 8:03 a.m., the phone rang in my bedroom in our house in Carmel. I was still in bed. It was my son Mitch calling from New York City. He had gone to New York the Wednesday before to work in our store in Manhattan to make some money before he went to Spain to start a Masters Program in January. He was staying in our apartment on the East Side with Donaldo, our dear friend and store manager. Mitch had also told us he might be pursuing his music career more seriously and that he needed to see his dear girl friend, Katie, with whom he had broken up amicably in the spring while they were finishing their senior year at the University of California in Santa Barbara. Katie was working towards a Masters degree at New York University.

“Hello,” I answered.

“Hi, dad. It’s Mitch.

“How you’re doing?”

“I’m not doing well. I had a really bad night last night. You are right. I need therapy. I’m coming home tomorrow.” His voice sounded hollow and broken. He was referring to part of our last phone conversation, a few days before; I told him that even if he felt good, he wasn’t well and he needed to start therapy. I had tried to convince him that taking medication wasn’t enough, that he should volunteer to enroll in a therapy program to help with his moderate depression and occasional panic attacks. I had told him that it takes time to make changes in our brains. As an example, I mentioned how I had quit smoking five months before, and I still felt occasional cravings; rewiring the brain takes time and work.

“What do you mean you had a bad night?”

“I couldn’t sleep, it was really bad, and I’m still not well. I’m flying home tomorrow.”

“Don’t worry, soon you’ll be O.K. At what time are you arriving? I’ll pick you up.” I was trying to keep the conversation light. I was aware that he didn’t like me to mention his “thing”. He claimed that talking about it made it worse.

“I don’t know. I need to check my ticket.”

“Well, you do that and call me back.”

“But I’m flying into San Jose.”

“That’s no problem. Do you know where your ticket is?”

“No. But that’s O.K. I’ll call you later, Dad. Good-by.”

“Just call me and I’ll pick you up. I’ll see you tomorrow, Mitch.” I said as he hung up.

A few hours later, I said to my wife, Pat, “Mitch called. He’s not doing well. He’ll be coming home tomorrow.”

It was a little after two o’clock in New York when Pat called our Manhattan store. “Is Mitch there? . . . Hello, Mitch? How are you doing?”

“Not well, mom.”

“What do you mean, not well?”

“I don’t know. There is a blackness in my head. It doesn’t go away. I don’t know if I’m ever going to be well.”

“Everything is going to be all right. You’ll be home tomorrow. As soon as you get here we’ll start working on this. We’ll get you a doctor.” A psychiatrist that had been recommended to us would be back from his vacation. Pat felt like she wanted to fly through the phone line to be with him. If only she had been able. “You’re going to be fine. Just go to the apartment; calmly gather your things and pack. Just relax and take it easy. We’ll see you tomorrow.”

“O.K., Mom. I’ll see you tomorrow,” Mitch said.

“Is Donaldo there? Pass me Donaldo . . . Donaldo . . .”

~

Almost twenty-three years earlier, Cuernavaca, Thanksgiving Day, 1979. I was just coming home from work. In Cuernavaca, Thanksgiving had no particular meaning. I was alone. My wife Pat’s brother, Mitchell John, had died just a few weeks before in a terrible crash in a DC-10 on its final approach to the runway in Mexico City. Pat, my son Freddy and I had gone to California for Mitchell John’s funeral, and Pat, because of her advanced pregnancy was not allowed to fly back to Mexico. I had returned to Mexico because of work commitments. Western Airlines, as a courtesy, was flying me back to be with my wife in a few days. It was about 5 o’clock. The phone rang. I answered, “Hello?”

“Fred, it’s me,” my wife Pat said with her distinctive voice. She was in Carmel at her mother’s with Freddy-boy, our first-born. She was expecting our second child any moment. “How are you doing, babe?” she asked.

“I’m fine. How about you? How is Freddy?” I was planning on flying in two days to be with her. We were planning to have another home birth; Pat insisted on it, and her mother seemed fine with the idea. After having assisted her in the birth of our first son, I wasn’t overly concerned either. I had read, and now re-read a number of books on the subject. I was familiar with all the procedures, with different heart rates, the baby’s and the mother’s, contractions, dilations, and complications. And most importantly, Pat would be only five minutes away from the Monterey Community Hospital in case of any emergency.

“That’s why I am calling. I have some abdominal pains.”

“Are you sure they are not contractions?”

“It feels like pain.”

“Are you sure?”

“Of course I’m sure. I know what a contraction feels like. This is high in my abdomen, above my tummy. I called the midwives, but being Thanksgiving, there is no one home. I was calling to let you know I have decided to go to the hospital. I think I need to have this pain checked. I cannot go through a home birth if you’re not with me. I don’t think it is wise. Not with this pain”

“I agree. Are you going to the Monterey Peninsula Hospital? Is your mother going with you?”

“Yes. But I feel bad, because we were just sitting down to Thanksgiving dinner, and now I have to go to the hospital.”

“Don’t feel bad. I’m sure everyone understands. Let me check on flights. I think I can make it to be with you. Hang in there. I’ll be there soon. Who is staying with Freddy?”

“Don’t worry, everything is taken care of. Just get here fast. Oh, I’m feeling the pain. I don’t remember my contractions feeling like this. This is different, don’t fret.”

“I’ll get there as soon as I can. Love you, bye.”

I immediately called Western Airlines. There was a flight leaving Mexico City for Los Angeles in two hours, with a connection to Monterey arriving at eleven o’clock that night.

“I’ll be there in an hour and a half.” I told them. I hung up, packed, jumped in my car and drove to Mexico City, left my car at my sister’s and had her take me to the airport. I jumped on a DC-10 to Los Angeles with twenty minutes to spare.

Pat’s complaint gave me pause; what could this pain be? I was estimating how many hours before my second child would be born if everything went fine. When Freddy-boy was born, his mother had been in labor for about eleven hours. With a second child, five or six hours might be reasonable. It could be more, it could be less. Whether I was going to make it to the hospital in time to witness the birth of my second child was becoming a long shot. But with a little luck . . .

Bad luck: I arrived in Los Angeles only to find out that my flight to Monterey had been cancelled. I would need to spend the evening in a hotel near LAX. The earliest flight the next morning was at 9:15, arriving at 10:45. There was nothing I could do, but worry. I called Carmel and my brother-in-law Mark answered the phone. He was taking care of Freddy and informed me there was no news from the hospital. I gave him the details of my arrival, then talked to Freddy-boy. He was almost two years old, but he could talk a little on the phone. I thought he was a genius!

I woke up the next morning thinking that for sure I was a father again; that I had missed my baby’s birth. Then I remembered Pat’s pain. Hopefully it would be

nothing. I ran to the airport, got on my flight and was happy to see Mark waiting for me at the Monterey Airport.

“Let’s hurry. As far as I know they have just taken her to the delivery room. I think you’re going to make it,” Mark said after exchanging greetings.

I was scrubbing off as instructed by a nurse when a doctor walked in and started scrubbing next to me. “You must be the father. Pat’s husband?”

“Yes. That is I.”

“I’m Dr. Fuerstner. I’ll be assisting in the delivery. Your wife made it clear that she wanted a natural childbirth,” he said, looking into my eyes for a reaction.

“What about the pains she was having yesterday?”

“I was worried about a possible separation of the placenta from the uterine wall, but she’s doing fine. Everything seems normal. It should be about half an hour more.”

We finished scrubbing and walked over to the delivery room. Pat was lying on her back with her feet in the stirrups in the middle of a contraction. I rushed to her and held her hand. She smiled in acknowledgment. She proceeded to burp, it smelled like sausage. She burped again. When the contraction was over I asked, “How are you doing, honey?”

“I’m fine. Last night when I got to the hospital my pains stopped. I guess I was waiting for you. But they wouldn’t let me go home. They put me in a room for observation. They wouldn’t feed me anything. It was terrible. They told me I could start labor again any moment, and it wouldn’t be good for me to have a full stomach. And you know me, I’m always hungry.” I cleaned the sweat off her face as she continued. “I was starving this morning when I felt a contraction. It was probably around seven. A nurse came in and asked me how I felt. I said fine, that I was starving and could she please get me some eggs and sausage. I didn’t tell her about my contractions for fear that they wouldn’t feed me. There was no way I was going to deliver a baby without eating first!”

“Don’t worry, you’re doing fine,” I assured her.

“No, I’ve been burpin’ sausage all morning. It’s awful.” Another contraction silenced her. Another burp.

“I see what you mean,” I said. “Breathe in. Breathe out. That’s it. You’re doing great. Breathe in. Breathe out.”

“Doctor, that really hurt. That last contraction. Can’t you give me something for the pain?” she said as she tried to get her breath back.

“It’s too late for that. It wouldn’t do any good. Just one or two more contractions and it will be over. The baby will be born before anything will take effect. You’re doing great,” he replied. Then applied a perineum massage to widen and stretch the birth canal.

Two contractions, two more burps, and our baby’s head was out and breathing. Mother and child breathing in unison for the first time; he was breathing, huffing

and puffing like a newborn bull. A burp and one more contraction later, and the baby was out. “Congratulations, it’s a baby boy. The umbilical chord is very short. I am going to have to cut it before I pass him to you,” the doctor said. An instant later he laid the baby on Pat’s stomach, the two of them no longer joined by the umbilical chord.

Pat put her hands around his little body and said with a smile, “hi, Mitchell.” She turned to me, “I knew it was going to be a beautiful baby boy.” Indeed he was.

It was slightly past noon, November 23, 1979, and I had made it in time to witness my son’s first breath.

~

# Monterey Herald November 15-17, 2002.

## Mitchell Xavier Sanchez Areias

**M**itchell Xavier Sanchez Areias, 22 died on Tuesday Nov. 12 in New York City. He was born November 23, 1979 in Carmel and raised in Cuernavaca, Mexico in his golden youth. He then moved to Carmel Valley with his family.

Mitchell attended Carmel Middle School, was a graduate of Robert Louis Stevenson School and received his B.A. degree in International Studies from U.C. Santa Barbara in June 2002.

Aside from working in the family business, Mitch was a musician, composer, skateboarder, poet, salesman, surfer and builder of dreams and flying machines. He was a man for All Seasons and dearly loved by all that knew him.

He is survived by his mother and father, Patricia Areias and Federico Sanchez; his brother Fredrick, his grandparents Carol Areias and Poul Pederson, Margaret Seabrook and Xavier Sanchez Cos; his uncles and aunts, Laurie and Larry Areias, Mark and Roxanne Areias, Pepe Perez Gil, Alexandra and Rogelio Guerrero, Susana and Othon Roffiel and Xaviera Sanchez.

A Memorial Service will be held at the Church in the Forest at Stevenson School on Sunday, November 17 at 11:30 a.m.

The family suggests that any memorial contributions be made to the Suicide Prevention Service, PO Box 1222, Santa Cruz, California, 95061.

~

I was in our home in Carmel the morning after I heard that my son Mitch had died. I suddenly felt an urge to go out to the courtyard. The courtyard is square-shaped with a circular fountain in the northeast corner. Each side is about thirty-six feet long. The courtyard is surrounded on two sides by our house, on the west side by the garage, and on the north side there is a wall about seven feet high looking up into a hill full of oak trees. It is a very cozy, secluded spot.

When I stepped outside, a shadow fell over me. I looked up. A Red-tail Hawk was slowly circling around me, inside the courtyard, with his wings spread wide. I could almost touch it. The hawk silently glided around me nine feet off the ground. Its golden eyes locked intently on mine. I don't know if hawks can smile, but this one

seemed to be smirking. I turned in a circle three times looking into its golden eye, just out of reach. I extended my hand inviting the hawk to come closer but it beat its powerful wings and quickly disappeared over the trees on the hill.

I wished with all my soul the hawk would come back. It did, flying over the trees, this time circling high over me. It circled three times again, gliding without beating its wings, and then it soared. It flew straight up. Swooooooosh, higher and higher in the sky. As it flew higher it got smaller, until it went so high, I couldn't see it any more. And this time I knew he wouldn't come back.

The following Sunday there was a memorial held for Mitch at The Church in the Forest. The setting itself is a beautiful Church. The ceiling is about thirty feet high. The wall behind the altar is all glass looking into the Pebble Beach forest. The Church was filled to capacity including all the standing room. Extra chairs were brought in to accommodate all.

Reverend Gudenberg did an Invocation followed by the twenty-third Psalm from the Old Testament. Then I Corinthians 15 from the New Testament and a quick review of Mitch's life.

The tributes that followed clearly reflected the wide range of Mitch's intellectual and artistic pursuits, and also spoke of his noble spiritual inclinations. The memorial was an uplifting experience. What made him so special, to me, was that he was my son.

After the memorial, my wife Pat invited all who wanted to join us for lunch at our home. Uncharacteristically for that time of the year, it was a beautiful afternoon, and it stayed warm well into the night. Friends and family surrounded us. We fed more than three hundred and fifty people that afternoon, and it is a testimony to our friends that all this was accomplished without my knowing exactly how.

Many of Mitch's friends recounted memories and told Mitch stories. I was amazed at how many people knew him. Every age group was represented.

I addressed my sisters and wife that afternoon and told them, "In a strange way, today, I felt better." We embraced and cried.

R.B. a dear friend of my two sons, Freddy and Mitch, had made a beautiful videotape of Mitch practicing skateboard moves. We played the videotape in our large living room. Mitch was filmed falling several times as he attempted each complicated maneuver, involving moves with names like a varial flip or a double kick flip, until eventually he was shown mastering these very advanced skateboarding tricks. The video's soundtrack was composed, performed and sung by Mitch. We had several showings of the tape so everyone could see it.

That afternoon, a woman approached me in the kitchen. She said to me, "You don't know me, and I didn't know your son. My son was a friend of Mitch's and he called me. Since he couldn't go to the Memorial, he asked me to go in his place. There had been a very grey cloud hanging over my life and during the Memorial this cloud was lifted. This darkness was replaced by light! I wanted to share this with you, but I couldn't bring myself to come and invade the privacy of your house. So I

decided to go home. As I was driving to my house a hawk started flying right in front of my windshield. At that moment I decided to turn around and come here and share this with you. That is all. Thank you. I should leave now.”

“You can’t go yet,” I said. “You must stay another fifteen minutes, at least, please,” I said as I led her out to the back terrace that overlooks Carmel Valley. Our house is a beautiful adobe Mexican-style house wrapped around a hill with spectacular views of the Valley.

I had hired, with the help of Gary, a very dear friend, a helicopter to come over our house and fly around the property three times to symbolize the flight of the hawk, as well as to pay tribute to my son Mitchell’s dream of building a helicopter. Coincidentally, I also thought back to Mitchell, my wife’s brother, who died in a plane accident shortly before Mitch’s birth. As a young man he had joined the army to become a helicopter pilot. That had been one of his dreams; unfortunately the army recruiters misled him. They forgot to inform him that he needed a college degree to be a pilot, so he only had a chance to work as a helicopter mechanic. I thought the symbolism would be fitting to include my son’s uncle, after whom he was named, and with whom he had so many things in common.

At three o’clock, the designated time, the helicopter appeared in the distance flying in the middle of the valley toward us. As the helicopter slowly approached, overhead and from behind us, a hawk suddenly appeared flying at full speed, racing towards the approaching helicopter as if to greet it. For a moment it seemed that the hawk would fly into the helicopter, but it passed about three hundred feet below it, and then turned left toward the neighboring hill. As the helicopter circled over us three times, the hawk made three big circles above the hill to the east of us. As soon as the helicopter finished its three circles and headed west, into the sun, the hawk flew east, and disappeared over the hill.

Later in the afternoon, a man approached me and said, “I want you to know that the hawk that greeted the helicopter was a blue tail, not a red tail hawk.”

“Yes, I know,” I responded amicably. “That was the other Mitch, Uncle Mitchell not Mitch,” I smiled enigmatically, turned and left him standing in the beautiful warm afternoon.

~

The hardest and most terrible thing I have ever had to do in my entire life was to inform my son Freddy that his brother, my other son, Mitchell, had died. I didn’t have any explanations about what happened to him. Mitch was dead; he had committed suicide, which is all I knew. I could offer nothing more.

When I think about Mitch’s death, I am accosted by a multitude of questions. Even though you know that this is a futile exercise, inevitably you look inwards to try to find what you could have done differently, the questions flying uncontrollably through your mind.

I had promised Mitch, that in time, we could find the answers to his problem. Initially, the question was only an explanation and perhaps a solution to panic attacks and maybe depression. Now, aftoktognosis was also a part of the inquiry.

Richard Feynman, one of the most prominent physicists of his time, who as a young man worked on the Manhattan Project, was asked to put together a series of physics lectures for Cal Tech in the early sixties. In the beginning of his second lecture, he stated, “. . . if we stand on the shore and look at the sea, we see the water, the waves breaking, the foam, the sloshing motion of the water, the sound, the air, the wind and the clouds, the sun and the blue sky, and light; there is sand and there are rocks of various hardness and permanence, color and texture. There are animals and seaweed, hunger and disease, and the observer on the beach; there may even be happiness and thought. Any other spot in nature has a similar variety of things and influences. It is always as complicated as that, no matter where it is. Curiosity demands that we ask questions, that we try to put things together and try to understand this multitude of aspects as perhaps resulting from the action of a relatively small number of elemental things and forces acting in an infinite variety of combinations.

*For example: Is sand other than the rocks? That is, is the sand perhaps nothing but a great number of tiny stones? Is the moon a great rock? If we understood rocks, would we also understand the sand and the moon? Is the wind a sloshing of air analogous to the sloshing motion of the sea? What common features do different movements have? What is common to different kinds of sound? How many different colors are there? And so on. In this way we try gradually to analyze all things, to put together things which at first sight look different, with the hope that we may be able to reduce the number of things and thereby understand them better.”<sup>1</sup>*

Because thoughts and happiness exist as part of the physical world, we should be able to understand their true nature. My personal knowledge of my son gives me a small glimpse into parts of the puzzle. Ultimately, the last intimate thoughts and feelings of someone who has died are unknowable. The problem, at first glance, might seem insurmountable, but I believe we have learned enough to start unlocking the secrets of the brain.

The quandary of the mind/brain is a most baffling and difficult one. As Kay Jamieson says in her book “*Night Falls Fast*”, “*One hundred billion individual nerve cells—each reaching out in turn to as many as 200,000 others—diverge, reverberate, and converge into a webwork of staggering complexity. This three pound thicket of grey, with its thousands of distinct cell types and estimated one hundred trillion synapses, somehow pulls out order from chaos, lays down the shivery tracks of memory, gives rise to desire or terror, arranges sleep, propels movement, imagines a symphony or shapes a plan to annihilate itself.*”

There are more than sixty known neurotransmitters, and about fifty different types of neurons, with an enormous number of interconnections. To be able to fully

<sup>1</sup> Richard P. Feynman, Robert B. Leighton, Matthew Sands, *The Feynman Lectures on Physics*, California Institute of Technology, Addison-Wesley Publishing Company, 1963.

understand how the brain generates thoughts, feelings and actions seems overwhelming. Yet, I do feel confident that a general overall theory of how the brain works is within our grasp. And to understand a disease you have to understand health. To understand madness, you have to understand how even the healthy brain creates the illusion of self, so it can navigate in a seemingly continuous fashion through life.

I became interested in the problem of the mind/brain back in the seventies in my college days at Tufts University when the first ideas on Artificial Intelligence were being conducted on the newer, more advanced computers. For example, computers were programmed to play chess. Yet, years later, chess masters invariably beat the computers. The most famous example is the match between Big Blue and the indisputable, best chess player in the world, the Russian Gary Kasparov. Kasparov lost the first match, the second match was a draw, and then Kasparov started winning. Later he recounted that once he realized Big Blue had no fear, he changed his strategy accordingly. In this instance, fear obviously has a healthy role. In the rematch, after Deep Blue was retooled, taking fear and other factors into account, for the first time, a computer consistently beat the world champion.

Inevitably, anyone with a serious interest in artificial intelligence turns to the human brain for inspiration to accomplish what seem to be simple, almost automatic tasks: translating, interpreting written or spoken language, “seeing” in three dimensions and coordinating a physical movement like picking up a wrench and tightening a bolt. Other tasks, thought to be very simple, like recognizing a face in a picture, remain unsolved

In the seventies, there were only a few popular books that dealt with neurons or the brain, simple descriptions of the anatomy, a few good guesses at how or where things happened. The subject remained an interest of mine, where from time to time I would find a book on the brain, neural networks or artificial intelligence. Little by little, as the years went by, more and more scientific studies and observations were coming in, and by the late nineteen nineties, there were a whole slew of books on the matter being published.

When my son Mitch first showed signs of mental illness and the doctors that saw him couldn't help him, I turned back to this intriguing subject, hoping that I could find an alternative solution to his problems. I had believed that the medical community would have a standard approach to these issues; and I trusted, mistakenly, that if the few doctors that had seen my son couldn't help him, most others wouldn't be able to do so either. Such an approach was unfortunate, because since then, I have realized that many doctors, like engineers, architects or lawyers, are incompetent; I should have learned at least enough to determine whether a doctor was inept by understanding the standard materials that were available. It was regrettable, because if I had learned more about the “standards,” I would have been more aware of how huge and dangerous the problem could potentially become. The doctors didn't even try to educate my wife and me on the seriousness of these

issues. I wasn't aware that certain situations can cascade and deteriorate rapidly, and I was lulled into a false sense of calm by the fact that Mitch seemed, most of the time, to be just fine.

And so, at a leisurely pace I spent my time studying various books on different approaches or from various perspectives of how the brain works: how we use symbols, where we store some types of memories, why we feel, how language might evolve and so on. I was hoping that perhaps, I could find some insights so I could help Mitch. I had a few ideas, but nothing solid. Regrettably, Mitch generally didn't want to discuss them. I often wondered whether he didn't want to hear that he was sick; perhaps, I hoped that he truly wasn't sick anymore, and was simply not interested in the subject. I do know for most of the last five years of his life he was not depressed, he was well, as well as most of us. He perhaps suffered a few panic attacks that neither his mother nor I were aware of, but there couldn't have been more than three or four besides the five that we knew of or witnessed. I also understand now, that under the surface, there must have been more than we knew.

In my quest to gain aftoktognosis, to understand how suicide is possible; in trying to answer the questions my father asked about suicide, a concept so alien to him; in trying to answer my wife's questions, my own questions, I proceeded to reread all my books relating to the brain, this time with a new focus, a changed perspective and a renewed sense of urgency. I also read several books that specifically dealt with suicide, with depression and manic depression, as well as books on therapy, parts of the *Diagnostic and Statistical Manual of Mental Disorder*; and books that friends lent me. I also found several new books on the brain, all extremely illuminating. But still, I had no idea where to start, or how. The classical and even some of the new approaches couldn't give me the answers I sought. I would have to find my own way. In those first days after his death, I could only venture that my son had a brain attack, something similar to a heart attack.

Another aspect of my enquiries inevitably raises the questions of how and why the medical community in general, the psychiatrists and psychologist that saw Mitch in particular, failed to warn my son or myself of the potential dangers that his condition presented even if considered a remote possibility. Considering that one out of five depressed people commits suicide, it is not such a remote possibility, and should be openly discussed.

I had confidently told Mitch that we could find the answers. Slowly order appeared from chaos, and gradually an emergent model surfaced in the dark, turbulent cauldron of my mind. Originally, whatever I found, I hoped I could include in detail in this book, but "*The Master Illusionist, A Neurological Theory of Psychology*" as I came to call my brain theory, took a life of its own. The theory is very technical and can be daunting, so here, I tried to present a simplified version, hopefully accessible to everyone.

# Mitch and the Scorpions

What attracted my attention was the way he was walking. When you have children you can't be careful enough, accidents happen. These can vary from small cuts or bruises to serious injury and even death. My son Mitch was about six years old. He was in the back yard of a friend's house in Cuernavaca. It was around noon, and he was making his way, little by little towards the house shaking his head slowly from side to side, occasionally looking up and gritting his teeth. With his left hand he held his right wrist tightly, palm up, and slowly moved it up and down as he opened and closed his right fist. Something was wrong. I ran over to him. He was trying unsuccessfully to hold back some tears.

"What happened?"

"I was stung by scorpions," he said between clenched teeth.

"Are you sure?"

"Yes. I know how it feels—from the last time," alluding to the fact that he had been stung a few months before. "I was stung several times."

"You mean two or three times?"

"I'm not sure. Maybe five or six," he said, trying not to cry, as he extended his hand for my inspection. I couldn't see anything.

"Can you show me where this happened?"

"Down there," he said pointing down the sloping lawn of the garden.

I followed him and he looked at a cement cover in the ground, an electrical register for the garden illumination.

"I wanted to see what was in there. I was stung when I tried to lift the cover." I moved to pry the cover open. "Be careful, father. There are a lot of scorpions in there."

I proceeded to lift the cover with the aid of a stick, in case the scorpion was still there. Not one, but seven blonde scorpions, about three inches long, were moving about inside the register with their tails in the air ready to strike. I put the cover down immediately.

"How are you feeling, Mitch?"

"My hand is burning," he said as he opened and closed his small fist, "and I feel a pain coming up my arm all the way to my shoulder."

"Can you swallow?"

He nodded.

“Come let’s go to the house.” I picked him up and carried him up the sloping garden.

“I feel like hair in my throat,” he cried, as the effects of the poison constricted his throat.

“Don’t worry. You are going to be fine.”

“Now it hurts to swallow,” he sobbed.

As soon as I got to the house I informed my host of what had transpired. He quickly went to the refrigerator and served Mitch a glass of milk. Then he got a pack of Avapena, an antihistaminic.

“Take this pill, Mitch.” I handed the pill to him and helped him wash it down with milk.

“He’ll feel bad for a couple of hours, probably develop a fever, but he should be fine by this afternoon,” my host said. “There are a lot of scorpions around here; this pill is the best for this. We’ll give him another one in a few hours depending on how he is doing. Since he has been stung before, he might have developed some resistance to the venom.”

“I feel hot, father.” Mitch added, “I want my mother.”

“How is your throat?”

“It feels a little better,” he added optimistically.

I passed Mitch to my wife. She took him into a bedroom and lied on a bed with him and scratched his back. This was always soothing and comforting for Mitch. About half an hour later he was sleeping. We stayed with him observing him as he slept, making sure he was breathing evenly. I checked his forehead. He had a slight fever.

As I sat there, I couldn’t help thinking how Mitch, as a young child, seemed to be more prone to accidents than normal. When he was learning to walk he banged his head with the furniture; when he was a little over a year old, he tripped and knocked out his front baby teeth. Shortly after his permanent teeth came back in, he knocked out his left front tooth again.

Once, our gardener had burned some dry leaves and garden waste in our back yard and left a pile of soft, hot ashes, unbeknownst to my wife and me. Mitch, a little over a year old, was walking bare foot on the grass in the yard. He got to the edge of the pile of ashes, and must have felt a nice sensation as he dug his toes into the soft, warm ashes. However, as he moved toward the center of the pile, there were still some hot coals and he burned his foot. He jumped up and down screaming one of his first words, “Hot, hot!”

My wife’s brother Mitchell died a few weeks before Mitch was born. Her brother loved to go running and swimming and bicycling. He had always been a physical fitness buff. My wife, Pat, after a visit to California, brought her brother’s ten-speed bicycle back to Cuernavaca. The bike was in good shape, except that it was missing a rubber protector on the end of one of the steel handles.

A few months after Mitch had burnt his foot, he was playing in the yard. As usual he was in his underwear, enjoying the hot midday weather. Apparently, Mitch pulled the bicycle over, and as it fell, the handle, with the sharp steel edges, cut through Mitch's exposed, left chest. My wife heard him yell, found him with a big gash on his chest, called my sister Pelusa, who lived nearby and rushed Mitch to the doctor. The doctor neatly sowed his chest, which healed into a nice slanted scar.

As Mitch slept, I fondly touched the scar on his chest. I thought I should learn to take better care of him. I also felt he would, inevitably, like all of us, learn to take care of himself. He woke up later in the afternoon and aside from a very sore right hand, he was fine. I breathed easier. For the rest of his life, Mitch continued to do risky things, to push the envelope, but as far as sustaining physical injuries or accidents, he was quite average.

~

When I first met my future wife, she was committed to pursuing her own aspirations; so she was not interested in committing to a long-term relationship. She joined the Peace Corps and went to Ecuador, while I went to Tufts University in Medford, Massachusetts. She believed in some aspects of the flower-power philosophical movement, which were vague enough, but did include the notion that too much industrialization was the cause of many of the evils of the world. She argued adamantly that we, the privileged ones, should volunteer and go help the poor of the world. She did that, while I quietly got a formal education.

A few years later, after we were married, partly because of her beliefs, I chose to go to a rural area of Mexico, where through starting a small business using the principles of "Small Is Beautiful," I hoped to help, if not the poor of the world, the poor of this area of Mexico. I was twenty-eight years old; we had a small child, our first son Freddy, and another on the way. In this manner, I hoped not only to make a good living for me and my family, but also to gain high standing in my wife's eyes: doing something about the poor instead of just talking about the problem. I went to Huajintlan, a small town in the state of Morelos, nestled next to the Amacuzac River.

Many years before, my father had studied the possibility of making Portland Puzzolanic Cement. A geologist had come to him with discoveries of deposits of volcanic ashes he had made in the vicinity of Huajintlan. My father proceeded to file some mining claims.

Adding finely ground naturally occurring volcanic ashes, of the right chemical composition, with regular Portland cement, makes Puzzolanic Cement. Puozzoli, Italy was the first known locale where these volcanic ashes were used in a mixture with hydrated lime for construction purposes; hence, Puzzolanas is the name given to these volcanic ashes.

After a few quick trips to the Mining Ministry, I was able to locate my father's old mining claims. I then went to Huajintlan and arranged with the local people to mine and process this material. I designed and built a small grinding plant there, using mostly the labor of the local peasants. I trained some of the young men to become welders, mechanics, and electricians.

Huajintlan lies in a valley at about four thousand feet of altitude, directly south of Cuernavaca. The weather there is for the most part tropical; it has warm nights, in the eighties all year round; in the daytime, temperatures easily reach ninety to one hundred degrees, especially late in the afternoon. It rains about one hundred and eighty inches during the rainy season, generally running from June to September.

The town of Huajintlan was organized into an Ejido after the Mexican Revolution of 1910. The Ejido had about 1100 hectares, divided among 180 peasants. An Ejido is a communal farm, where the farmers that cultivate the land have the right to the product of the land. However, they do not own the land, but because of that they do not pay any land taxes either. Each Ejido has the right to organize itself along any lines the members wish. Huajintlan had been organized along the most communistic ideas of the period. Every decision had to be approved by two-thirds majority. Every man had access to the same amount of land. The exception was a small acreage of about 200 hectares that were irrigated by means of a canal that had been built through a mile-long tunnel in the mountain that fed water from above the Amacuzac River into this low lying area. In this irrigated area, three crops a year were possible. In the other parts of the Ejido, only one crop was possible during the rainy season. Therefore, the founders of the Ejido, in their attempt at fairness, made a hectare in the lower areas equal to three hectares in the upper areas. This proved to be unwise for the most part because of yearly variations in rainfall. In dry years the yield in the higher areas was less, and in very wet years part of the crop could be lost because it could not be harvested on account of the mud.

I had to have widespread dealings with the Ejido to rent the land on which I was building the plant, as well as extensive negotiations with them about exploiting the volcanic ash that was found in abundance in their lands. Wherever this volcanic ash was close to the surface, the ground was completely sterile. For them, as farmers, these deposits were a nuisance; therefore I had thought that my dealings with them would be quick and simple. I naively believed that the roads I would need to build to have access to the Puzzolanas and the actual removal of these ashes would be beneficial to the farmers, not to mention the financial benefits I was offering them in the form of royalties. In retrospect, considering that I was dealing with a communistic society where two-thirds majority is needed to decide anything, it is amazing what I did get done.

One of the first things I needed to do was hire a night watchman to look over the construction materials and the steel out of which the plant and our machinery would be built. One of my first local helpers, Pascual, a smart young man slightly

older than I, recommended an uncle of his for the night watchman job. This is how I came to meet Tonito. I'll never forget the first time I met him: he had a very bad eye infection; his left eye was closed with dried puss on his eyelashes; his pants were held up with a rope; his shirt was in tatters; and he was barefoot. He told me he was sixty years old, a lie as I found out later; he was more like seventy years old, but he thought the Mexican laws didn't allow you to work if you are over sixty-five. In the Social Security's wisdom, people over sixty-five are supposed to be taken care of, except, of course, when you haven't worked. Tonito told me that he had lived in the area all his life and knew everyone. This, he seemed to believe, qualified him to be my night watchman. Since I was there, among other reasons to help the poor, I hired him. The first thing I did was enroll him in the Social Security program so he could get medical attention for his eye. A week later, I was amazed to see that he used his first paycheck to buy a belt and some shoes, as they probably cost him the entire paycheck. Once he had shoes and a belt, he walked over to me and asked, "When am I getting a gun or a rifle? If I am responsible for protecting the plant, I need a weapon."

I responded cautiously, "Tonito, I hired you because you know everyone locally. If someone comes here at night and wants to steal something, you just simply get out of harm's way and you tell us who did it the next day. Then we'll let the police take care of them. I really don't believe that someone from the outside is going to come to this forsaken place looking for something to steal."

After a brief moment, Tonito nodded and smiled; he liked my logic.

A few weeks later as we were building the foundations and retaining walls of the grinding plant, late in the afternoon, I gave the instruction to cover up the cement bags with a tarpaulin, as there seemed to be some indication that the first showers of the rainy season might start. Tonito was just showing up for his night shift, and he walked over and said to me, "That is not necessary, tonight there will be no rain." I nodded, but did not countermand my previous order. I did check the next day if it had rained, and indeed it had not.

A few days later, as we finished work, the sun was out in all its glory and I didn't even consider that I needed to worry about the cement bags. Tonito, however, came over and said, "We need to cover the cement bags. It is going to rain very hard tonight." I looked at him skeptically, and he repeated, "Believe me. It is going to rain very hard tonight; if you don't cover them, they will be ruined—the cement bags." I turned and gave the order to do as he suggested. And, indeed it rained very hard that night, just as Tonito had predicted.

Now, that the rainy season had started, it would be almost automatic that it would rain every night, at least a few inches. Next day I gave the order to cover the cement bags, and again Tonito came by and said, "No need to do that. There won't be any rain tonight." There were only a few bags left, and if they were spoiled, it wouldn't amount to much, but in proportion to Tonito's salary it would be a huge loss. He seemed very confident so I decided to follow his advice, sure that the next morning

I would be down a few bags of hardened cement. But it did not rain! When he showed up the next afternoon, he could sense that I was looking at him in a different way. He approached me, and as an explanation to my thoughts he said, "It won't rain tonight either. This rainy season is going to be very dry, perhaps just a little more than half of what we normally get."

I fell into a game with him, in which he predicted rain or no rain for the next three months with one hundred percent accuracy. One morning I thought I had him; I was driving down the highway towards the grinding plant, and you could tell that it had been raining heavily because the pavement was sopping wet. Even though I faced the prospect of some hardened cement bags, I couldn't prevent a small grin as I imagined Tonito's expression at finding the cement bags ruined because he had predicted no rain. About half a mile before the plant there was a sharp curve in the road, and after turning you could see the plant from the road. What can I say: four hundred yards before the plant, the pavement went from sopping wet to absolutely dry. Not one drop of rain fell on the grinding plant or the cement bags!

Meteorologists can predict rain with about the same accuracy as predicting heads and tails when you flip a coin, but here was a man who could neither read nor write, who had never gone to school, yet he could predict, not only the rain in the next twenty-four hours, but the amount of rain for the entire rainy season within a five percent accuracy. I kept records of the rain that fell that year; it was fifty-eight percent of average.

I asked him, "Tonito, how can you know if it's going to rain or not? How can you know that it is going to be a dry year?"

"I can't explain it," Tonito answered. "I just seem to know. In my head something tells me."

"I mean, perhaps you notice the flowers or the birds doing something different, the cloud formations in the sky with a different color, there must be something, Tonito?" I prodded, hoping to glean some useful information that could be commercialized.

"No, I just feel it in my body. It's nothing like that. I just know."

How tragic, I thought, that a man with this incredible talent is at the bottom of the social ladder in this remote rural area of Mexico. Perhaps in another time, a hundred or five hundred years ago, he would have been one of the most prominent people in society: a society where this knowledge might mean the difference between prosperity and poverty.

I tried to find another angle to exploit. I thought about how the Ejido was organized, they could plan their crops and manage their lands better if they used Tonito's ability to predict correctly if it would be a dry, normal or a wet year. Tonito could become one of the most prominent persons in Huajintlan. When I mentioned this, Tonito shrugged, "The town has always dismissed me as a mad old fool."

My young family, a few months later was blessed with the addition of Mitch. My family lived comfortably in Cuernavaca where medical care for the children was quickly available. Also, in a couple of years we would need good schools for them. I was commuting to work twenty-five miles a day into a very rural area, yet felt it was a small price to pay for the comforts and services my family enjoyed.

One day at work in Huajintlan, I heard the curious story of an old man who was crazy. I was told that they had to tie him up so he wouldn't get lost, as he frequently forgot who he was and where he lived. If I was concerned with helping the poor, I thought I certainly must see how the poor deal with old age. Was this a case of senility, of Alzheimer's? I needed to find out more, even though an old man in these environs might be much younger than what our society thinks of as old age. When I saw Tonito coming to work, I decided to ask him what the scoop was; he knew everyone.

"Oh, yes. He is my uncle. He lives with my niece, Pascual's cousin."

After talking to Pascual, Tonito made arrangements for me to visit the crazy old man. The next afternoon, Tonito took me to his niece's house, and after introducing me he said, "I must leave to get back to work and check the plant. Good evening. I'll see you tomorrow."

The niece said to me, "Pascual told me that you wanted to see my grandfather. He is old, he is ninety-nine years old, and he tires quickly. Please don't get him excited. He is a little bit crazy up in the head if you know what I mean."

"I'll try to be brief," I responded. I was primarily concerned with checking out the rumors of the old man being tied down and his squalid living conditions.

She led me outside, through the back of the house past a small vegetable garden with a few stray chickens and a pig. At the back of the garden was a small stone construction about eight feet by eight feet and five feet high with an asbestos tile roof. There was a single opening that served as an entrance and windows for cross ventilation. Without further words, she left me standing there. I bent over and went in. The old man was sitting on a cushion on the concrete floor; his only clothing was white boxer shorts. On a wall there was a big iron peg with a round metal ring, and attached to this was a long piece of gauze that was loosely tied to the man's wrist with a simple knot. If you just pulled at the knot, it would become undone. You could see another door leading to another small room with a toilet and a washbasin.

As soon as the man saw me come in, he quickly moved to dust the floor next to him with his hand. There wasn't much to dust off, the floor was spotless. "Please sit down."

"Thank you," I answered as I proceeded to where he indicated.

"You must be the engineer, the one that is building the plant."

I was surprised, because I had been expecting some kind of half-crazy old man, probably suffering from Alzheimer's. After I introduced myself, he continued.

"I lost count of how old I am, but I can tell you that I was twenty-nine years old when I joined Zapata in the Revolution. I don't know if you're aware that he was from near here." I nodded that I did.

“What did you do in the Revolution?” I asked.

“What I did doesn’t matter much. What happened is the important thing. The whole Revolution became a farce. What we fought for was completely perverted later. The Revolution was betrayed by the Politicos.” He went on to discuss, in his own words, not mine, concepts like communism, collective ownership, rigged elections of corrupt officials, the principles of laissez-faire economics and why the communistic ideas of the Ejidos hadn’t worked, particularly in the case of Huajintlan.

“Take the case of the Ejido of Amacuzac. It is our neighbor and it doesn’t take a genius to see how much more prosperous they are than us. Same lands, same weather, same rains, but they organized along the lines of private ownership: each person can do with their plot whatever he wants without consulting anyone. Not like here in Huajintlan, where every time you want to take a walk you have to have a meeting to see if two thirds agree with you. It is just plain stupid.”

The old man asked me how much I was paying my workers, he asked me about the benefits they had. He acknowledged that it was more than double the normal wages around there. He seemed genuinely interested not only in how I was doing things, but also about which young men I had hired.

“Beware of Teofilo. He is a very political animal. He might have joined your enterprise for his own perverse political motives,” he said enigmatically. He then returned to the Mexican Revolution. I was having a great time discussing this with the old man, especially the origins of the Revolution from the perspective of someone that had been there, a participant in some of these historical events.

“Before the Revolution, people worked. That is why things improved. Today, everyone just waits for a hand out. No one wants to work. Take the irrigation tunnel for instance; that was built before the Revolution. It is almost ninety years old, and it is still working, in spite of the fact that nobody has done any maintenance on it for seventy years. They can’t even agree who should do it or pay for it, so all they do is argue and postpone the inevitable. The people that farm the irrigated lands have an income of more than twice that of the others, in spite of holding only one third of land. The Revolution started because the rich landowners up river didn’t want to share the water. That was a huge mistake, as Zapata would show them. You would think that people would’ve learned that water issues have to be taken seriously, and careful thought exercised when deciding on its use. You would think that having more water for irrigation would be a high priority, an obvious priority, but no, they are too lazy. They don’t want to build canals or tunnels. The agricultural production of eighty years ago was greater than today. Just imagine that,” he lamented.

We went on to discuss classic guerrilla tactics, what Mao and Che Guevara many years later would call guerrilla warfare. He called them Zapatista maneuvers. We talked about the Porfirian dictatorship; he called it The Supreme Government. We talked about the dangers of monopolies, he called them Cartels. And so we spent the afternoon engrossed in conversation. Soon after sunset, I noticed that it was getting dark and the old man seemed tired.

“I want to thank you. This has been a memorable afternoon. I don’t want to overextend my welcome,” I said to the old man. “You don’t know how instructive all this has been for me. I will see you tomorrow.” I stood up careful not to hit my head with the low ceiling and extended my hand.

“I will see you tomorrow. Same time?” he said as he shook my hand in a warm handshake.

“Same time,” and, smiling, I turned and left.

The next afternoon after work I returned to see the old man. The niece saw me coming. “Engineer, I don’t know what you said to him, or what you are trying to do, but this must be your last visit. This morning he demanded clean pants, ironed shirt, and polished boots! He demanded to be bathed and shaved, even though he was bathed and shaved two days ago. He even demanded his hat and belt! He insists that all this is because you are coming to visit. I cannot be doing this every day. Do you understand? I have small children to take care of.”

“I do too. I understand. I’ll talk to him. Don’t worry,” I said placatingly.

I walked to the back where the old man’s little house was. I stooped through the door and there he was: smiling with his ironed shirt and pants, with his polished boots; his hat on the floor next to him. “They didn’t believe me that you were coming to visit me,” he grinned. “How are you? Please sit down.” He pointed to another pillow on the floor next to him.

“I’m fine,” I grinned back as I sat down. He asked me about my children, about my wife and about where I went to school. Finally, I was able to get him back on track talking about the Mexican Revolution. We continued talking economics and various subjects. Hoping to learn more about the local inside politics of the Ejido, I probed his knowledge of some of the people I had been forced to deal with. He knew them all, and I wondered how anyone could say that this man was crazy. I could not detect one single trace of Alzheimer’s. As the afternoon wore on, the sun set again, and once more the old man seemed to tire. I thought it was time to take my leave. Hoping to get a summary of the afternoon’s conversations, I turned to him and looked him in the eye, “After all this we have discussed, what is the most important thing I should keep in mind?”

The old man rubbed his moustache with his thumb and index finger a couple of times as he thought carefully. After a brief interlude he clasped his hands tightly between his face and mine; he squeezed them tight and shook them slightly as if he held a pair of dice and was getting ready to roll them. Looking directly into my eyes he said, “Love. Love is the most important thing. If you find it, hang on to it tightly.” Again, he tightened his clasped hands between our faces. “Hang on to it, because you never know how long it is going to last.” After a few moments, he let his hands drop. He averted my gaze and looked out the window with a deep expression of longing. I don’t know how long we sat there in silence.

“I will see you tomorrow,” I said eventually as I rose, letting the impact of his words sink in.

“Maybe, my friend,” the old man answered as we shook hands.

“Not maybe, tomorrow, same time, my friend,” I reassured him. He nodded and smiled.

“Maybe,” he repeated.

I smiled, turned and left.

That night the old man died. I bought a tall slim head stone, the tallest in the small cemetery of Huajintlan and paid for the old man’s funeral.

~

When Mitch first showed signs of mental problems, and the doctors that first saw him misdiagnosed the situation and proved unable to help him, I promised my son, that in time, the answers to his problems would be known. But now, as I contemplate the enormity of the task ahead, as I try to fulfill that long ago promise, a promise that even if I am successful, is too late for Mitch, I continuously have particular memories intruding into any effort I expend. I feel as if some outer power is guiding me, as if I have no other choice but to write these memories down. At the same time, objects, names and historical events keep occupying my thoughts, pointing me to the past, connecting me, so to speak, to other times, other people and places.

These intrusive thoughts started a few months before my sister’s death, five months before my son’s. Coincidences kept cropping up, again with a sensation of outside purpose, that forces greater than myself were pushing me. So I have written it all down, resolved that I would find a reason and the order later. But for now, I felt compelled to write everything down, as if I had been commanded to do so by some guiding intelligence.

The story of Mitch, the story of my son, should start somewhere with my capacity to love. It was love, after all, the love for a woman, which inevitably led to his birth. It was love that bound us deeply together. It was love that made our relationship so special.

I think back to the old man tightly clasping his hands in front of my face, “Love; when you find it hang on to it. You never know how long it will last.”

~

It would be months later that I came to understand that these memories were all linked to strong emotional contexts, and that they were cropping up in my mind because of my high emotional state; because of my intense grief. At the same time, these thoughts were intruding because I was highly motivated to find answers; these thoughts were clues as to how the brain works, and the answers slowly emerged. Many of these intruding memories, which served as guidelines for the story, as well as for my research on the brain, remained, as they are relevant; others have gone into history unnoticed, erased, only leaving traces in my mind, but those traces are still part of the guiding light.

In my terrible state of grief, an almost forgotten memory kept intruding, and I couldn't move past it. I later came to understand that it was part of a healing process, a mechanism of the brain, which helps one understand that there is joy, goodness and peace; that, in time things will change. I also realized that this first love became one of the driving forces in all my future loves.

I fell in love for the first time in kindergarten. We were four years old. Her name was Alma, which appropriately, in Spanish, means Soul. The Williams Kindergarten was run and owned by Mrs. Williams, a young widow. Alma was the first female to touch me deeply, aside from my mother, of course. I was completely happy just to be around Alma, with her, just to look at her. I would do anything to see her smile or make her laugh, what a joy that was.

If anyone tried to bother her, he or she would have to contend with me. I remember one boy who was harassing her, probably to tease me. I told him to quit and he challenged me to make him stop. It happened during recess. Even though he was slightly bigger than I, he left me no recourse but to jump on him. He counterattacked mercilessly. We wrestled and turned and twisted on the ground. It seemed like we went at it for a long time. I was beginning to tire and feared that my strength would give out before I subdued this individual. I think that Alma must've reported our fight to Mrs. Williams because she showed up and broke it up. When I explained that this guy had been bothering Alma, kind Mrs. Williams, probably aware of my relationship and feelings for Alma, sent me into the classroom with Alma and had a talk with this boy. He never bothered Alma again. I don't know if fear of another prolonged fight or what Mrs. Williams had said to him was the true cause of his newly found respect. But I was happy and proud to have protected her.

Alma's mother would drop her off at the Kindergarten about an hour earlier than the scheduled 10:30 a.m. In contrast my mother would drop me off just a few minutes before the scheduled time. I couldn't convince my mother to take me to school earlier than necessary. I wanted to go live at the Kindergarten so I could spend more time with Alma. She had beautiful brown eyes, and when she smiled my whole world would light up. If she laughed, my heart felt warmer. I tried to come up with any kind of excuse to be invited to her house, or invite her to mine. My main problem became convincing my mother to take Alma home later in the afternoon. This of course meant that my mother had twice the driving to do. Still I beseeched my mother so much that occasionally she relented.

Of course, every day I was eager to go to school; it meant that I would see my beloved Alma soon!

Two years went by; it was time for us to go to grade school. Alma was sent to the Oxford School, considered the best girl's school in Mexico City. I, in turn, was sent to Two United Nations School, a bilingual, coed school. So it came to be that we were separated.

My three younger sisters in turn would go to the Oxford School. My sister Pelusa, 15 months younger than I, was one year behind Alma, and through her I would get

little bits and pieces of information about Alma. I would get to see a picture of her in the yearbook every year. When I was ten years old, Mrs. Williams had her first fifth-year class reunion. I of course insisted in going. There was the possibility that Alma might be there. Not surprisingly, Alma and I were the only ones that showed up. She was taller than I and this made me feel a little bit uncomfortable. We looked at each other, and stood in awkward silence. What could we say to each other? I think we both realized that we had grown apart over these past five years.

Curiously, that year Silvia, was expelled from the Oxford School for bad behavior. Her mother, a very famous actress, decided to send her to the Two United Nations School. She was one year ahead of me. I fell in love with her. This helped me to move on without Alma.

However, over the years, I would still keep tabs on Alma through my sisters. I heard that she had become an extremely beautiful young woman, much like her mother. She went on to become an actress. Through the news of her films in the media I would occasionally hear about her. I wondered all these years if my love for her had been real or just an illusion. After all, was it possible that I, so young could have had a love that profound? And could you feel that love if it was not reciprocated? Could it be that she hadn't loved me and that it was all in my head? Could so much happiness be a product of my own imagination?

Some years later, my wife and I had had our first son, Fredrick Lawrence, and I immediately discovered a love much greater than any I had known. We had a homebirth. When the midwives left, my wife and mother-in-law, exhausted fell asleep. I was left alone, and responsible for Freddy that first night. I spent all night holding him and checking him, afraid that something might happen to him if I fell asleep. The next morning we were bonded. I felt like I was his mother, a father was too little. I was reluctant even to let his real mother hold him. He was mine; the love I felt for my son was of a different nature, it was a love that was unconditional and unidirectional.

A few months after Freddy was born, my dear friend, and Freddy's Godfather, Enrique Gomez asked me to be assistant director in a new play he was going to direct and produce. The play's title was *The Maximum Happiness*. There were three characters in the play: a man about forty, who invites his twenty-year-old lover, a young and handsome man to live with him; the young man, who in turn, meets a thirty-year-old woman and invites her to live with the two of them. She becomes the lover of both men. Both men in turn continue to be lovers. She has gotten pregnant, and since she alternates sexually with the two men, she doesn't know who the father is. The play starts at this point. The older character is trying, successfully so far, to impose on his two younger lovers a philosophy of "The Maximum Happiness". This happiness, in a nutshell, is that two lovers are better than one.

Sergio, Jaime and Sylvia, all three superb actors, were the protagonists of the play. Sergio played the role of the older man, Jaime played the young man, and

Silvia played the woman. Yes, the same Silvia that I had been in love with when I was in fourth and fifth grades.

After the first few rehearsals, we all realized that we needed to sit down and figure out some of the complications this triangle of love generated. We tried to give the characters more depth by identifying whether there were undertones of jealousy or not. And if so, when? Was it truly love, or was it more passion? Was the relationship between the two men after they shared a woman different, or was it the same as before? So we shared stories of some of our personal experiences that might help bring to light the subtleties in the interactions of the characters.

Enrique, the director, functioned as coordinator of the session. Sergio shared with us a once-in-a-life experience when he had sex with two women. And how there had been an element of possessiveness on the part of the women. Silvia admitted that she had never had sex with two men simultaneously, but had had an ongoing affair with two men at one time, without either one of them being aware of the other. She was having a hard time with her character relating to two guys that were her lovers, as well as being lovers themselves. Jaime had experienced an affair with a man and an affair with a woman, separately but simultaneously. He told us that in his experience, the man easily accepted his affair with a woman, but that he hid his homosexual affair from his woman partner because he felt she wouldn't understand or allow it. I thought certain parts of the play had to be based on the assumption that a love without sexual overtones or jealousy or possessiveness was implicit. Otherwise, the play couldn't unfold smoothly; I couldn't see how to bridge certain parts if we assumed that the characters felt jealous and possessive. I related my experience with Alma when I was four years old as an example of such a possible love. And so little by little we were able to make the characters more credible by giving them depth.

Four weeks later we had our first performance; opening night. Customarily, the press and other actors and guests are invited. A small cocktail party takes place after the performance and hopefully you hear positive reviews. Alma was among the guests. At the time she was living with another actor who had been invited because he would be working in a future project with Enrique. I didn't give it much thought. I was married and about to become a father for a second time.

After a great performance, I was standing at the bar, trying to get a sense of how well the play had been received. The lobby of the theater was crowded and loud with too many people talking at the same time. Sergio came out of the exit that led to the dressing rooms. He looked around, walked up to me and said, "Alma is over there." He pointed to her. She had her back towards us and was talking to a small group of people. "She's a good friend of mine. Come, I'll introduce you." I had forgotten that I had mentioned my connection to Alma. "Sure," I said and we started walking towards her. I think Sergio thought it would be interesting to see what happened. Sergio tapped Alma on the shoulder as he said, "Alma, I have someone here that I want to introduce you to." As she turned, her beautiful brown eyes locked on mine

and she smiled and said, "I don't need to be introduced to my first boy-friend, Sergio." We hugged and grinned at each other. Now I knew. Our love had been real.

~

When I was fifteen, on a cool summer afternoon in Mexico City, I was having lunch with my grandfather Federico Sanchez Fogarty. It was just the two of us, and I remember that particular day because he mentioned, almost in passing, a couple of things that at the time seemed odd and somewhat disturbing. All his grandchildren knew him by his nickname Tito. One of the greatest tributes to his memory is that all sixteen of his grandchildren claimed to be his favorite grandchild. Of course I knew better; I was the favorite one. I am the oldest male grandchild, and I was named after him. Why would it be different?

Having ordered his usual martini, and after looking at the menu and ordering lunch, Tito turned to me and said, "You have to beware of madness in the family."

"What do you mean?"

"Nothing. Just that you have to beware of madness, it seems to crop up once in a while." He said, and sipped on his martini.

"You mean that there have been some crazy relatives?" I asked, knowing that Tito's brother Carlos had died as a young man of thirty-six. Carlos had continuously worried about being constipated; he was forever taking laxatives to improve his condition, real or imagined, I was never quite sure. People made it sound that Carlos had been a hypochondriac. I heard one account of Carlos's death from an aunt: having taken some laxative pills for horses Carlos had literally shit himself to death. Tito had mentioned his brother's death a couple of times and I was sensitive to the fact that his loss had pained my grandfather enormously.

"I simply mean that madness tends to run in families. I don't mean that I know of any mad people in our family. It was simply a thought. When you are the head of a family, you have certain extra responsibilities; like watching out for madness in the family. One day you will be head of a family and you will need to pay attention to the possibility of madness cropping up occasionally."

I waited for him to elaborate more, but nothing more came forth. He changed the conversation and started talking about Poker and the odds of making a pair, two pairs, three of a kind and so on. I probably would not remember his comments on madness were it not for another remark he made that same day after we had finished lunch.

"I am going to die in your presence," Tito said out of the blue.

I turned to him alarmed, at first thinking that he meant he was going to die right then and there. He must have read my mind, "I don't mean now, and I don't even mean soon. All I am telling you is that I am going to die in your company. Whenever I die in the future, I know you are going to be with me. It is nothing to worry about. It is just the way it is going to be."

“You’re scaring me talking like that. Are you sure you are all right?”

“Yes, yes. I am fine. There is nothing to worry about. I already told you. And I am not going to die for many years, relax.”

He had just turned sixty-five and had been forced to retire from Cementos Tolteca, a cement company he had worked for most of his adult life. I thought that perhaps these gloomy thoughts might be related to his state of mind and have something to do with having been forced out and made to feel that he was old and couldn’t contribute any more. However, that afternoon and occasionally thereafter, I would think of his words, “I am going to die in your presence.” And in an odd sort of manner, as soon as that thought entered my mind, always another thought intruded, “You have to beware of madness in the family.”

Ten years later I was in Acapulco visiting my father and so was my grandfather Tito. On the second night of his visit, fate would have it that Tito slipped in the bathroom early in the morning as he came out of the shower. He broke his femur. My father had gone out, and so, I called an ambulance and accompanied him to the hospital.

Tito had come to see my father because he hadn’t been feeling well. He had a small lump in his neck on the left side. The previous night I had been talking to him and invited him to come dancing with my friends. Surprisingly, he declined. It was the first time that I could ever remember him passing on an invitation to go out on the town. He loved to go out and listen to music and drink. It seemed strange that he had chosen to go to Acapulco to see my father, as the medical facilities there were nil compared to Mexico City.

When we arrived at the Social Security Hospital, the doctor inserted some screws into his knee and put him in traction with some weights to keep the leg extended. It was later decided by all members of the family to move him to Mexico City so that he could get the best possible care. Back in Mexico City, a few days later, Tito underwent surgery to place a stainless steel pin in his femur to eliminate the need to have his leg in traction for several months. The doctors decided to do a biopsy of the small lump in his neck while they did the leg surgery.

The next day I went to the hospital to visit and I arrived to find him comfortably sitting propped up in bed surrounded by family members. As usual, he was the center of conversation and was going on about some story in his life. I was standing at the foot of his bed looking at him when suddenly I heard him say very loudly and clearly, “I am dying.” He said this with a terrible expression of fear etched on his face. I turned to look around me to see how everyone reacted, and I realized that I was the only one that heard this. Everybody was still listening intently to the story he was telling. I turned to look at Tito again, and again in a terrified expression he repeated, “I am dying.” I looked around a second time and every person was keenly following his story as he approached the punch line. He was a great storyteller; he finished in a very serious tone, but everyone broke up in laughter as he hit the punch line. He then joined in the laughing, enjoying himself immensely.

I realized that I was the only one that had seen and heard him say, "I am dying." I couldn't explain it, and to this day I still cringe when I see in my mind's eye his expression of terror. I went out into the hallway to walk around, clear my head and think about what I had just experienced. I walked to the end of the hospital corridor and looked out the window.

My thoughts were interrupted by my father's voice, "I need to talk to you."

I turned to him and said, "You mean about Tito dying?" I asked without thinking that it was his father I was talking about.

"How do you know that?"

"He told me. Well, he didn't exactly tell me, but in a strange way, he did tell me." I then proceeded to tell him what I had just experienced.

"Sometimes two people are very connected and you can hear their thoughts and feel their feelings," he said as if this would explain it all. "What I want to talk to you about is this: I have just come from the doctor's office and the biopsy results are in. My father has cancer of the lymph system." I nodded in understanding. "He has a few months to live. My mother doesn't want to tell him anything unless he asks. She feels that if he wants to know, he will ask; if he doesn't, he won't. It is her husband, after all, and I feel that she has the right to do what she wants. Basically, what I am telling you, better asking you, is that you're grandmother doesn't want anyone telling him anything unless he specifically asks. Is that clear?"

"Yes, that is very clear. You don't have to worry about me. But he does know. Of course, if he asks me something I'm not going to lie to him. But I think he won't ask. He already knows."

"If that is the case, then it's all right. But please, let's respect my mother wishes. Don't mention anything to him."

Tito never did ask anyone anything about his health or what the doctors thought. He submitted to whatever treatment my grandmother wanted for him without complaint. Eventually he went home. There was not much more to do.

A few weeks later, he became unconscious. I would come every afternoon to visit him. I would go into his bedroom and walk up to him, and touch his hand. Mentally I would say to him, "I am here," just to let him know that if he wanted to prove himself right about his comment ten years earlier he should do so now. Nothing happened for the first few days. I felt glad that he was unconscious with no pain. I also knew that he would not want his friends and family to see him like this. Tito had always been a proud man and he always had dressed and groomed impeccably.

On the eleventh day I walked in to see him and performed my silent ritual. I mentally urged him, "If you're going to die in my presence, do it now. I am here. It is all right." I held his hand, it felt a little cold. I looked at him and mentally repeated, "I am here, Tito." At that, he stopped breathing. Death is so palpable. There was no doubt in my mind that he had just passed. He kept his promise to me, after all.

I now understood what it was he wanted from me. He had been an extraordinary proud and elegant man. He wished that I would make sure he was presentable after death. My aunt Magas, my father's younger sister, walked into the bedroom at that moment, we exchanged glances and that was enough to inform her of his death. I told her that we should shave him and clean him up before we told my grandmother. She nodded and both of us calmly proceeded to take out the needles and hoses that were attached to his body. I quickly shaved him and she combed him. We inspected our handiwork and decided that he looked slightly better than in the last few days.

My aunt cried softly, "He was the best father in the world." I went to the door of his bedroom and told my grandmother and relatives that were assembled outside.

For twenty-six years after his death, the thought, "beware of madness in the family," drifted into the dark recess of my mind. When I thought about Tito or his death, I did not think about madness in the family; I thought mostly about him and his life with me.

In the years that followed his death I learned a lot more about the man and his professional life, about him and his family and everything he managed to achieve. Tito would serve as an inspiration in the years to come. Shortly after my son died, all these memories came back. "Beware of madness in the family." Can people really know something far out in the future? Could my grandfather's warning have been grounded on something? Was there madness lurking somewhere? Or was it just coincidence?

~

## Mitch's Mortality

One evening, when Mitch was in kindergarten, I was putting him to bed, helping him with his pajamas. He had an angel's look about him, with his round face, red hair and green eyes. He had a very raspy voice for a kid, making him sound almost like an adult. We were talking about nothing in particular, things that parents and small children do as they are about to go to sleep. I was reading him the *twee! beetle battle in a bottle with a paddle in a puddle* book. He would laugh at the idea of the beetles with paddles and I would suddenly press my lips on the skin of his stomach and blow air. This sounded like flatulence and tickled him. I loved to hear him laugh. I can still smell his soft, small-child scent, always so fresh. I was asking him about school and his friends, thinking about how intense some of those friends had been for me. There was a pause, and he looked at me with his big green eyes and asked me in a more serious tone, "Is Tito your grandfather?"

"Yes."

"And he died?"

"Yes."

"And my grandfather is Xavier?" Mitch asked, making reference to my father. He and his brother Freddy were on a first name basis with their grandfather.

"Yes," I answered, wondering where this conversation was going.

"And he . . . is going to die?"

"Yes," I answered slowly, attempting to mask my hesitation and not be so blunt, trying to assess the impact on him, and trying to anticipate where he might be going with his interrogations. He nodded slowly as he thought about this. He rubbed his lips with his tongue. He seemed to accept this simple fact. He looked up at me.

"And . . . Are *you* going to die?" he asked me hesitantly.

I smiled, and I looked him in the eye before answering. "Well, yes . . . someday." As soon as I said this, he started crying inconsolably. I quickly tried to comfort him by adding, "You don't need to worry about that. I am going to live many more years. Your grandfather, Xavier, is also going to live a long long time. You will be an old man, older than me when we die. Don't worry about me, don't cry."

"I'm not worried about you. I am worried about me. I am also going to die!" he answered sobbing.

"No, you're not."

I held him tight and I kissed him, trying to console him as he contemplated his own mortality for the first time.

I said softly, "You are young and going to live much longer than me. You definitely need not worry about this. Believe me. Little boys grow up to be old men. Your grandfather was a little boy once. I was a little boy once." He seemed to calm down, and after I scratched his back a little bit, which he always loved, he was sound asleep.

As he breathed evenly, I thought back to a time just a few years before, when he was about thirteen months old. Then I had really worried about the possibility of his accidental death. We had been living in Cuernavaca, a small city nestled in the mountains south of Mexico City. The weather is just fabulous there. It is so good that you can live in shorts and short sleeves. The altitude keeps the weather cooler, so the temperature rarely rises above 90 degrees, and hardly ever falls lower than 70.

Both Freddy and Mitch loved to run around naked. Mitch, for a brief period, got in the habit, when he saw a swimming pool, of ripping his clothes off, running to and diving into the pool. He would hold his breath as he sank to the bottom. There, he waited for me to dive in and get him. He would lie motionless at the bottom of the pool, face down, arms and legs extended. I would jump in, pull him out, and as soon as his head was out of the water, he would exhale loudly and laugh. I tried in vain to explain that he could not count on me to jump in and get him out every time. I found it impossible to reason with him; I told him that I couldn't be getting my clothes wet every time he saw a pool. I tried various things: sometimes I let him stay there, at the bottom of the pool for a while, but always jumped in before he would get scared or doubt that I was jumping in to get him. Every time this happened, I took Mitch for a swimming lesson. I would stay in the pool with him for as long as possible. I hoped he would learn to swim soon.

Every year around the sixth of January my grandmother would have a party for all her great-grandchildren. All my cousins and our children were invited to her ranch. The ranch was really a country house, about forty minutes west of Mexico City, and about one hour from Cuernavaca. She was a landscapist, and had beautiful gardens. One of her projects had been an aquatic garden. This pool varied in depth from four feet to about six feet. It was full of plants, a few fish, some water lilies and a lot of algae. The algae floated on the surface and gave the appearance of a solid mat of ground cover.

All the adults were sitting in a terrace nearby, about twenty yards from the pool, when one of the small children yelled that someone had jumped in. I immediately turned to my sister Pelusa and her husband Rogelio, as I knew that they were aware of Mitch's recent proclivity for diving and holding his breath. The three of us jumped up and headed for the pool. We split out to cover different sides. It was almost impossible to see anything below the surface. The water was calm, as the great amount of algae precluded any ripples if the surface was disturbed. My wife Pat and more of my cousins joined us and everyone was contemplating jumping in to start looking blindly at the

bottom of the pool, when suddenly Pelusa jumped in and pulled Mitch out. As soon as his head broke the surface, he simply exhaled and laughed.

From that moment I was determined that he would learn to swim before we had another accident. Back in Cuernavaca, I heated the pool so I could stay in the water with him as long as necessary. I played with him, let him sink, forced him to swim sometimes, and slowly he got the idea. We spent hours every day in the pool. In about ten days he was swimming quite well. Freddy had learned to swim when he was about two. Mitchell was swimming at fifteen months of age. I breathed a sigh of relief. I wouldn't need to worry about swimming pools any more.

As parents, we are perpetually worried about our children. My grandmother told me when Freddy was born, "Now you will always worry. I still worry about your father." I found it amusing that my grandmother would worry about a fifty-year-old man. But she was so right. I always thought that if, some terrible day, news of one of my son's death reached me, it would be due to some accident. In the case of Mitch, I thought that it could be some bungy chord jumping accident, or a freak wave in the ocean when he went surfing, or a cracked head as he practiced his skate board tricks, or even crashing into a tree as he sped down the slopes in his snow board. He was always fearless. Well, almost always.

The first time we took Mitch skiing we went to Jackson Hole. He was a little over three years old. We put him and Freddy in ski school. At the end of the first day, when we went to pick them up, the ski instructor asked us, "How come you didn't tell us that Mitch didn't speak any English?"

"Of course he speaks English. What do you mean?"

"Well, he kept ranting in Spanish every time we tried to tell him something, and he would simply shoot down the slope. We had to go like demons to catch up with him and stop him. And then, every time we tried to explain how to make turns, he would look at us, and shoot down the mountain again. He just simply didn't understand anything we said."

"Well, he is bilingual. There is nothing wrong with his knowledge of English, believe me."

"Tomorrow we can have a Spanish speaking instructor. She's Chilean, and she is very good with little kids," he said, hoping to get Mitch off his hands.

I looked at Mitch. He feigned innocence and looked at the ground. I smiled inwardly and said, "I think that is a great idea. You think you can follow instructions better in Spanish, Mitch?" I asked him in English.

"Creo que si." Mitch answered in Spanish.

"Well, if you don't follow instructions, there will be no skiing tomorrow, young man."

"Es que no me dejan hacer nada," he complained.

"I'm sure your new ski teacher will let you do a few things, Mitch, but I want you to promise me that you'll listen to her instructions. Otherwise, there is no skiing tomorrow."

“Esta bien, es que es muy divertido echarse de bajada.”

“So it’s settled. He says he’ll pay more attention tomorrow,” I said to the instructor. “We’ll see you tomorrow at nine.”

I put a hand on the back of the neck of each of my two sons as we turned to leave. “Freddy,” I queried, “Why didn’t you tell the instructor that Mitch spoke English?”

“Father, Mitch was having a good time. I didn’t want him complaining and crying; then I would have to deal with him all day. That’s no fun.”

“I see,” I muttered, not knowing if I did see or not, but still laughing inwardly.

Many years later, when Mitch was fourteen, I got a call from the neighboring hardware store. “Do you know that your son came in and bought a whole bunch of bungee chords?” the owner asked.

“Yes,” I lied. “Why?”

“Well, I just thought it was strange. He came in and took several bungee chords, then he came back for more, and he returned a third time and took all my stock. I just thought it was odd and that perhaps you should know.”

“Well, I wasn’t aware he had bought so many chords, I’ll look into it, thanks for calling me.”

After talking to Mitch, he reluctantly admitted that he was testing some bungee chords for the purpose of making a bigger chord to go bungee chord jumping. I was not too concerned, because when I look back on my own childhood and teen-age years, I did an incredible number of things that to this day I am amazed that not only did I survive, I didn’t even suffer any major injuries. I hung on the outside of trolleys in Mexico City, I was body surfing since I was seven, I went caving with nothing but home-made lanterns using a candle and a tin can, climbed up trees and then jumped to neighboring trees, went white water rafting. Somehow I knew implicitly what I could do and what I couldn’t. In that respect I trusted my children to be similar to myself . . . and Mitch was a smart kid.

However, I decided that the best approach would be to teach him the principles involved. Mitch had taken some algebra, so it was easy to teach him the principles of springs: the relations between elongation and mass, as well as how to design a system of springs when you build them in parallel or in series. It was his first physics lesson. He took to the math. I double-checked what he was doing. He had rigged a ladder to climb high-up on a tree. At the top of the tree, he had tied the bungee chord to a branch. There was a small platform to stand on and jump from. Below the tree was our trampoline on which he practiced his skateboard and snowboard maneuvers. I had seen him practicing his skateboard flips as he went high in the air, and on other occasions he practiced somersaults and flips with a snowboard taped with duct tape to his feet. He could be quite impressive.

“Dad, if I make a mistake with the bungee, I still land on the trampoline. And I am doing all my testing standing up, not hanging by my feet as you see on television.” Mitchell proceeded to show me the loop where he could stick one of his feet in and in that manner stand on the suspended chord as he held on with one hand. “It is

perfectly safe,” he said, pointing to the small platform high up in the tree. “I have already jumped into the trampoline from up there without the chord. It’s no problem, seriously,” he said laughing.

“If you say so,” I said with some doubt, but I had seen him jumping on the trampoline so high that he could almost attain that same height, so it was perfectly conceivable that he could do that safely . . . and he was a smart kid like me. I should trust him, I thought, so I let him proceed. When I didn’t hear much about bungy jumping in the next few weeks, I thought it had been a phase that had passed.

A few years later, and this I heard from Mitch’s friends not Mitch, he had perfected his bungy jumping, had calculated how to adjust the length of the bungy according to everyone’s weight, and had convinced a number of his friends to go bungy jumping from the bridge near our house that spans the Carmel River. Mitch was the expert: he knew how to tie your feet, shorten or lengthen the bungy as needed, depending on how close to the water you wanted to go. He even convinced some overweight friend of his to try it. For this purpose two bungy chords were rigged and the kid had a thrill.

From the bridge to the river is about eighteen feet. The river normally is only about a foot and a half deep. What they would do is jump, head first, suspended by the bungy from their feet. The purpose was to get your hair wet, and, of course, avoid hitting your head on the rocks at the bottom of the river. Mitch was the only one that consistently got his head wet; and once, supposedly, when the river was only about twelve inches deep, he managed to hit his head on the bottom of the river, apparently without serious injury as the bungy chord was very close to breaking his fall before bouncing back up. That was Mitch.

A year later we went skiing with some friends in Park City. Mitchell wanted to go snowboarding, but they didn’t allow snowboarders at the ski resort that we adults were skiing. So Mitch pleaded for me to give him a ride to the nearby ski lift area where not only did they accept snowboarders, they even had a half pipe and ramps especially made for them. I dropped him off. At the end of the day, on my way to pick Mitch up, I was slowly making my way through the huge parking lot and I was looking up into the ski resort. Close to the bottom of the hill, there was a big ramp, and I saw a snowboarder approaching it at high speed barreling down the mountain slope. He disappeared from sight, behind the ramp, emerged flying high up into the air in a trajectory that was obviously at the wrong angle, and simultaneously, as he struggled in the air to correct the trajectory, he started to lean to one side of the snowboard, more and more as he approached the snow covered ground, he was now lying horizontally, his snowboard and head at the same height, parallel to the ground, as if he were trying to correct his trajectory with his snowboard as his body continued flying in the wrong direction, and smack! He landed on his side on the snow. He bounced in a big puff of flying powder. I couldn’t help but laugh. It was hilarious. I was still laughing after I parked and got out of my car. “Wait until Mitchell hears about this. He’s going to love

it,” I was thinking, when who do I see approaching me, carrying his snowboard under his right arm, covered in snow—snow under his glasses, snow on his hair, snow in his hood. Could it be? Yes, that snowboarder was Mitch.

~

When I look back at the preparations for Mitch’s memorial, I remember reverend Gudenberg asking me, “What is special about your son?”

I couldn’t think of anything that was special other than the fact he was my son. *That* made him particularly special *to me*. Then, after reflecting a little bit more I answered hesitantly, “If I think about it more carefully, he was everything I wasn’t. He was a poet (not an engineer); he was a musician, an artist, a skateboarder (not a soccer player), a surfer and a snowboarder (not a tennis player), and a salesperson (not an accountant).”

Occasionally, I wonder if his love for me and his desire to be like his brother had anything to do with his death. Could his effort to emulate his brother and me (we’re both engineers) have contributed to a feeling of inadequacy and insecurity? I felt bad that perhaps I hadn’t reinforced as forcefully as possible that he was a fabulous person in his own right, being exactly who he was. On the other hand, I know that his intensity in life was something he picked up from his mother, his brother and me.

Mitch’s friends had no trouble seeing what made him special. He was a leader, who led by example, an inspiration to all to be better. We took so many things for granted in our family.

On the inside cover of a simple program printed for the memorial, we included a poem Mitch had inscribed in a portrait that he painted of his mother and gave it to her for Christmas the year before:

*Blue sky, clear for thunder!  
This gold note rings forgiveness,  
Silence,  
The pink clouds fluff out above  
The sea.  
Imagine a distant past,  
Learn to live it and not to perish  
Under its burden.  
Far away, a bright twinkle  
Promises safety.*

*-Mitchell Sanchez, December 2001-*

Different people volunteered to do eulogies. Incredibly, without any coordinating, each eulogy touched on a different aspect of Mitch’s life. The first

speaker was Dale, Mitch's history teacher. Among other things, he said, "He had little tolerance for shallow thinking. His attitude was that these topics, though they might be a century or two in the past, were vital. Many of us are spectators in our lives; Mitch was a participant."

Then Solera, friend of Katie, Mitch's girl friend, read Katie's eulogy. In part it mentioned, "Dino and I shared so many wonderful times together traveling through Europe, going to Mexico, drinking wine, dancing and singing, and just snuggling and watching the Simpsons. The last five years of my life have been so special because of what we had. Mitch taught me what honest, unconditional, true love really is."

Mark, Pat's brother spoke next, "Mitchell was born in the wake of the tragic loss of our brother, his uncle Mitch and like his uncle he too was beautiful. Beautiful hair, smile, a body to die for, and those green eyes. Such gifts."

Here are a few words that Chris, a friend of Mitch's for twelve years, said that morning, "These are a few of my favorite memories with Mitch, I'm sure many of you share some of these:

"Bungee Jumping off Boronda Bridge—Cliff Jumping at Porters—Hours spent on the trampoline and in front of the Nintendo—Guns and Roses—BB guns—Our first time snowboarding when Mitch stuffed a pillow down his pants for cushioning and later took all my dad's money playing blackjack—The Middle School Talent Show—Ripples—Tennis ball launchers and boxcars—The back seat of a bus—His red hat—Playing Music—Hours of conversation at the UCSB Coffee Shop—Night Surfing—reading *Sidarta* at Carmel Beach—One of my favorite things to do . . . watching him ride a skateboard—And my most favorite . . . Listening to him play the piano."

My father followed, and after thoughtfully thanking all for their support and help in these trying times, he said, "In our family we have been blessed to die in order, the oldest first. This is the first time in my life that I am the oldest member of the Sanchez family. Mitch was the number four of the line up of my grandchildren and number 60 of the family line. It is supposed to be my turn. But Mitch, as a good Mexican jumped the line."

Mitch's Spanish teacher spoke about some of his qualities as a student, among them, "I have never met a boy that can give me so many ideas about why he wrote this or that. I waited anxiously for Fridays to be able to read all his different ideas. He was different with a fantastic mind."

Jack, one of Mitch's friends said, "I was just like 'yeah, this guy is cool.' Always having fun and still managing to pull his weight in the classroom. So much talent; excelling at everything he did. It was always some new homemade project with him. Soap box cars, bungee chords, ramps, steam engines, helicopters, go-karts and it goes on again. I always wondered where does he come up with this stuff. A great mind. Caring, compassionate, inventive, outgoing, outspoken. A true friend. A best friend."

Mitch's aunt Laurie wrote him a poem, "Mitch—A Shining Star". The last stanza says:

*When you look at the night's sky  
Think of Mitch not with a tear in your eye.  
Find comfort in the brilliance and sparkle above  
And remember him as a star with affection and love.*

And my sister Susana closed with thoughts of spirituality, of the transience of life through this world, the journey to perfect the soul, but specifically she referred to him as follows, "Mitch had the self-discipline and the heart to push the envelope.

"Back in Acapulco I saw Mitch fiercely surfing way past the last thirty-foot waves many times. This kind of 'whatever-it-takes' attitude is definitely one of the qualities of a true spiritual seeker.

"It's possible that in his search Mitch might have felt afraid or lost many times, but hey, who hasn't? Regardless, he always got back up and showed the willingness to try one more time. He wasn't afraid of falling, as we saw on the skateboard video that his friends put together."

Then I closed recounting my experience with the hawk.

But later, after his memorial, I came to realize that many things that made him special were never mentioned; his love of children, how he adored animals, and what a great water skier he was.

I found a napkin from a restaurant at the Mexico City airport among Mitch's personal belongings, on which he wrote the following in the summer of 1998; it gives a small glimpse into the relationship Mitch had with his younger cousins;

*"Nine o'clock and I was up and at them! Ready to face a long day of travel and dressed in my favorite blue shirt. I said good-bye to my hosts (his uncle Othon and my sister Susana). Tears running down her face, I kissed my cousin Othiana (my sister Susana's oldest, eight years old at the time). Carel, (the second), my precocious five year old cousin jumped up and wrapped his arms around my neck, clinging for dear life. I pushed some fruit forcefully down my mouth; mostly grape fruit and mango—and I was on my way. I struggled fiercely carrying my large golden suitcase into the white mini-van. The passenger's seat was my domain and playing with the radio was my activity; one I could indulge upon riding, half tired from the night before and enlightened from the weeks past. Although I was comforted by the euphonious sounds of the radio I was distracted by the stinging burn in my heart."*

All Mitch's younger cousins adored him. He would always seek them out and make them feel special; the older cousin interacting one on one with the younger ones; even sometimes, giving preference to his small cousins above his own peers.

After the memorial, I said to Freddy, "You and I know what motivated him to be a serious student. You and I know why he tried so hard to be as good as he could at everything he did. He had to deal with you and me as standards of comparison." I wondered if Mitch ever knew that he was, perhaps, better than us; certainly at some of the things that he excelled in.

The day after his Memorial Service while we were having lunch with my father and mother, we were commenting on how extraordinary it had been. I turned to my son Freddy, "I was proud to be his father. You should be proud to be his brother."

"I am," my son answered with a tear in his eye. "I am."

~

Mitch attended a few Sanchez Opens. The Opens were an excuse for the Sanchez family members to get together. There, as well as at our annual Christmas Eve dinners in Mexico City, Mitch had the opportunity to meet many of my cousin's children. We received this letter from my cousin Javier and his wife Alexis who live in Mexico and couldn't be with us. Their three sons, aged 13, 11 and 7 had met Mitch on just a few occasions:

*November 19, 2002*

*Dear Pat, Freddy Jr. and Freddy:*

*Alexis, the children and I have been thinking a lot about you all and Mitch. About what a great family you are, how supportive, how generous, how communicative, indefatigable . . . About Mitch, even though the opportunities were few, our memories of him will never be forgotten; he who on his second time skiing, did the tantrum, the one who did the 720 degrees in tumbling, the one who took me surfing, innocent, introverted, passionate, sensitive, charismatic, the singer . . .*

*We feel very fortunate to have known him and have memories so clear, so fresh, so close. We join all with our confused feelings, when someone so close, so dear, so loved, irrevocably takes such a hard decision.*

*We join you in your reflections, in your pain, in your fight to retake the road of life with the great void that Mitch leaves us, bare of dimensions that unknown to him he would leave behind and that erroneously he thought he would quickly heal.*

*Pat, Freddy Jr. and Freddy, we love you and hold you always in our hearts.*

*Hoping to see you soon,  
Alexis, the boys and Javier*

~

I was reading a book on the holographic interpretation of quantum mechanics. I was forty years old at the time. A hologram, in a very simplified way, is produced by shining a laser beam on an object. The beam is reflected, diffracted and scattered by the object and then passes through a holographic plate. Simultaneously part of the

laser beam is split off as a reference and is reflected at a specific angle by a mirror onto the holographic plate. The two laser beams interfere with each other, producing a series of dark and light bands; light bands result when the two beams are in step, when the crest of one meets the crest of the other and the trough of one meets the trough of the other; and dark bands appear where they cancel each other. These dark and light areas are called interference fringes.

The image on the plate bears no resemblance to the object photographed. The plate, however, contains a detailed record of all the phase and amplitude (the frequency and the height of the crests and troughs) information present in the beam that was reflected from the object. By reversing the procedure, shining a laser beam of the same frequency at the correct angle, the interference fringes act as a diffraction grating, bending or diffracting the light to reverse the original conditions of the laser that created the hologram. As a result, an image that can be photographed is created in three dimensions.

One interesting feature of a hologram is that if you cut the plate in half, the intensity of the image is cut in half, but the whole image is still represented. If you further cut it, the image fades more the more you cut it. The curious part is that a small piece of the holographic plate retains the information of the whole, but it will yield a washed out image; the smaller the fraction of the holographic plate the more washed out. Another interesting thing is that the same plate can be used to store many different images, by either changing the frequency of the laser beam, or changing the angle at which you split the original laser.

I have been attracted to the possibility that the brain's storage systems can be modeled on the hologram. For example, the neurons different firing rates could represent frequencies, and a different number of connections could represent angles. This type of modeling could be very powerful. It would be a model that could store a lot of information in a very small volume, and could "tag" information using combinations of frequency and angle, as well as retrieving related memories or information because of similarities in frequencies or angles. This model would easily permit you to store an almost infinite amount of information in a small mass.

An elegant, potential retrieval system could be modeled using these different angles and frequencies. It could neatly explain why memories can fade over time (the hologram is smaller) or why a particular memory brings up a whole series of associated memories or ideas (a similar angle or frequency). This model, however, would stand as a mathematical substitute for the real neuronal networking, and would only serve as a metaphor of how vibrations (firing rates) and angles (connections) can create memories of past events. It doesn't even begin to tackle the problem of attention and awareness. It would just explain a mathematically possible method of storing information. Similarly, just because the computer can retrieve information with an instruction, doesn't mean the computer is in any way aware of what the information means.

In the interpretation of quantum mechanics from a holographic perspective, the vibration of the nothingness together with the right interference patterns makes the Universe spring to life. This is a very strange concept because the Universe is here and not here at the same time. It is here when you have the correct interference, meaning having the right senses to detect it; it is not here if you can't detect it or tune into it. Fortunately we have evolved the right senses to "see" this Universe; otherwise we could not detect anything. The Universe, or us, ultimately, could or could not be here, in a real quantum mechanics indeterminate sense.

One evening, before dinner with my wife and children, I was pondering these strange ideas. I was sitting outside at night trying to envision a vibration of the nothingness. Not an easy task, as I find that the mind is very uncomfortable with a blank or trying to fill it with nothing. It is easier to imagine infinity, more of the same never ending! Suddenly the quality of my vision seemed to change, slowly at first and very subtly. My normal vision seemed to be replaced by thousands of pulsating dots, which changed in size, and pulsated at different frequencies. The dots seemed to be moving around each other as if they were dancing.

One of the strange effects of this was that I could see through these pulsations. The best that I can describe it is a feeling I was both seeing the objects and seeing through them. I could see through the chair, then through the tree, then through my house, then through the neighboring hill. I found myself staring into the infinite nothingness. I could "see" the etherealness of our physical Universe. I was staring fascinated, trying to control what I was seeing, or better yet, what I was not seeing, slowly overcome by an indefinable fear. Perhaps, it was a fear of hallucinating, perhaps a fear of the nothingness itself. The sensation that death and nothing is the same crept into my awareness and my fear increased. I tried to bring the fear under control, and through that effort, slowly my vision returned to normal and the fear dissipated. I had no conception of how much time had elapsed. I walked into the house and Pat was already having dinner with the boys. Surely, I thought, it would be useless to try to relate my recent experience to them.

Another curious thing that happened as a result of this experience was that for the next two months I couldn't dream in full color. My dreams came into my awareness in a black and white version of the thousands of dots. I was *seeing* in my dreams as I *saw* that dark night. I was seeing through things and seeing them at the same time. My full Technicolor vision was replaced in my dreams by representations made of dancing, pulsating dots. I still knew what I was seeing in my dream, but it was a very different kind of seeing. Thinking of quantum mechanics and the nothingness had been able to intrude in my way of dreaming; it had momentarily altered my vision. It was as if in a strange way my thinking resonated with my visual system and altered my perception of what and how I saw. Especially in my dreams.

When my two sons were growing up, and all through their high school years, my wife and I would sit down with them and have formal dinners in our dining room. I would have lively discussions with Freddy, and Mitch on many topics. Many a time, particularly during Freddy's junior and senior year, we talked about physics and math. My wife would say that I pontificated, not held discussions, but this I attribute to the fact that she didn't much care for or understand the subject matter of physics and math.

When my son Freddy graduated from Robert Louis Stevenson School, he went on to live in Berkeley where he eventually graduated as a Mechanical Engineer from Cal. I was very saddened by the fact that he had left the home nest, but greatly gratified to discover that my youngest son Mitch, as he started his junior year, also became interested in physics and math. Soon, our discussions about science got as lively as they had been when Freddy was still at home. At one point Mitch was insisting that he wanted to go to MIT and study Engineering. We would discuss, as I had previously with Freddy, cosmology, quantum mechanics, the working of springs or cams or whatever he wanted. I was amazed by the wide range that our discussions covered. I enjoyed tremendously seeing him stretch his mind.

In Mitch's senior year, one evening, I described in detail, as best I could, my experience of observing the nothingness—the strangeness of the experience, the warping of my dream states, as well as the weirdness of “seeing” the nothingness.

Shortly after, Mitch suffered his first panic attack. The first time, Mitch as well as his mother and I had no idea what this was. He didn't even have a vocabulary or the experience to explain what was happening to him. A panic attack is difficult to describe, especially when you are not aware that fear is the main feeling. The eyes shift quickly from side to side as if searching for something (a threat); the breathing is quick and shallow as if trying to oxygenate the body; when the flight-flight response is not acted upon, as there is nothing to fight or flee from, the body twitches in small spasms as if there is some physical pain. By observing someone going through a panic attack, it is hard or impossible to determine what he or she might be feeling, perhaps fear. This intense fear, since it is irrational, can be confused with some other unknown feeling. The fear intensifies and grows to a maximum in about ten minutes and might then last up to an hour. It is very disturbing to witness, as nothing that one can say or do alleviates the condition. In extreme cases, the fear can escalate and give one the sensation that death is imminent.

I wondered, sometimes, if maybe some of the concepts that I had discussed with him, particularly the nothingness, could be something that could cause a young immature mind to warp and produce these terrifying effects; could he be seeing the nothingness? I also wondered about the possibility of physics and math becoming associated by accident with the panic attack, because this activity had coincided with the onset of the attack. I also wondered if perhaps, the mental effort of heavy analytical thinking could be related to *opening a back door* in the mind that would allow the

panic attack to explode unchecked. For the first time in my life I had encountered something that I had *absolutely no idea* of how to advise my son. I was completely impotent in the face of this terrifying experience. I had never even witnessed something of this nature, much less so close to my heart.

However, as I looked back on my own fascination with science, and physics in particular, I truly could not blame or find a way that, battling intellectually with a concept, even such a bizarre concept as the nothingness, could disturb the mind in such a way. It had to be something else. But what?

~

# Neurons

*Ultimately, it all starts with neurons, the main component of the brain and the nervous system. In the last twenty years, there have been major breakthroughs in understanding how neurons communicate with each other. We still don't know exactly how neurons can represent or remember things like my son Mitch, much less my son Mitch skateboarding in Carmel Valley with his red jacket. But the foundation is laid.*

*Neurons come in several types, with different receptors. In lay terms, neurons essentially have branching tails that can send an electrical impulse from the main body down the tail (axon). When the electrical impulse reaches the end of the axon, various chemicals (neurotransmitters) are released into the extracellular space, which is filled with a liquid with many chemicals in solution.*

*Neurons also have many small branches (compared to the axon) called dendrites. There are numerous and different kinds of receptors on the dendrites. It is to these receptors that the neurotransmitters attach themselves. Think of the neurotransmitter as a key, and the receptor as a lock. Only when the match is right do they attach. When they do so they open a gate and allows ions (electrically charged chemicals) to enter the neuron. When enough ions are present, an electric impulse is sent down the axon.*

*The space between the dendrites and the axon is called the synapse. The four most important ions are sodium, potassium, calcium and chloride. The first three are positive and chloride is negative in charge. In this way, neurons send messages to one another. Some neurotransmitters are inhibitory in nature, others are excitatory, and others can be both, depending on the receptor they bind to.*

*Each neuron can be receiving signals from many different neurons, some adding, and some subtracting. A small neuron may have as little as five hundred and as many as twenty thousand dendrites. The result is that messages sent from one neuron can affect many neurons. At the same time each neuron can receive electrical impulses from many other neurons.*

*To complicate things more, there are other chemicals, hormones and neuropeptides which influence how the neurotransmitters work. These chemicals can change ever so slightly the way the brain operates.*

*What is evident is that neurons can fire at different rates and, to some extent, in different styles. At any one moment a neuron can send a limited amount of information, yet the potential information coming into it is very large. We cannot look at a single neuron in isolation; we have to consider the combined effects of many. A neuron simply tells others how excited it is, and there is some information in the pattern of firing as well as the average rate of firing. These signals do not inform where the sender neuron is. In the sense that neurons don't know which neurons*

*stimulated them, it means that there is not one neuron that symbolizes Mitch; many neurons throughout the brain acting together are a representation of him.*

*Neuromodulation is the action of many neurons working together and does not occur only at the cellular level, it occurs at every level of brain functioning. Even at the level of the whole brain. Think of alcohol as an example of a substance that can affect one or more neurotransmitters or receptors, and in turn affects human behavior, as big an order of organization as we can get.*

*We now know that certain synaptic connections are strengthened with use. When that happens, neurons link to each other and form a circuit of synaptic connections. A system is a complex circuit that performs a specific function, like seeing or remembering. The brain uses clusters of neurons to perform very specialized tasks. Some, such as the visual system, extend about ten centimeters, and within such system there are many maps, some as small as one centimeter square. A map is a cluster of neurons, generally adjacent to each other, that work together when presented with a particular type of stimulus. Within each map there can be many circuits, each contained in about one cubic millimeter. The neurons can stretch over various distances, though many are contained within one tenth of a cubic millimeter.*

*Synaptic interactions between two types of neurons are particularly important in understanding the functioning of the brain. Projection neurons have relatively long axons that extend out of the area where their cell bodies are located. Their main job is to reach out to other circuits. Their main function is excitatory. Projection neurons are responsible for sending echo and handshake signals. The echo signals go to the center of the brain (primarily the thalamus) to help coordinate the relay of incoming signals (stimulus) from the body and senses. The handshake signals go from one area in the brain cortex (the outside) to another cortical area. An echo signal, as the name implies, is a ghostly representation, an echo of the past, of some event or stimulus. The echoes help serve as traffic directors so incoming signals can be relayed quicker to the appropriate areas.*

*A handshake signal, as the name implies, is a signal that is sent out looking for friendly signals, signals that might have similar characteristics, and when found, a connection is established—a handshake takes place. Handshakes alert, or turn on, related bundles of neurons that can have more information that can be used to interpret a stimulus. The handshakes are an automatic process that activates the relevant areas in case they might be needed to help figure out what is going on.*

*Both handshakes and echoes can carry tags. Tags carry the information to relay a signal to other certain areas.*

*The second type of neuron is called the interneuron. As the name implies, these neurons connect their short axons to nearby neurons, often projection neurons. Their action is mainly inhibitory. These neurons play an important role in counter balancing the excitatory activity of projection cells. If there were only excitatory impulses, all neurons would slowly be excited more and more; the excitatory activity would escalate like a runaway freight train down a hill, eventually exhausting and even damaging the neurons*

*Projection cells tend to be idle in the absence of impulses from other projection cells. They do, however, maintain a minimum background firing that I called the echo and handshake signals.*

*Interneurons are often tonically active, which means they are firing all the time. This means that the projection neurons have to overcome a degree of initial inhibition in order to fire. Rapidly changing states of excitation and inhibition direct the flow of traffic through the brain. It doesn't take much imagination to see that a minor change in this balance could lead to a breakdown in the flow of impulses and cause havoc.<sup>2</sup>*

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The last entry in a notebook Mitchell was using to make notes to help him solve problems in his computerized drafting job in July of 2002, reads as follows:

*Did you ever dream of a place that made life seem wonderful?  
A place made of queens and princes and where trees swayed  
And nobody cried or suffered.  
Did you ever feel the cold wind blow and know  
That it was time to go away for a while  
If life can twist your mind into a knot  
Then maybe the wind can set you free—  
Free from all the things that keep you locked inside.*

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<sup>2</sup> For a more detailed description of how the brain works see *The Master Illusionist, A Neurological Theory Of Psychology* by Federico Sanchez.

## Mitch's First Panic Attack

Even though I want people to remember him by how he lived and not how he died, I need to speak of my son Mitch's mental illness. This sickness did kill him. Ignorance also. I am convinced that it didn't have to be this way. Knowledge might have made the difference.

Late one night in November of 1997, Mitch's senior year in high school, Mitch came running into our bedroom. He was hyperventilating. When we asked what was wrong, he could only say, "I don't know; it is just an awful feeling that doesn't go away." His eyes were darting quickly from side to side, his body twitched, with occasional small spasms, he moved his head from side to side, as if he were looking for a way to rid it of what was happening inside it. He exhaled noisily. We couldn't get him to relax and had no idea what to do. He looked desperate. Nothing seemed to improve his condition. After we rubbed his back and talked to him for a couple of hours, he finally fell asleep, exhausted.

The next day, as we discussed the night's events with him, he told us that he felt that all this was caused by stress because of the college level courses he was taking. He was taking AP Calculus, AP Physics and AP Spanish, as he was hoping to become an engineer and perhaps go to MIT. Coincidental with his first episode (we didn't know it was a panic attack), he had been doing a lot of math and physics, and in some way, he later related them to his panic attacks. He later intuited that the mental effort to do analytical work was in some way connected to this awful, inexplicable experience. We talked to the Dean at his school. He completely agreed that the workload was phenomenal, and after checking his records, ascertained that Mitch didn't even need the Math and Physics to graduate; he had already completed all those requirements. So Mitch dropped the college level Math and Physics to relieve the burden he was under.

However, even after we greatly diminished his course load, Mitch was not his usual self. It was hard to express what it was, to put a finger on it. What is it that makes a person be who he is? He looked slightly distressed, he seemed a little distracted, agitated, he couldn't sit still, and he also was reluctant to talk about the problem. Perhaps, he didn't know how to talk about the problem; I had the impression that talking about the *problem* could cause the *problem* to surface or get worse. Something was definitely not right, but it was hard to say what.

At this time, he started playing the piano quite a bit more than before. I felt this was because he had more time on his hands, literally. A couple of weeks later he

broke up with his girl friend Meredith, because, he said, “She was driving me crazy.” They had dated for more than a year, and to me, looking from the outside, this couldn’t be the reason. She was a beautiful, charming, sweet girl. This seemed another manifestation that he was not improving. We decided it was time to get some professional help.

We took Mitch to see a psychiatrist. He didn’t even seem interested in the episode, which had been the worst of it all. He just asked a few questions. Mitch answered that he was preoccupied with how the Universe works; he would wonder about the formation of the sun and the planets, the origin of the Universe, life, evolution, genes, the behavior of animals, ultimately, himself; he expressed that he couldn’t stop looking for explanations. He added that when he played the piano, he felt good and was distracted from these preoccupations. The psychiatrist diagnosed him as suffering from Obsessive Compulsive Disorder. He prescribed Luvox (an inhibitor of serotonin uptake, used as an antidepressant and antiobsessional).

After reading about Obsessive Compulsive Disorder, I completely disagreed with the diagnosis. I could not relate this diagnosis with what I had witnessed (a panic attack). I didn’t see any obsession, much less a compulsion. Looking for explanations when things are not right, from my common sense of view, was usual and could not be used as a diagnosis; and feeling good when playing music is perfectly normal, how could it be seen as a compulsion? When I expressed my views to the psychiatrist, he argued that the obsession was thinking constantly about physical explanations of the Universe; the compulsion, to play the piano to feel better. Even though I disagreed with the doctor, at first we wanted to believe that in some way he might be right. After all, he was a respected, experienced psychiatrist; he must know what he is doing.

Pat, got Mitch his medication and he was so happy to think a pill was going to make him well. Unfortunately, after Mitch started taking the medication, I could see that it was stupefying him. He was having a hard time falling asleep and waking up to go to school. He was lethargic. His mother and I worried that he might not be able to finish high school. When my wife expressed our concerns to the doctor, he doubled the dose, telling us that the exact dosage varies from individual to individual, and that it sometimes is a matter of trial and error to find the proper dosage. Mitch’s stupor worsened, and he subjectively confirmed this. I could clearly see he was going through an emotional hell. I believe this is a classic case where the doctor thinks he can cure a mental disorder with nothing more than medication, and it is just a question of finding the right dose of the correct medication by trial and error. Of course every visit and every trial that doesn’t work has to be paid for, and the patient suffers through it all.

As I read more on the subject of mental disorders, one thing became clear—mental illness, in a great number of cases, results in suicide. And seeing my son’s suffering at close hand worried me. I discussed suicide with Mitch. He emphatically

denied that he had any suicidal thoughts or even slight tendencies related to anything to ending his own life. I made him promise that if he ever had any suicidal thoughts, even though they were just innocent thoughts with no intention of acting on them, that he would tell me, or call me immediately if he wasn't with me. He solemnly promised me this, probably to calm my worries, because he insisted this was not the case. After a month, Mitch was not improving in any noticeable way. He wanted to discontinue the Luvox, and after consulting with the doctor, he slowly went off the drug.

We took him to see another doctor. He diagnosed a mild depression, and suggested that we choose from three different medicines. Imagine that, I thought—the doctor wanted *us* to choose the medication so that he wouldn't be held responsible if whatever *we* chose didn't work. Again, I was seeing a trial and error procedure. At the time, I felt that this was such bullshit. As it turns out, this is pretty much the state of the art. We, however, decided to seek another opinion.

A friend of ours who had suffered Severe Depression suggested that we go see a doctor who had helped him get off medications. Mitch started feeling much better after he stopped taking Luvox and he drove to see this doctor alone. When Mitch got home, I asked him how it had gone; he told me that she was going to call me.

A few minutes later she did. With no preambles, she pronounced, "Your son is Schizophrenic and there is nothing to do." I felt like a knife went down my throat into my heart; I don't remember what else she was saying, except that it was related to, "You have to get used to this predicament. There is nothing to do for your son but I can help you."

I thanked her, politely declined her help, and hung up. I vaguely remembered that Schizophrenia had something to do with not being in touch with reality. As far as I was concerned, there was nothing to indicate that my son was not in contact with the real world, so I couldn't accept this diagnosis either.

Slowly Mitch seemed, over the next few weeks, to return to his normal self. I watched him closely as he finished his senior year in high school. He seemed fine. He also insisted that he was. At one point he felt bad again, but nothing like the beginning, and he insisted that his braces were the cause of his problems. So his mother took him to the orthodontist and had his braces removed.

He was fine for a few weeks; then he started feeling bad again. It wasn't anything like that first night. It was like an underlying discomfort under the surface, a feeling of unwellness manifested as fidgety behavior. This time he complained about his complexion. He told me that he didn't like to see himself in the mirror. He blamed it on his pimples, so we got him some creams. He reported improving quickly. Over all, again, he seemed fine.

The psychiatrists had not been much help. Pat's father had been diagnosed as depressed at one point, but he also had a history of alcoholism that made the situation blurry. In his case, the doctors didn't help much either. We were ignorant of depression or panic attacks and what could be done, if anything, about these

mental disorders. My sister, Minnie suffered from anxiety attacks, and what she had relayed to me, was that her psychologists had proved ineffectual in helping her. Yet, Mitch seemed to be improving. Eventually, he was his usual self. Whatever it had been, it seemed to be part of the past. We didn't get much help from the medical community and it fed us a sense of hopelessness, as far as what they could do.

Mitch hadn't been accepted at M.I.T. (his first choice when he had been so enthusiastic about engineering the previous summer) because he had dropped his college level courses; but he had been accepted at the University of California at Santa Barbara as an engineer. I was proud of him. I had been worried that he couldn't even finish high school with all the tribulations he had faced, but Mitch had prevailed in spite of his emotional problems. I was worried about his going away to college. When I expressed my concerns, he continued to insist that he was fine.

The summer went by and we couldn't detect anything wrong with him. He went to Oregon and Costa Rica, and neither his friends nor parents of his friends had anything unusual to report. Perhaps, my wife and I thought, it has passed just as suddenly as it came. Perhaps, whatever it was, is gone. But after having witnessed his turmoil, we remained vigilant.

In September of 1998, Mitch started his freshman year at UCSB. I drove him to Santa Barbara and we stayed in close contact. When we asked, "How are you doing?" His response was an annoyed, "I am doing fine, Mom." And so it seemed. However, he informed us that he was changing his major from engineering to English. He no longer wanted to be an engineer; he wanted to be a writer. I knew he liked math and physics, but it was his choice. How could I know what he really liked most? My wife reminded me that not everyone in the world has to be an engineer. Because of what he had gone through, I probably didn't challenge him about his decision to abandon engineering. Paradoxically, if I had, I might have realized how much closer to the surface his panic attacks were.

On the other hand, he was different from me in many ways: he did like to write, and he composed and played music, things that in general I was either only going to do if forced, or was completely unable to do, respectively. I had a vague feeling that he had some residual fear about doing math or physics, because in his mind this could bring on an "episode". Yet, under more scrutiny than I ever gave Freddy when he went to Berkeley, Mitch seemed to be adjusting normally to his first quarter at the University. His grades were not outstanding, but with many freshmen, this is quite normal.

That fall a friend of Mitch's girl friend committed suicide. Among his papers I found this writing relating to that suicide:

*I walked over to the near-by hot springs and laid in one. Damn was it hot. It felt good on my eyes, though. Boy was it hard to stop thinking about that poor kid. His name was Robby. I knew his brother from school. I kept thinking about Robby's parents sticking a bunch of flowers on his grave. Poor Robby, just lying there in the dreadful cemetery, surrounded by dead people and tombs*

*and all. Boy, did I get depressed just sitting in that tepid water. I pictured going to the cemetery when my grandfather died. I went twice and both times it rained. It was awful. It rained on his lousy tombstone, and it rained on the grass on his stomach. It rained all over the place. All the visitors that were visiting the cemetery started running like hell over to their cars. That's what nearly drove me crazy. All the visitors could get in their cars and turn on their radios and heaters and go someplace dry for dinner—everyone except my grandfather and Robby. I know it's only their bodies in the cemetery and all, and that their souls were up in heaven but it still made me bitter as hell.*

In February of 1999, we went to Lake Tahoe to ski with some friends from Mexico. We invited Mitch to join us. His girl friend Katie was there with her parents. While we were there, he started to feel like he had before, back in November of 1997. He talked to Mario, a dear friend of mine going back to my high school days. Mitch expressed many fears he had and Mario interpreted them as the natural fears of a young man.

The next day, while we were in the parking lot getting ready to go up the slopes, Mitch started to hyperventilate, sobbing, saying, "I don't know what is happening to me." He was walking in a tight circle, raising and lowering his arms, breathing deeply, trying unsuccessfully to bring his emotions under control. It was scary. His eyes darted around, unfocused as he moved his head in a circle. I felt a terrible impotence and frustration—there was nothing I could do to help my son. I couldn't explain or advise him in any way about his predicament.

Mitch went for a walk with his mother and slowly the feeling passed, and a couple of hours later they joined us on the slopes. He seemed to be, almost, his usual self.

I had a few long conversations with him, and he seemed to be angry that this had happened to him again. I tried to calm him down and ease his frustration. At one point, he mentioned that perhaps, if he became more religious, he could find a way out of this. I said that if he believed that, then he should pursue it. If faith could help him, he should explore this. I explained that just because I was agnostic and didn't follow any organized religion, this didn't mean that he had to be like me. He should pursue what he felt was best for him. A couple of days later, he returned to Santa Barbara amid, "Mom, I am fine, really. Don't worry." We kept in touch with him, at first daily, then weekly.

I didn't understand at the time, like I do now, that this need to believe, or rely on faith was a symptom of a desperate search for a new set of laws to explain the world. His old world, in some way, had snapped; it had to be rebuilt, preferably, with a new set of rules. It is part of the symptom of the brain trying to adapt to its new condition. I didn't understand what was happening to Mitch, and perhaps he knew this, and began searching for his own answers, in the process, moving imperceptively away from me.

Shortly after, I wrote him about his experience, hoping to maintain communication channels open as I discussed new ideas with him; this time, on the use of faith. Searching through Mitch's papers I found the letter I had sent him on 2/25/99. It was in a Memo format:

*From Your Dad, Re: The Biggie*

*Dearest Mitch:*

*Let's start with the basics: our sensations, our feelings. Our senses give us information and symbolically represent the outside world, so we can get around it for basic needs. It allows us to survive, to grow, reproduce and die. Our feelings are pre-wired sensations that help us for the same goals: we pursue the ones that "feel" good; we try to avoid the ones that "feel" bad. In general bad feelings are for survival: i.e., under the right circumstances they help: anger, fear, revenge, hate. Under the wrong circumstances they can do us in. In this arsenal we have FAITH. Faith can help in dealing with the incomprehensible, with the unknown, and it has been conclusively proven that faith can heal. If you need faith and to talk to God to prevail, do it. Above all, you have to have faith that you are stronger than any handicap, any obstacle and any bad luck. I do. I know it. I have faith. You have to have faith too. You will prevail against all odds.*

*As a gambler you know you must increase your odds at every opportunity. God or faith can only help so much. You need to work hard to increase your odds. Patience will eventually reward you with the right hand to make your bets. You have friends and family to help. You have your intelligence, your common sense, and these are your assets. This will guarantee increasing the odds of winning consistently. The longer the time, the more assets are going to be brought to bear on increasing the odds. The longer you fight, the longer your opponent, or obstacle will be weakened. You must, if you will, bring faith to the forefront. We are dealing with a problem that nobody knows the answer. Faith that an answer will be found is a must. It is only a question of time. Faith is a weapon. Have faith that "IT" will go away. I call "IT", because NO ONE has given it a name yet; it's an "IT". I repeat: I have FAITH that "IT" will go away. Now let's work at increasing the odds against the unknown, BECAUSE THE UNKNOWN WILL BECOME KNOWN, even if we need to invoke the name of God. Then the odds will become just a game. A game we play every day, if/and/or when we feel like it. The odds will be overcome in good time, hopefully sooner than later. Just remember at all time, God and I will always be with you; plus your mother . . . and friends . . . and family . . . and most important, you! You must understand that this might be hard, or easy, but always have faith that it will be done! Once the faith is on, we must worry about understanding what the odds are and in so doing, increase the odds in your favor. To pray might help, and believe me, I am praying. We must have faith that you will prevail. I have faith that we will increase the odds, and I know you will prevail.*

Paradoxically, me, a man of no religious faith, did have faith that answers could be found if enough effort was expended. I also had a lot of faith in Mitch. I certainly had faith he would overcome whatever he faced. What I didn't understand was how

big Mitch's problem could become and how much faith I ultimately needed to have to stay the course to find the answers he required.

After Mitch's death, one of the exercises that I found useful, as I tried to make sense of it all, was to attempt to understand how psychiatrists have categorized mental disorders, and glean some insight into how the brain really works. I felt it was important to understand the prevalent approach to mental illness by the psychiatric profession. The psychiatrists, after all, have been observing all this for centuries, and there should be some rhyme and reason to their madness. I had to have faith that I could find answers.

My personal experience with psychiatrists, for the most part, was not a good one. Different mental disorders are difficult to diagnose under the best conditions, and in the worst cases, can be confused by incompetent clinicians and doctors. Patients don't understand what is going on inside them, and it is very important to explain in detail, if possible, what is happening. Family and friends of the afflicted person need to understand the true nature of these diseases.

Thanks to Freud we learned a whole new language to discuss internal brain processes. Unfortunately his theoretical framework turned out to be wrong, and led us in the wrong direction for decades. In some psychiatric circles his ideas are still held as truth. I recall discussing Freud's theories with Tito back in the early seventies, when I was twenty. I remember when I repeated Tito's words to Mitch, "Freud is wrong. He states that every little boy wants to make love to his mother. That is pure nonsense. Freud bases his theory on the Oedipus and the Electra complex. I know perfectly well when I want to make love to a woman; there is no maybe, there is no perhaps. I know it." Mitch laughed at this notion. Tito continued, "And I know I never wanted to make love to my mother. There were many sexually repressed people in his time. Maybe Freud wanted to make love to his mother, and had to work some issues through, but his theories are wrong."

I discussed superficially with Mitch some of Freud's ideas, and in general recommended to not take much of the Id, the Ego and the Superego seriously. Yet, I advised him to become familiar with Freud's terminology, because much of it is still used and misused: particularly the terms conscious and unconscious.

In the years since Freud, many things have changed, but many of his terms, and some ideas, are still used. Today, if nothing else, the psychiatric community can, at the very minimum, offer us a vocabulary. Engineers, lawyers, doctors have their own specialized vocabularies to communicate with each other. Every field has their own terminology and definitions. Learning the vocabulary of psychiatrists to express what is going on internally is extremely useful. Just to use this vocabulary to communicate with others what is happening internally is very empowering, and can be the beginning of improving a seemingly hopeless situation.

To have a theoretical framework with which to attempt to explain different mental processes is helpful to put whatever is happening into a particular perspective. Yet,

to have the wrong theory can lead down dangerous paths. Mistakes and wasted time are luxuries that cannot be afforded when facing certain mental illnesses.

I will present, as dry as it is, the concepts and definitions accepted by psychiatrists. They are the language that we use today. Along side it, I will develop my own theory about how the brain works and malfunctions to put all this, and suicide in particular, into a new theoretical framework. I will develop my own vocabulary as needed, and hope that this will help us understand better by communicating more clearly some complicated concepts.

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## Delirium, Dementia & Amnesia

*Published by The American Psychiatric Association, The Diagnostic and Statistical Manual of Mental Disorders is now in its fourth edition. It is known as DSM-IV-TR for short. I will simply call it the Manual. The Manual is occasionally revised to incorporate advances in knowledge and reflect changes in attitudes. It classifies mental disorders for clinical, educational and research settings. Its main purpose is to provide clear descriptions of diagnostic categories so that clinicians and researchers can communicate in a standard language.*

*The Manual is organized into sixteen major diagnostic classes. My focus will be primarily with the second, fifth, sixth and seventh classes, relating to deliriums, amnesia and dementia, schizophrenia and psychotics, depression and manic depression, and anxiety and panic attacks, respectively. I do this, because approximately ninety percent of people who commit suicide are suffering from these mental disorders.*

*I will discuss the criteria for some diagnosis following the classes that the American Psychiatric Association has established. Understanding delirium, amnesia and dementia makes it easier to understand schizophrenia, depression and manic depression. Anxiety and panic attacks are often present simultaneously with the schizophrenia or depression, so I include them in our discussions to better understand suicide. The American Psychiatric Association doesn't consider suicide as a class by itself, a separate disorder, but as part of other mental disorders.*

*The manual defines criteria for each diagnosis. When these criteria are met, specifiers can be added to the diagnosis. Specifiers used are: Mild, Moderate, Severe, In Partial Remission, In Full Remission and Prior History.*

*There can be more than one diagnosis for a mental disorder. The principal diagnosis refers to a condition established to be chiefly responsible for admission to an institution. Sometimes it is difficult (and somewhat arbitrary) to determine which is the principal diagnosis when there are dual or multiple diagnoses.*

*Each diagnostic class has at least one, Not Otherwise Specified (NOS) category as well as a category when a medical (as opposed to mental) condition is suspected of causing the mental disorder. The latter will be determined by the history, physical examination or laboratory findings relating to a medical problem or a chemical substance. In most cases, the mental disturbance has to be severe enough to disrupt normal social or occupational functioning.*

*The manual uses terms like "fluctuate," "impairment," "failure," "persist a few months," "superimposed," all of which can be subjectively interpreted. So, diagnosing any mental disorder can be imprecise and problematic. The manual only describes "abnormal" conditions, it does not have a theoretical framework to explain why these "abnormalities" occur.*

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*The essential feature of a delirium is a disturbance of consciousness manifested as reduced clarity of awareness. The ability to focus, sustain or shift attention is impaired. This change in cognition may include memory impairment, disorientation, language disturbance or development of a perceptual disturbance. The disturbance can develop over a short time and can fluctuate during the day.*

*Delirium is often associated with a disturbance of the sleep-wake cycle, either excessive sleepiness in the day or wakefulness throughout the night. Many individuals might exhibit emotional disturbances such as anxiety, fear, depression, irritability, anger, euphoria and apathy.*

*Dementia is characterized by the absence of one or more of the normal cognitive functions (including memory impairment) that are due to direct physiological effects of a general medical condition, to the persisting effect of a substance, or combinations of the above. There are many different types: Dementia of the Alzheimer's Type, Dementia Due to Head Trauma, Dementia Due to Parkinson's or Huntington's or Picks, Substance Induced Dementia, NOS, etc.*

*The essential feature of dementia is the development of multiple cognitive deficits that include memory impairment and at least one of the following disturbances: aphasia (impairment of speech), apraxia (impaired ability to execute motor activities), agnosia (failure to identify objects) or a disturbance in executive functioning.*

*Yet, memory impairment occurs in both delirium and dementia, sometimes making the distinction difficult. Typically, symptoms in delirium fluctuate and symptoms in dementia are relatively stable.*

*Amnesic disorders are characterized by a disturbance in memory. This includes impaired ability to learn new information, or inability to recall previously learned information or past events. The ability to learn and recall new information is always affected in an amnesic disorder. Remembering previously learned or past events depend on the location and severity of the brain damage. Depending on the area of the brain affected, deficits might be predominantly verbal or visual. In some cases an individual might recall the distant past very clearly and recent events not at all.*

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Among Mitch's papers, next to the memo I sent, I found another letter of mine dated March 1999:

*Dear Mitch,*

*I suffered amnesia as a senior at the School of Engineering at Tufts University in 1975. In the spring of that year, Ben, one of my roommates, had joined the rugby team. He invited me to join, and so I did. I became the starting fullback. On a Sunday morning in April, we were having our first game. Actually two games. Team A would play first followed by a second game played by Team B.*

*Ben and I left our house in my car about 10 a.m. We were short a few players to be able to field the two teams, so Ben and I volunteered to play the two games. Rugby is a contact sport with no padding. Unlike football, you can only be touched, or hit when in possession of the ball. Close to the end of the second game, deep in our territory, I got the ball, proceeded to run forward as far as I could and then, before anybody could make contact with me kick the ball forward as far as possible into the opposing side. That was the plan. After kicking the ball, much as a 4th down punt in football, right leg extended upward, left leg off the ground, arms to the side, some guy dove into me head on while I was up in the air. He smashed his elbow into my cheekbone, causing me to do a reverse flip, and I hit the ground with the back of my head.*

*A brawl started and the game was suspended. I got up and Ben asked me if I was all right. I responded that indeed I was. However, Ben could tell that I was somewhat dazed, and insisted he drive us home. Home was only four blocks away. I felt there was no problem in driving myself, but Ben insisted. I gave him the keys, and got in the passenger side. There was an old note of a girl friend I had stopped dating five months before. The note said something like, "See you at 4, Love Kathy". "Am I supposed to meet Kathy?" I asked Ben. He raised an eyebrow. "No, that's an old note. You haven't seen her for months." "Hum. Well, let's go home," I responded. He looked at me, started the car and we drove home.*

*I went upstairs to take a shower and change my clothes. As I came out of the bathroom I ran into Tony, another roommate, in the hall. I asked him why my hair was all wet. "Because you just took a shower," he answered. I nodded and walked into my room to get dressed. While I was dressing Tony went down and talked to Ben about this incident. Ben went on to explain what had just happened. I came down and with my hair still wet; I asked them again why my hair was wet. They said that I had just played a game of rugby, and then took a shower. I responded that I had never played rugby. Logically I insisted that, "How could I take a shower after something I had never done?" They explained that I had been hit in the head and that obviously there was something amiss. I made a joke, "What is the purpose of playing rugby if you can't remember it?" I laughed. I thought that was funny. About a minute later I was asking them once again why my hair was wet. They proceeded to explain again what had happened. I proceeded to repeat my joke, as if this was the first time, "What is the purpose of playing rugby if you can't remember?" And laughed again. When I proceeded to ask for a third time why my hair was wet, they knew something was terribly wrong.*

*Dinner preparations were interrupted and I was taken to the University's Infirmary located in the middle of campus. There, the doctors asked me a few questions and mostly with the help of my roommates, were informed of the noon's events. They also became aware that even though I knew the year (1975), when asked about my schedule I would answer them with courses that I had taken in my sophomore year. In short, I recalled events of two years ago and before, and events of the last 30 seconds, but not longer. I had a two-year loss of memory, and I was incapable of creating "new" memories. The doctors were worried that I might have a concussion. They put me in a room upstairs, instructed the nurse to feed me only liquids, no solids. I could become unconscious and vomit. I was informed, many times, that this is common with head injuries. The nurse on shift when I was admitted was informed of what happened. Some teammates and friends came to visit and check in on me.*

*All of a sudden I was alone. I asked the nurse where the bathroom was. She told me it was down the hallway, the last door on the left. I walked down the hallway, and by the time I got there I forgot if she had said left or right. I turned right, walked into a room where there was another patient. I started to ask him where the bathroom was, but before I could finish he started to tell me that it was the door across the hallway. From his expression and amusement, I realized that I must have done this before, but could not remember doing so. I asked him if I had done so previously, and he confirmed this. Even though I could not remember meeting him before, his face and voice were “known” to me. I apologized, again, and he laughed. I went to the bathroom and returned to my room. I got in bed, and next to the lamp I saw a note in Ben’s handwriting. The note said the following:*

This morning you played Rugby.

You got hit on the head.

You did not pass out.

You’ve only been here since this afternoon.

Kathy has nothing to do with this.

*I was becoming acutely aware of my memory impairments. I could not retain things for more than thirty seconds or so, and then they would disappear as if they had never happened. I don’t know how many times I had done this before, but I realized that this note must be the answers to questions I kept repeating over and over and forgetting the answers a few moments later. I reasoned with myself: O.K. You played rugby. You got hit on the head. Then how come I am not sweaty? How come I have street clothes with me (they were on the chair)? No cleats, no sports uniform? I was incorrectly assuming that I would have been brought directly to the Infirmary from the playing field. O.K. I did not pass out, and I only have been here a few hours. “Why,” I wondered, “Would I be asking if Kathy had anything to do with this?” Blank . . . Except that there was a strong emotional desire to see her. I sat there pondering this, over and over.*

*Always, when I play soccer (or rugby), I refrain from eating several hours before the game. Consequently, I hadn’t eaten all day. The first game that morning started at eleven a.m., so I hadn’t had any breakfast. And after I got home, but before I had dinner, I was brought to the Infirmary. I was famished. I called out to the nurse, this was a different shift, and she couldn’t answer any of my questions relating to the note or otherwise, except that she could confirm that I had been there only a few hours. I told her I was hungry. I needed food—anything. She came back with a small serving of Jell-O. She explained, not too patiently (she probably had explained this several times before), that it was the doctor’s orders. Liquids only.*

*Left alone, I got dressed, contemplating escaping to a nearby diner to get something to eat. It seemed security was kind of lax. I mentally reviewed how to get there and back. I could tip toe down the hallway, down the stairs, a quick dash across the quad, make a right, two blocks down, cross the street, eat and return quickly retracing my route. Sneak in, get undressed, jump in bed, and no one would even know! Aware of my memory problem, I contemplated the possibility that perhaps on the way there, I would forget where I was going, or what I was doing. After all I had forgotten where the bathroom was as I walked down the hallway. This was around ten p.m. By now I could remember things that had happened a few minutes before, and with some effort I could recall very vaguely some*

*things of the previous hour. I was also aware that I was a senior and that I could not remember any courses I took in my junior or senior year. Disturbing, to say the least.*

*If I couldn't recover my memory I would have to do the last two college years over. Feeling that this was the worst possible case scenario, I tried to see if I could remember other things in those two years. I could remember Kathy; I met her in my junior year. I could remember the faces and names of my rugby teammates that came to see me, even if I met them more recently. I certainly could remember all my past and childhood, my mother and sisters. I could remember places that I had been in those two years, like particular classrooms (of which I could not remember the course I was taking, or who the teacher was, even though I'm sure I could recognize them and know their names if I saw them). I could read and write. I could speak. I could remember how to get to places I had been recently. Or how to get home, and realized that I had lived there almost two years, the two years that I couldn't remember many things about.*

*But there . . . I could remember some (type of) things. I could "feel" things coming back. I felt that I could rebuild my past, my life. My logic was intact. I could learn or relearn if I could remember from the present on, which I was increasingly, if painfully slowly, beginning to do better and for longer periods. My introspection was cut short by the sound of my car driving up to the Infirmary. Someone who knew me had my car! They could help me answer questions, put the pieces back together. They could get me food. By then I realized that the nurse wasn't going to help me on either count. I needed to help myself.*

*Ben walked into the doctors' office where amid a pile of open medical texts the doctors conferred, yet had no idea about what was my problem. He was told that much, but that at present I was resting quietly, if not peacefully. I walked out of my room, and the nurse tried to get me back in bed. I yelled down the stairs. "Ben, Ben, help. Ben I'm up here, I need food!" The embarrassed doctors let Ben come up to see me.*

*Ben explained that I couldn't get solid food, that it was for my own good, to be patient. He also explained how we went home first, and then to the infirmary. He told me about Kathy's note in the car. This was very helpful, because now I could retain this information; I was no longer losing it. He left after I calmed down. I don't know if they gave me something to sleep, or if I fell into a very deep sleep on my own accord.*

*That night the Biology Building, Barnum Hall, burned down, burning Jumbo the stuffed elephant, the mascot and symbol of Tufts University. On hearing the Fire Alarms I woke up and asked the nurse if I needed to get out, if the fire was here at the Infirmary. She reassured me that the fire was not here. I looked out the window and I could see the Biology Building on fire. Uncharacteristically of me, I simply returned to bed and continued sleeping.*

*Next morning, Roman, another of my roommates, came by to see me. I had slept soundly and was feeling much better. He sneaked me a cigarette, and we chatted for a few moments. My memory from the present on was working fine. But events of the year before (instead of two years) including the previous day were still inaccessible. He had to run to class, and so he left. I needed food!*

*I dressed and asked the nurse to see the doctor. The doctor asked me how I felt. I was so hungry, I was desperate to get out and get some food. So I lied and told him I was fine. He proceeded to ask me about my schedule. I gave him my schedule of my second semester a year ago (I had taken a*

*graduate course in solid mechanics that semester, how would he know the difference?) and reassured him that all was fine. He proceeded to let me go. I went to the nearby diner and had a great breakfast.*

*I sat around on the sunny grass. I felt tired. Slowly things seemed to be coming back. I remembered my schedule. I went home and got my books, checked my schedule on the wall and proceeded to go to class. I walked in and after a few minutes I realized it was a complete waste of time. The equations on the blackboard had the same meaning as Chinese characters (absolutely none). I got up and excused myself. One of my classmates had heard about my amnesia, and explained briefly to the professor.*

*I decided to take the afternoon off. It was the first time at Tufts that I missed a class. Slowly more and more memories started coming back. By next day, Tuesday, I had remembered everything except the events of Sunday until about 10 p.m. A week later I had remembered everything except the actual game. About a year later I could remember the game. To this day, I do not remember picking up the ball, running forward, kicking it and getting hit in the face and head. I doubt I will ever remember the play, the actual moment that caused the trauma, my amnesia.*

*How is it possible that you cannot remember something that happened a half minute ago? How can one forget a two-year period, but still retain many kinds of memories of that period, like faces, names, people, places, directions. Why two years of lost memories and not ten or five years? Interesting and baffling questions. Perhaps the question should be reversed. How is it possible that we remember anything at all?*

~

I keep going back to my grandfather's words, "Beware of madness in the family." What exactly did he mean? Now that I am older, as old as Tito was when I was born, I wonder if he meant that there was some madness in him. Was he trying to warn me of similarities between us, of madness in myself?

When I was ten years old, I was finally allowed to go to the family Christmas Eve gathering at my grandparents' home. The party was held in the Imperial Patio, as the plaque that my grandfather placed in every room or hall of his renovated nineteenth century house, proudly announced. I was familiar with this room, as every Tuesday my grandmother would receive all family members for lunch. In that context, one corner of the Imperial Patio served as a living room. To one side, there was a wooden podium in front of my grandfather's phonograph, as he called it. By my time the phonograph was a state of the art high-fidelity record player with incredible volume. The sound was separated into bass and treble from the first amplifier and then fed and controlled separately with two amplifiers. It boasted two large speakers that Tito referred to fondly as the Trumpets of Jericho.

From the door on the cobblestone street, you entered the garage named "El Barrio de Alcalá. The bedrooms would be accessed through a hallway to the left, and

straight ahead, crossing “El Barrio de Santa Cruz,” you would enter the Imperial Patio. In essence, the house could be easily divided into two areas: the private quarters, and the public area for parties.

The Imperial Patio was designed for parties. It had a huge fan to extract smoke; a spotlight that thanks to a slowly revolving set of filters, illuminated the dance area in different colors, from a light yellow, to a pink, to a red, to a violet. To the left of the entrance to the patio was a big closet to hang at least one hundred coats. In the corner opposite the sofas and tables that served as a living room, opposite a big open space that served as the dance floor, was a huge quarter-circle bar. The men’s room was outside the Imperial Patio, next to the bar; the women’s room was accessed by going out the opposite end, through the entrance to the Imperial Patio. All around the patio there were inbuilt benches that could easily accommodate forty or fifty people, and with chairs added the number could be doubled.

On this Christmas Eve, finally invited to one of Tito’s parties, I was a witness to the intended use of the Imperial Patio. Tito would dress in long coattails, elegantly looking like an orchestra director. Only he was allowed to step onto the podium in front of his beloved phonograph. Bragging that he was the inventor of the discotheque, he was the disc jockey, choosing and playing the records he wanted as his guests danced to the music that emanated from the Trumpets of Jericho. From the director’s podium he controlled all the lights in the Imperial Patio, as well as his colored spotlight on the dance floor and the extractor fans. From this platform Tito would direct, with baton in hand, the imaginary orchestras that played the music. And this, he proudly claimed, no one had dared to do. This is what made him the best disk jockey in the world. In this way, Tito would direct the best orchestras, bands and groups in the world. All at the immediate disposal of his smallest whim, limited only by the fact that he needed to own a recorded version of their music.

Christmas Eve parties took place under the kaleidoscopic lights, with Tito directing with a luminous baton, from eight till midnight, at which time we would stop dancing for dinner and an exchange of gifts. For several years I thought that this is the way everyone celebrated Christmas.

Over the years I learned from Tito many details of his famous parties. His first party dated back to 1936. He told me that he loved the feeling of directing an imaginary orchestra as he listened to music on his phonograph. One day, finally, he got the nerve to do it in public. For this purpose, he invited a group of his friends, dressed in formal eveningwear, while he dressed in coattails like a director of a symphonic orchestra. He played his records on his phonograph, and with a baton directed the imaginary orchestras and the most famous bands. His guests danced to his music as he frenetically, or slowly, as the music demanded, directed. The party was a success. For the next twenty-three years, he held parties in his house one to three times a month.

He called his parties “The Third Mexican Empire”. As Tito explained, “The First Empire was during the reign of Iturbide (1821-1823), and the Second Empire was during the reign of Maximilian of Austria (1860-1865),” but the Third Empire (1936-1959) outlasted the other two by at least eighteen years.

The guests that contributed to the success of his parties would be given nobility titles. The most beautiful woman of the party would be Queen for the Night. Tito would descend the podium only once during the party—to dance with the Queen of the Night. He insisted that a committee selected the Queen, but I have a suspicion that he decided with what woman he wanted to dance, and at the appropriate moment, honor her by descending from his lofty platform. His guests received titles of princes and queens, dukes and duchesses, archdukes and archduchesses, ambassadors. Guests had designated titles such as The Emperor (one of my grandfather’s dear friends, who was deposed a couple of times), His Serene Highness, The Grey Eminence, The Ambassador of Siam (my godfather had arrived from Thailand and went directly from the airport to the party), The Archduchess of Alloway (my mother was from Alloway, New Jersey), The King of Arms (in charge of order), The King of Harlem (George, perhaps the best dancer of the parties, who was black). I think that about thirteen hundred titles were bestowed on different people over the years, some people having received two or more titles. Tito called himself the Prime Minister, as he insisted that if there was a revolution, the Emperor was the one that lost his head. When he was not fulfilling any political duties on behalf of the Empire, he was the Maestro (Master Director or Master of Ceremonies). My grandmother, who was key to the success of his parties, refused to accept a title, and so Tito gave her the title of The People. After all, power ultimately rests with the people, he would say under his breath.

In the beginning, the parties of The Third Mexican Empire were held in The Sacred Room. Later when the Imperial Patio was remodeled, the parties were moved there. Initially, the parties were held on Saturday night at 10:00 p.m. (to save money as guests would have dined already) until roughly 3:00 a.m. It all depended on how much fun Tito was having directing the phonograph. To insure that the party lasted longer, the dancers were obliged to clap after each song as if they were clapping for a real orchestra and its director. The more the guests clapped, the longer, in all probability, the party would continue. However, as Tito told me, you never gave your guests all, you needed to have them wanting to come back for more. The first parties were called The Great Saturdays, and the guests were mostly friends of my grandparents.

Tito had a huge gong hanging on the wall behind his phonograph. To signal the end of the party, Tito would strike the gong once, turn off the dance lights, and turn on the Patio’s lights and exit quickly through a side door. The last person to leave would close the door to the street.

Occasionally, on Sundays, Tito would go bicycle riding with his three children, my father and his two sisters, and their friends. He, of course, was the admiral of the

Imperial Fleet, as he called the bicycle squadron. As they became teenagers, his children pestered Tito to play some dance music for them on his famous sound system. He obliged, changed into his coattails, and directed the orchestras of the world for the kids. The dress was informal, and no liquor was served. Since the first party started at 5:00 p.m., Tito called these parties *The Crazy Teas*. He told me that these parties were his favorite, as the young crowd really loved to dance, and how they clapped for the director. “Maestro! Maestro,” they gleefully yelled, and the music continued.

As the years passed, Tito’s friends grew older, and had less enthusiasm for dancing into the late hours of the night. As a result the frequency of the *Great Saturdays* diminished. On the other hand, my father and his siblings and friends were clamoring to be a part of the *Great Saturdays*. As a compromise, Tito decided to start grooming the younger people for the *Great Saturdays*. He organized separate parties, and since they were training for *The Third Empire’s Great Saturdays*, he called them the *Imperial School*. The format of the *Imperial School* was exactly the same as that of the *Great Saturdays*, but on average, initially, the age difference between each group was twenty years.

As the *Great Saturdays* continued, Tito had to continuously make up for the attrition of the older folks by inviting increasingly younger people. As a consequence, the average age difference between the members of the *Imperial School* and the *Great Saturdays* progressively lessened. At one point, he decided to fuse both groups into a new one. Since my father, a football player, was fanatical about All American football players, my grandfather decided that the best (for the parties) of each group would be invited to the new party—*The All Imperial*. Finally, twenty-three years later, Tito, as he told me, decided to retire at the height of his popularity. He would do the same as the great matador Rodolfo Gaona. When Gaona retired Tito never again went to a bullfight. In 1959 the last *All Imperial* was held. His dream that my cousin Maria Rosa, the eldest grandchild, would someday attend an event of *The Third Mexican Empire* was thwarted.

Tito told many stories, but one of my favorite ones happened in the late forties. Some friends called my grandfather at the last minute on a Saturday afternoon, asking if it would be all right to bring a couple that was visiting from Atlanta. You needed to have a written invitation to attend to the parties, and obviously there had been no time to do so for the out of town couple. Tito told them that as long as they followed all the rules—dress in formal evening wear, be on time, not later than ten minutes after ten, clap when he directed, and so on—they would be welcome. He would let the *Imperial Guard* know that their invitation was good for an extra two people.

Naturally, the visiting couple from Atlanta was told that these parties were the most elegant in all of Mexico City, and that only the highest echelons of society were invited; that it was a real privilege to be invited. This latter statement was true, even

though the former statements were exaggerations. During a break in the music (and Tito's directing) his friends approached Tito and introduced the couple from Atlanta. After a few pleasantries, the Atlantean said, "We were led to believe that only the highest levels of Mexican Society were invited to these parties."

"That is absolutely correct," Tito answered gamely. "Why do you ask?"

"Because there is a black man here," the Atlantean responded dryly.

"That is impossible. Where?" My grandfather responded alarmed.

"Over there," the Atlantean said smugly, pointing in the direction of George.

"That is not a black man, that is George. Now, if you will please excuse me, I have to return to my duties as director."

Ten years after the end of the Third Mexican Empire, Tito, under pressure from his older grandchildren, held a Funeral for the Empire. We were required to invite one-hundred-and-twenty boys and eighty girls, minimum. The format would be of a Crazy Tea—informal attire, 5:00-8:00 p.m., but drinks would be served—and of course all guests should be instructed that they needed to clap appreciation vigorously for the director after each song. Tito was afraid that his grandchildren's friends would not be able to grasp the concept, and appreciate his directing as it should be, discotheques being a common thing in the world by then. We told him not to worry—our friends would clap.

For us grandchildren, it was just a great Christmas-like party. For our friends, it was an extraordinary event and insight into what The Third Mexican Empire was all about; the great legendary party! At 8:30, when it was past time for the gong, the assisting old members of the Great Saturdays, The Imperial School and the All Imperials, knelt on the floor in front of the podium and clapped. Tito's grandchildren and many of our friends joined in. The funeral went on until shortly after midnight. My aunt told me that this was probably a record—to go more than four hours after the deadline. The clapping simply would not stop. Tito had a great time and he directed and directed.

What is one to make of Tito's parties? Can all this be a sign of madness? I always felt that it was just a slight, amusing eccentricity on Tito's part. He always insisted that we should be true to our selves, that we should not care what others think as long as we don't cause harm. We all have our oddities in one fashion or another, and we should always respect each other.

On a different note, Tito would always have one or two martinis before lunch, then nap slightly after his meal, return to work for a couple of hours, and then more often than not, go out and listen to live music. This of course entailed a few more drinks. He went out all his life, on average, five nights a week. He never had a car; he claimed that the cost of maintaining it, and the time to find a parking space didn't make sense when you lived in Mexico City. He never did mention that with a few drinks, driving might be dangerous. I enjoy a glass (or two) of wine with lunch, and later in the evening a couple of drinks makes for a better day. In this, I see myself

very much as Tito was. Can it be, as a dear friend of mine suggested to me recently, that some of us have a deep propensity for depression, but we have learned, in many ways, since our adolescence, to keep depression at bay using many mechanisms—working, playing, and drinking intensely? Am I eccentric or do I have a propensity for depression that might erupt at any moment? Perhaps neither; perhaps we're just guys that like to party and drink. The question is, where does normal end and pathological begin?

~

# Schizophrenia

*The main problem with the Manual is it does not attempt to explain why a mental disorder happens; it just describes it and defines its symptoms.*

*Included in the Fifth class we have Schizophrenia, Schizophreniform Disorder, Schizoaffective disorder, Delusional Disorder, Brief Psychotic Disorder, Shared Psychotic Disorder, Psychotic Disorder Due to a General Medical Condition, Substance-Induced Psychotic Disorder and Psychotic Disorder NOS (Not Otherwise Specified).*

*The narrowest definition of psychotic is restricted to delusions or prominent hallucinations, with the hallucinations occurring without the individual's understanding of their pathological nature. A less restrictive definition includes prominent hallucinations that the individual knows are hallucinatory experiences.*

*Delusions are erroneous beliefs and they may include a variety of themes; persecutory (can include being tormented, tricked, spied on or ridiculed), referential, somatic, religious, or grandiose. Delusions that express a loss of control over mind or body are considered bizarre; these include a person's belief that their thoughts have been taken away by some outside force or aliens—in the past it might have been devils—have been introduced into their minds, or that their body or actions are controlled by some outside force*

*The diagnosis of Schizophrenia involves a constellation of signs and symptoms associated with impaired occupational or social functioning such as cognitive and emotional dysfunctions that include perception, inferential thinking, language and communication, behavioral monitoring, affect, fluency and productivity of thought and speech, hedonic capacity, volition and drive, and attention.*

*Schizophrenia is a disorder that lasts at least 6 months and includes at least one month of active-phase symptoms of at least two or more of the following: delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behavior, and negative symptoms such as restrictions in the range and intensity of emotional expression (affective flattening), in the fluency and productivity of thought (alogia) and in the initiation of goal directed behavior (avolition).*

*An individual with Schizophrenia may display other features: inappropriate affect (smiling, laughing, silly facial expressions in the absence of an appropriate stimulus), anhedonia (manifested by loss of interest or pleasure), a Dysphoric mood (in the form of depression, anxiety or anger), and disturbances in sleep patterns. There can also be a lack of interest in eating, and there can be abnormalities of psychomotor activity (pacing, rocking or immobility). Many have poor insight into the fact that they suffer a psychotic illness, and this predisposes the individual*

*to noncompliance of treatment. Depersonalization, derealization and somatic concerns might reach delusional proportions. Anxiety and phobias are also common.*

*In Schizoaffective Disorder, a mood episode must be concurrent with the active-phase symptoms of Schizophrenia, mood symptoms must be present for a substantial portion of the total duration of the disturbance, and delusions or hallucinations must be present for at least 2 weeks in the absence of prominent mood symptoms.*

*By definition, Schizophrenia differs from Schizophreniform Disorder on the basis of duration; otherwise the features are almost identical.*

~

My son Mitchell didn't like to discuss in detail his "thing". He said that talking about it made it worse. I later found out that it is common for many people suffering a mental disorder to be in denial, and to downplay their situation. There is a tendency to want to work their way through it. This seems to be a normal, rational situation and in many cases, people do work it out.

I didn't have any insight into the cause, much less a solution to his problem at the time, but if I found a small clue, or if I came across any material that might be relevant, I wanted to share it with him. I resolved to write to him occasionally with my thoughts or insights into his problem. I discussed this briefly with Mitch, "That's fine, dad. Send me whatever you find," he replied.

I felt that I should contribute to the arsenal of tools that Mitch could use to work his problem out. Knowledge could be a tool. I needed to learn more.

I told Mitch that we should keep things in the open. The psychiatrists didn't seem to have any solutions that could help Mitch. I reiterated that they don't always have the answers and he should try to keep his spirits up. Sometimes psychiatrists don't know.

I told him about the time a group of psychiatrists asked Tito to invite them to one of his parties to observe him at close range. The psychiatrists hoped, then, they could diagnose exactly what was wrong with him. His actions, according to them, had to be the work of a madman. Who else would dare direct an invisible orchestra? In public?

Freud had died a few years before. Psychoanalysis, repressed feelings and unconscious motivations dictated by Oedipus and Elektra complexes were all the rage. Egos, Ids and Superegos fighting for control were in vogue. Once the repressions were brought into consciousness, the unconscious motivations could be understood and, thus, controlled; or so they thought.

Tito told me he was terrified of the idea of having these professionals come to dissect his behavior and make it public information. But after discussing it with some of his friends, he concluded that he didn't have anything to hide. Overcoming his fears, he invited the psychiatrists to attend a Crazy Tea, the most frenetic and

energetic of the parties. If they were going to hang him, let them do so as witnesses to his most memorable sessions as director.

Tito alerted some of his loyal followers to the presence of the psychiatrists at their next Crazy Tea, and asked them to be courteous with them. The psychiatrists would be there to evaluate Tito's behavior and not any of the guests; this was a precondition to their invitation. Benny, one of Tito's nephews, said, "Don't worry, uncle. You have nothing to fear. We will show them how much fun they have been missing."

The Sunday of The Crazy Tea in question arrived and Tito checked all the details of the party with extra care: the cases of Royal Crown Colas; the ice blocks; the equi-distanced curtain rings in the Imperial Patio; the wax on the dance floor; the Fountains of Arabia, quickly brought back into service (a broken pipe that splattered water on a window, but with the proper light made a dazzling display); the shine and polish of the floors and windows; the coat-check tokens. He double checked the lighting systems and extractors; checked the arrangement of ashtrays and the availability of the silent butlers; verified the perfect sound of the Trumpets of Jericho; he even checked the Monumental Incinerator, the old trash burner, where, when a record broke, the party stopped and a proper funeral was held for the faithful orchestra that would never play at the Empire again. If the psychiatrists were going to diagnose him as some kind of crazy person, let them see it all.

The party started as usual with light music in the background while Tito and my grandmother made the rounds with the guests, making them feel welcome, my grandmother introducing the shy young men to the less timid girls. The savvy guests acknowledged Tito with, "Good afternoon, Maestro," or greeted my grandmother, "Hello, People," which she invariably dismissed but played along.

The Gray Eminence, one of Tito's friends, arrived with the group of psychiatrists, and Tito signaled the King of Arms over and asked him to make sure that they were well taken care of. Tito went to the Imperial Podium, lowered the lights, chose some Rock 'n Roll music, carefully placed the needle on the record, then cranked the volume of the Trumpets of Jericho, assumed the role of Maestro, and, his conducting perfectly synchronized to the phonograph's music gave the orchestra a sign to start and let the party begin. The psychiatrists would get to see what they came for: the Maestro conducting the most famous orchestras and bands of the time, including some of the new small Rock groups.

Half an hour later, as the tired dancers, some in shifts, showed signs of exhaustion, the Maestro switched the lights to a soft purple and changed the music to slow dancing. The volume was turned down slightly to invite more intimacy. The Fountains of Arabia were turned on for added effect. The young men quickly took the opportunity to ask the girls of their fancy to dance. As soon as the dancers were getting comfortable and perhaps too intimate, the lights were changed to bright yellow, the Trumpets of Jericho spilling forth Cha-cha-cha's and Mambos following the Maestro's tight direction.

In the excitement, a record slipped out of the Maestro's hand, and fell to the ground. The Imperial Guards came running immediately with the Imperial Pillow of the Purple Order, named so because the pillow was purple. The smashed record was delicately placed on the pillow. The Imperial Guards escorted the pillow out to the Monumental Incinerator. After a brief acknowledgement of the name of the artist of the broken record and a tribute that included a sing-along of the popular music that was lost, the record was thrown into the Monumental Incinerator, and the Imperial Guards marched back to the Imperial Patio. After a proper exchange of protocols with the Maestro, he continued directing the music. His baton twirled, marking time, directing the changes in rhythm and lights.

At the height of the party, during the Tango hour, as he directed an Argentine Orchestra, Tito looked over his shoulder at the Gong on the wall. Noticing this, a small group quickly gathered at the edge of the Imperial Podium, and careful to avoid touching it, started clapping and yelling, "Maestro, Maestro! Mas!"

Tito obliged the small group and directed another orchestra, this time Glenn Miller's band. More people gathered and clapped. A quick change of bands, now Xavier Cugat's, and the crowd got down on its knees, clapping.

Tito looked down from his podium. He was sweating profusely. It was time for the Gong. There on the dance floor, he saw the psychiatrists. They were also kneeling, clapping to the music and yelling, "Maestro, Maestro! Mas!"

I still smile as I remember Mitch laughing at the image of the kneeling, clapping, imploring psychiatrists as Tito struck the Gong, turned the lights on and left the Imperial Patio through a side door. The echo of Mitch's special laughter remains floating, mixed with the sound of the gong in my mind.

~

Letter to my son Mitchell, April 1999 (not mailed but delivered in person when he visited us over a weekend; the beginning of an attempt to understand a panic attack):

*From an evolutionary point of view, I would venture to say that motor skills and senses would, in as rudimentary manner as you wish, "emerge" as the first skills of a brain. We are still very far from completely understanding how a nervous system could evolve. But once it has evolved, it is somewhat easier to see how it can be improved with evolution. Once locomotion and senses are evolved, any kind of strategy that would improve on this would be very advantageous.*

*A processing/interpreting mechanism will enable the senses to differentiate more things in the outside world. A genetically pre-wired memory would help some low, simple life forms, but a memory based on learning and experience would require much more complicated and versatile functioning. Any information from the outside world needs to be evaluated as "good" (positive) or "bad" (negative) or "neither". This information then needs to be used to control motor skills. This would enable an organism to approach a positive stimulus and flee from a negative one. A simple action-*

*reaction or reflex mechanism would suffice to explain this phenomenon. Needless to say, coordinating motor skills or sensing something (whether by smell, touch, sight or taste) is the result of millions of interactions between neurons. This not a simple act.*

*The introduction or evolution of instincts and/or emotions provides a much richer set of responses; this could be just a reflex mechanism, a new set of algorithms to recalibrate what is “hardwired” to the changing environment.*

*If we try to follow the neural pathway of a signal from the senses, let’s say the ear, through the nervous system and brain, what do we get? From Joseph LeDoux’s, *The Emotional Brain*, and simplifying a bit, acoustic signals are picked up by receptors in the ear; these are in turn sent down the auditory nerve to the auditory brainstem nuclei (cochlear nucleus and related regions) below the brain. Most of the axons, but not all, cross over to the other side and go up to the inferior colliculus. The axons from there go to the auditory thalamic relay nucleus, which in turn provides the majority of inputs to the auditory cortex, which in turn is made up of regions and sub regions. If this sound is interpreted by the thalamus to be “dangerous,” it sends signals to the amygdala.*

*The central nucleus of the amygdala has connections to the brain stem areas involved in control of the heart rate and other autonomic nervous system responses. The amygdala is responsible for triggering the fight-flight response. Stimulation of the amygdala produces heart rate and autonomic responses, as well as a “freezing” response. Lesions to this area of the brain interfere with essentially every fear response, including freezing behavior, autonomic responses, pain suppression, stress hormone release and reflex potentiation.*

*Axons from the auditory cortex travel back to the amygdala, either to reinforce what the amygdala is doing in dealing with danger, or perhaps to stop it, if the original signal is now perceived to not be dangerous. Axons also travel from the auditory cortex to the prefrontal cortex, and from here also back to the amygdala. From the amygdala axons also go to the paraventricular nucleus of the hypothalamus, which releases corticotrophin-releasing factor (CRF), which goes to the pituitary gland. This gland then releases adrenocorticotrophic (ACTH) hormone into the blood stream. ACTH then acts on the adrenal cortex, which releases steroid hormones (CORT) into the blood stream. CORT freely travels into the brain, binding to specialized receptors on neurons in regions of the hippocampus and amygdala. Through the hippocampus, CORT inhibits the further release of CRF from the paraventricular nucleus of the hypothalamus. The balance between the excitatory inputs from the amygdala and the inhibitory inputs from the hippocampus to the paraventricular nucleus of the hypothalamus determine how much CRF, ACTH, and ultimately CORT will be released.*

*The shorter the pathway, the quicker the signal can get there. In the case of danger the signal goes from the thalamus to the amygdala. This can get all systems going before the signal reaches the auditory cortex and can be analyzed. Obviously, the chemical signals act at much slower rates than the pulses through the axons.*

*In interpreting the pathway, the danger signal is relayed from the ear to the thalamus in a few steps. In the process, some axons cross over and relay the signal to the opposite side. But some axons stay on the same side. In this way, both sides of the brain are receiving the stimulus. It is possible that the stimulus received by each side is slightly different. Perhaps it will be used to*

*evaluate or process the stimulus by comparing it to the stimulus that came from the opposite ear. In this way the brain can interpret several things from the stimulus—where the sound is coming from, what the sound is, etc.*

*If the sound is considered dangerous, it is relayed to the amygdala and the auditory cortex. If it isn't considered dangerous, it is just relayed to the auditory cortex. The auditory cortex then relays the signal back to the amygdala, to either increment the activity of the amygdala (when the sound is dangerous), or stop the activity of the amygdala (when the sound isn't dangerous).*

*The signal also gets relayed to the prefrontal cortex for further processing. More interpretation of what the sound is will happen here. This information will also be relayed to the amygdala, presumably for the same reasons, except that this information will be more refined. The amygdala has more axons going to the cortex than the cortex to the amygdala, which suggests that this stronger channel helps the cortex know or focus attention on the stimulus, especially when it is dangerous. Attention is focusing all senses on the dangerous stimulus. We couldn't live long if we didn't pay attention to life threatening situations.*

~

In April 2002, my wife our two sons, and I traveled to Mexico for the Fifth Sanchez Open, an annual family reunion. That year, as every even year, the family gathered for the tournament in Valle de Bravo, a town nestled in the mountains next to a man-made lake about an hour and half west of Mexico City. On odd years it is held in Acapulco. We take turns hosting the family tournament; my cousins in Valle de Bravo; my sisters and I in Acapulco.

The Sanchez Open with a golf tournament on Friday and tennis doubles tournament on Saturday is a time for our family to gather and renew our ties. About 80 people show up—brothers and sisters, cousins and nephews and nieces, uncles and aunts, in-laws. More often than not, four generations are there.

That Sunday, my younger sister Susana approached me as I was sitting by the pool of the plush Club in Valle de Bravo. She showed me some pictures of her recent trip to Minneapolis. In one of them she is standing in the middle of a stage in an auditorium wearing a red dress and cape.

“I need to talk to you,” Susana said. “Do you have time right now?”

“Sure. I'm all ears.”

“Where do I start?”

“Wherever. We'll fill in the gaps as needed if there are any. Don't worry.”

She took a deep breath and, “They called me from Minneapolis right after September 11.”

My sister belongs to Eckankar, an organization based out of Minneapolis. This organization helps individuals lead a more fulfilling spiritual life. They believe in reincarnation and communicating with other souls through dreams and other means, as well as the possibility of traveling outside the body. They believe that

anyone can learn to communicate and travel in those ways; it is all a matter of training and dedication.

“They asked me to prepare a five minute speech on the subject of how to reach God. I asked if they could be more specific but they told me that I would figure it out. I disconnected the television at home. There was just too much repetition of the collapse of the Twin Towers. I didn’t feel it was a good thing for the children,” Susana interjected, as an explanation for her behavior. Her children, Othiana, Carel and Manek, were twelve, nine and four, respectively.

“I was very nervous,” she continued. “I had no idea of how or where to start to figure this out. So I decided to sing “Hiu,” you know, the exercise that we use to focus and calm our souls, I found guidance. Something told me that the clue would be in traveling light. I decided to go to the airport in Mexico City. I thought I would find inspiration by observing people that traveled light and compare them to people that are loaded down with heavy suitcases. Maybe an idea would surface.

“I was walking around the airport with a small backpack in which I carried a couple of Eckankar books, and my writing pad. I didn’t realize that I was in the International Arrival area, much less that all international flights were at the moment canceled. As I told you, I had disconnected my Television. I did notice a few security people watching me intently, and this in turn made me aware that there weren’t any people in this part of the airport. I went to one of the TV monitors that show Arrivals and Departures and stared at it, pretending I was searching for some information. After all how could I explain what I was doing there? They would think that I was crazy if I told the truth.

“As I watched the monitor, a man approached to check the flight information. He seemed very upset. After a few moments I said to him, “Is there anything wrong?” He turned to me, almost in tears, and explained that his sister had died in Los Angeles and he was expecting her body any moment. But then they had canceled all international flights from the United States, and so the waiting was agonizing. I realized that this was the real reason I had been sent here. I was here to help this man.

“I explained to him that the body is just a vessel that the soul uses in this life. That once the soul has departed, the body isn’t that important. And so I talked to him a little longer along these lines and he calmed down considerably. I remembered that one of my Eckankar books in my backpack could be of help for him. So I opened my backpack, pulled the book out and offered it to him as a gift. At first he said he couldn’t accept. Then he asked for my address so he could return it. Finally, he accepted it and thanked me profusely for my time and the gift. I realized that several of the security personnel were still scrutinizing us closely. I figured that they might be familiar with him because of the ordeal he had been going through, but I wasn’t taking any chances. I decided that my mission in the airport was finished.

“I threw my backpack on my back and started walking toward the parking lot where I had left my car. As I was walking, I realized that my backpack was lighter.

There, in the lighter backpack, was the metaphor I could use in my speech. As you travel, lighten your load by giving. The lighter your load, the farther and faster you can go. In life it is all about giving love. I had the beginning of my speech.”

I waved to a waiter, and mimicking drinking from a bottle with my hand, I ordered a beer.

“When I arrived in Minneapolis, I went to the Eckankar headquarters to show them my speech. I went to the office of the woman that had invited me to do the speech. First I was warmly greeted, and then I was informed of the program and who would speak after me. Both names were of authors of books I had read. This started a pang of anxiety and self-doubt. She then read, and categorically informed me, that my speech was unacceptable. ‘You simply cannot have a speech about love making references to airports and airplanes. After all, this is only one month after September 11.’ I was much shaken, but for some reason I remained adamant that this was my speech and I wouldn’t change it. She then asked me about what kind of clothes I was planning to wear the next day for the delivery of my speech.”

Susana pulled out some pictures to show me her outfit. In them, she is facing a large audience in a big auditorium. She is standing in the middle of the stage, a microphone in front of her and she is wearing a red dress, cut slightly below the knee, with a matching red cape.

Without stopping Susana continued, “And when I told her, she said that my clothes were not acceptable either. She said that red is simply not a good color to wear under all the artificial lights and that it wouldn’t be becoming to me.”

I mentally agreed that it wasn’t the most becoming, but remained silent as the waiter brought me my beer. I took a sip.

“I swear to you, that I don’t know why I was so adamant, but I didn’t budge one iota on the issue of the dress either. I informed her that I was giving my speech as is, and I was going to wear the clothes that I brought and that was that. I went back to my hotel room, where I was engulfed in self-doubt. I sang ‘Hui’ to try to find my center. Was I being ridiculous? Too stubborn? I wondered. Perhaps too childish and stupid. I feared that the phone would ring at any moment to inform me that they had canceled me as a speaker.”

She paused as if trying to gauge how I was reacting to her conversation and how to proceed. “And then I had one of those rare occasions when you are permitted to see in a dream a past life experience. In this dream I saw myself as a Cardinal in Seville, and I was going to give a speech against the Inquisition.” As she said this, “Segovia,” popped into my mind.

Susana continued, “One of my secretaries pointed out to me that these were dangerous times, and my speech against the Inquisition could result in even more danger to my person. This secretary suggested that I take a different route to the meeting place than the one I normally would use. This way, if by any chance somebody were waiting to ambush me, after all my speech was no secret, they would be foiled in their attempt. He then indicated, what to me seemed a brilliant idea, an alternate

route. I followed this man's instructions and as I walked down an alley following this route, I was assaulted by several men and stabbed to death."

As Susana was telling me this, slowly at first, but then more insistently, "Segovia, Segovia, Segovia, Segovia," was running through my thoughts, and impulsively I asked, "So, what was I doing in Segovia?"

"Don't make fun of me. This is serious," she answered.

"I am serious. As you were telling me this, Segovia, Segovia, was running through my head."

"I have no idea, but let me finish. In this dream, in that life, the man that advised me to take an alternate route, is in this life our mother. Now I understand why I had so many problems with her. Now that I understand this, my relationship with our mother has improved greatly. She gave me life to atone for what she did to me in that other life!"

I took another pull from my beer and, "Interesting, very interesting," I thought. I waited. I think she was trying to see if I believed her. I believed her.

"And not only that; the woman that invited me to speak in Minneapolis was one of the guys who stabbed me to death. That is why she invited me to speak. She must've known that I was a great public speaker, and that is also why she was so much against my red dress. It reminded her in some way of my Cardinal outfit."

"You do look like a Cardinal in that red dress, that is what I first thought when you showed me the pictures," I interrupted quickly.

"In other lives you can be of a different sex," she added as if I needed an explanation for the difference in sexes in the three men in that life and the three women in this life. She continued, "With all this new information, I was greatly relieved. I realized that I was going to be all right. I realized I could be magnanimous with her animosity, because now, I clearly understood the roots of it. So, I slept soundly that night, donned my red outfit with my Cardinal cape and went to deliver my speech. I was extremely nervous, and I don't remember much until, through a haze I heard my name. I got up walked to the center of the stage, turned to face the audience, and with my left hand shaded my eyes from the glare of the lights as I tried to make eye contact with the audience. I couldn't see anyone; the lights were too bright. I heard some chuckles, and I calmed down completely. I heard myself speak in another person's voice, "Good morning, how are you all?" This was not part of my speech, but I continued, "I want to thank you all for the opportunity to speak to you this day." I said it calmly and slowly, and I felt an immediate response and warmth from the audience. I then proceeded to deliver my speech. When I finished there was a thundering ovation. Not only had I done it, but I had done it well!"

Susana smiled smugly at me. I smiled back. "Interesting, very interesting," I thought. For the first time, not in a logical sense, but in an emotional, faithful sense if you will, I understood clearly that some people believe strongly in life before life,

as well as life after life; reincarnation. Some religions believe in life after death. Some believe that communication with the souls or spirits is possible through dreams, and/or special training. Others believe that it is possible for the soul to have out-of-body experiences, and/or travel in the astral plain outside the body. Since that day, some coincidences in my life have been staggering, and more importantly, have given me great solace in the face of great pain and suffering.

A few months later, as I prepared to go to Spain for the first time in my life, my sister Susana called me, "1474 is the year you have to keep in mind. It is the clue. And if you have a 'deja-vu feeling' that might be significant."

"I'll keep that in mind," I answered.

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# Phantom Body

*The brain detects the body and controls it in different ways. Some body movements are emotionally triggered, like smiling when we see a loved one or an automatic expression of disgust in the presence of putrefied food. A spontaneous smile is produced by the basal ganglia, clusters of cells located next to the thalamus. When you see your friend, the visual message of his face reaches the emotional center or limbic system and is relayed to the basal ganglia, which in turn orchestrates the sequences of facial muscle activity needed to produce a smile. When this loop is activated by the correct stimulus, your smile is genuine. Everything happens in a fraction of a second without the thinking parts of the cortex ever being involved. A pleasant echo matched a pleasant stimulus, and a smile was activated automatically.*

*What happens when someone asks us to smile? The verbal instruction is received by the higher thinking centers in the brain, including the auditory cortex and language centers. From there it is relayed to the motor cortex, which specializes in producing voluntary movements. Despite the apparent simplicity, smiling involves the careful orchestration of dozens of tiny muscles in the appropriate sequence. As far as the motor cortex (which doesn't specialize in smiling) is concerned, this is as complex a feat as playing Rachmaninoff with no piano lessons, and consequently the effort fails completely. Your smile is forced. You look like an idiot.<sup>3</sup>*

*When a person suffers a stroke in the right motor cortex—the specialized brain region that orchestrates voluntary muscle movements on the left side of the body—problems crop up on the left. Many stroke victims are paralyzed on the right or the left side of their bodies, depending on what side the brain injury occurred. Yet, when these patients yawn, they stretch out both arms spontaneously. Much to their amazement, their paralyzed limb comes to life. It does so because there is a different brain loop involved in yawning, and that brain loop controls arm movement—this loop is closely linked to the respiratory centers in the brain stem. These movements are emotional (smiling) and reflexive (yawning), respectively. They are not voluntary muscle movements.<sup>4</sup>*

*Different circuits control voluntary movement. The primary motor cortex is located just in front of the central fissure that separates the frontal and parietal lobes, the supplementary motor area and the premotor cortex are adjacent to the primary motor cortex.<sup>5</sup> The primary somatosensory cortex is just behind the central fissure, running alongside the primary motor cortex. There are*

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<sup>3</sup> V.S. Ramachandran, *Phantoms in the Brain*

<sup>4</sup> Ibid.

<sup>5</sup> Carl Sagan, *Dragons of Eden*

*rich connections between all these regions, especially between the primary motor cortex and the primary somatosensory cortex.*<sup>6</sup>

*The body is normally mapped to the primary motor cortex and the somatosensory cortex. Each part of the body is represented disproportionately to its size, according to the number of neurons in each part. For example, the hands and arms use more space than the torso and legs. The face is represented in an area about as big as the hand's area; the lips use an area as large as the thumb.*

*If we follow the strip of the somatosensory cortex from the top of the brain down, starting on the inside fold of the hemisphere, we have first the genitals, then above it the feet; now as you turn onto the outside of the hemisphere, we find the trunk, neck, shoulder, arm, followed by the hand, with the fingers receiving a disproportionate area, especially the thumb; next follows the head from the top down, meaning forehead first and ending with the lips (again, disproportionately represented) and chin.; and last the thorax and voice box (the pharynx). These disproportionate representations are due to the fact that the lips and fingers, for example, are much more sensitive to touch and are capable of very fine discrimination.*

*For the most part the map is orderly though upside down: The neurons controlling the foot are represented at the top and the outstretched arm is at the bottom. Upon closer examination, the map is not entirely continuous. The face is not near the neck, where it should be, but is below the hand, and the genitals instead of being between the thighs, are located next to the foot.<sup>7</sup> When you touch any part of the body, you can measure the firing of respective cells in the cortex. Conversely, if you stimulate electrically any part of the motor cortex (which is mapped similarly), the corresponding body part will move.*

*The persistence of sensation in limbs long after amputation is a well-known phenomenon called phantom limbs. When you lose an arm, the arm stops sending signals to the arm area, and in the absence of signals, the synaptic connections between neighboring areas, in this case the face area, become active and invade the area that used to be the hand. Because of this invasion, when certain areas of the face are stimulated, the corresponding missing arm area fires away, creating the sensation that the arm is there. In this way, an equivalent map of the missing arm is transposed onto the cheek. If the loss of the arm is slightly above the elbow, the upper arm area will also invade the missing arm area, and not only will there be a new map of the missing arm transposed on the face, but also on the upper arm near the shoulder.*

*Generally, neurons in adjacent areas are interconnected. Connections between the adjoining hand and face maps ordinarily are inactive, but in the absence of signals from the hand, the hand map looks for other inputs. In so doing the inputs that were "silent" from neighboring areas become the new inputs fooling the hand area to believe that the hand is still there.*

*When you decide to move your hand (the real hand), the chain of events leading to its movement originates in the frontal lobes—especially in the motor cortex. It has been determined that the motor cortex is concerned mainly with simple movements like wiggling your finger or*

<sup>6</sup> Jean Talairach and Pierre Tournoux, *Co-Planar Stereotaxic Atlas of the Human Brain*.

<sup>7</sup> Carl Sagan, *Dragons of Eden*.

*smacking your lips. The supplementary motor area is in charge of more complex skills, such as waving good-by. It oversees passing the specific instructions of the required movement in the proper sequence to the motor cortex. Lastly these signals will travel down the spinal chord to the appropriate muscles on the opposite side of the body, making the specific movement take place as the muscle contracts.*

*Every time a signal is sent from the supplementary motor area to the motor cortex, it is relayed to the muscles and they move. Identical copies of these signals are sent to the cerebellum and the parietal lobes. Once these signals are sent to the muscle, a feedback loop is set in motion. As the muscles execute the movement, signals from the spindles and joints are sent back to the brain, informing the parietal lobes and the cerebellum that, “yes,” the movement is being properly executed. There is also another channel of communication in the spinal cord, the motor (down) pathway connects with the upcoming sensory pathway. As a result, the loop is closed quicker, confirmation is sent back to the brain that the motor command is on its way to the muscle before it reaches the muscle and the motion is executed. These two structures help to compare your intention with the actual performance and modify the motor commands as needed. Thus intentions are transformed into smoothly coordinated movements.<sup>8</sup>*

*These connections in the spinal cord remain intact after the loss or amputation of the phantom. This short feedback pathway between motor instructions and sensory signals of the missing limb combine with the mixture of the sensory information from the face and upper arm, through remapping (creating the phantom hand), and converge with the confirmation of the motor command to the missing hand, which produces a vibrant, dynamic image of the phantom hand—an image that is updated as the phantom hand moves. This creates the very realistic illusion of movement in the phantom limb.*

*In the case of a paralyzed limb, the signal to move is sent, but vision confirms that there is no motion. As the signal is sent out again, many times, the visual feedback confirms no movement—a learned paralysis is stamped into the brain’s circuitry.<sup>9</sup> If the limb is later amputated, sometimes the paralysis is passed on to the phantom!*

*When patients report having a paralyzed left phantom limb, using mirrors and the right limb to fool the brain into “seeing” the phantom limb, some patients have learned to un-paralyze their phantoms. By seeing the phantom limb (seeing the mirror-image of the real limb), and then, willfully moving both simultaneously, movement is restored to the paralyzed phantom. In some cases, the phantom limb disappeared in part or completely. This suggests that when the parietal lobe is presented with conflicting signals—visual feedback relaying movement while the muscles are saying the arm is not there—the mind resorts to a form of denial—there really is no arm there.*

*Pain is one of the least understood of all sensory experiences. Pain in a phantom limb is a source of great frustration to anyone who experiences it. Occasionally, one complaint is that the phantom hand curls up into a tight, white-knuckled fist, fingers digging painfully into the*

<sup>8</sup> William H. Calvin, *The Cerebral Symphony*.

<sup>9</sup> V.S. Ramachandran, *Phantoms of the Brain*.

*palm. With the use of the mirror box, the patient positions his or her remaining hand to superimpose its reflection over the phantom hand, and after making a fist with the normal hand, tries to unclench both hands simultaneously. About half the patients report, some even on the first try, that the phantom hand opened, lessening the pain immediately.*

*Consider what happens in your brain when a motor command is sent from the premotor and motor cortex to make a fist. Once the hand is clenched, feedback signals from the muscles and joints in your hand are sent back through the spinal chord to the brain saying, “Slow down, enough. More pressure and it could hurt.” This proprioceptive feedback applies brakes, automatically with great speed and precision. When the limb is missing, the feedback isn’t possible and the brain continues to send the signal, Clench More. Motor output is amplified even further (to a level that far exceeds anything you or I would ever experience) and the “sense of effort” may itself be experienced as pain. The mirror works by providing visual feedback, taking the place of the proprioceptive feedback, and the hand can be unclenched.*

*But why the sensation of nails digging into the palm? There is a memory link in the brain, between the motor command to clench and the unmistakable sensation of “nails digging”, so you can readily summon the image in your mind. Yet, even though you can imagine vividly the nails digging, you don’t actually feel the sensation and say, “Ouch, that hurts.” The reason is that the real skin on the real palm is reporting that there is no pain. In the case of a phantom hand, there are no signals countermanding to forbid those stored pain memories.*

*It seems extraordinary that you could use a visual illusion to eliminate pain, but bear in mind that pain is an illusion—constructed in your brain like any other sensory experience. Using one illusion to erase another doesn’t seem very surprising after all.*

*There is a deeper message here: Your own body is a phantom, one that your brain has temporarily constructed purely for convenience. This phantom allows the brain to control the movements of the body.<sup>10</sup> What can be more real than our own bodies? However, we have seen how the brain has carefully created a map of our body to control the body in order to navigate through the environment and to communicate our internal state to others. The body we experience is essentially a phantom that feels and corresponds to our experience of ourselves in contact with the environment. It is a continuously updated illusion that relies on the most recent memories of our body and its changes in relation to its parts as well as in relation to the world around us. The brain has constructed one continuous map, integrating the visual map of the outside world and the internal, proprioceptor map of our bodies.*

*A memory of each complicated movement has to be stored and activated at the appropriate time. Many movements can’t be figured out in advance and therefore need many hours of practice to be able to repeat consistently. Practice, after all, makes perfect. The computations involved in coordinating all the muscles of the body to achieve a particular movement, like running, for example, cannot be done in real time. To place one foot in front of the other, to coordinate the arms and head and torso to maintain balance—these sequences have to be memorized, and with small variations from the cerebellum can be managed in real time.*

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<sup>10</sup> Ibid.

*When you imagine moving your fingers, the supplementary motor area becomes active, just as if you moved your fingers. It is remembering the movement, so to speak. When you do move your fingers, the motor cortex becomes active also. The supplementary cortex is thus receiving signals through various parts: from the thalamus and the somatosensory area of where the body parts are; from the parietal lobes it receives signals of the body image and spatial orientation and from the prefrontal connections impulses that help get sequences of movements in the right order for the motor cortex to execute.*

*The supplementary motor area has as many connections to the spinal cord as the primary motor cortex. The connections between the supplementary motor and the primary motor cortex are just as rich. It also has extensive connections to and from the parietal lobe (information about body image and spatial matters) and to the ventral thalamus (and through there to the basal ganglia, another major component of the movement-control system) that the motor cortex doesn't have. It is in these circuits and loops where integration of the extrapersonal and intrapersonal space takes place.*

*Some movements are closely linked to emotions and consequently are orchestrated by the limbic system, which controls emotions. It is important, from a social view, that emotions be communicated to others, and this is accomplished by gestures and body postures. Facial expressions are universal across cultures and some are even universal across species. Think of aggression and the baring of teeth. Perhaps a small variation of the baring teeth evolved into a smile, as a signal that we are friend and not foe. Most of us find it relatively easy to read different expressions, of disgust, shame or fear, for example. There is a natural, close relationship between our emotions that produces characteristic facial expressions and body language across many cultures: anger, sadness, joy, disgust and surprise.*

*The memories of our body movements and face gestures generated by reflexes, feelings or by voluntary action are a part and parcel of our everyday existence. As such, we need to consider communication with hand gestures, body postures and facial expressions as an integral and basic form of language that the brain uses to communicate our internal state to others. As a good (and highly evolved) example of this we have pantomime and dance.*

*As I put together the interconnectedness of the motor system with the senses, of the motor system with the expression of emotions, my brain theory started to fall into place, but new doubts encroached.*

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Perhaps this story should start on March 1, 1979, the day that my sister Minnie married my friend Pepe and my son Mitch was conceived. That night his genealogical makeup was decided. Half of my genes mixed with half of my wife's and created our unique Mitch. Could there have been something in that mix that led to Mitch's suicide? Pat's father suffered depression; my sister Minnie suffered anxiety attacks. Could there have been some genetic predisposition or susceptibility?

Or are environmental factors, outside stressors, more important factors? Then, the story should start June 16, 2002, a little more than 23 years later, when Mitch graduated from the University of California at Santa Barbara and my sister Minnie

suffered a blood clot that lodged in her lung? Could the events of that day set in motion a chain, that slowly, but inexorably, one link after another lead to such a terrible outcome?

That Sunday, my son Mitch graduated from college with a degree in International Studies. It was a beautiful day, typical of the beginning of summer in Southern California. Mitch looked handsome and healthy with his reddish hair and intense green eyes, surfing tan, his muscles well toned and supple. He looked ready to begin another stage of his life.

Still, I felt some concern. Having broken up on amicable terms with his girl friend Katie a couple of months before, he was now living alone with his dog Colby. Perhaps, he needed to live in a more social environment with roommates, friends or family. On the other hand, I thought, this temporary situation couldn't hurt Mitch much.

With us, to attend his graduation, were our eldest son Freddy, other relatives and friends. When we arrived at UCSB, there in the front row was Freddy's godfather, Enrique Gomez Vadillo. He had arrived from Los Angeles early in the morning. Even though he was not technically Mitch's godfather, he felt he was, because Mitch always called him Padrino (Godfather).

Everything seemed to presage a brilliant future. There was the possibility of a computer-drafting job. Mitch had also enrolled in a program to go to Spain at the end of August to pursue a Master's degree. At dinner, we toasted and celebrated the end of this phase of his life. We kissed and said our good-byes late that night.

The next morning, Mitch was going surfing with Freddy and some friends, so my wife decided to go to The Santa Barbara Botanical Gardens, which featured California natives. We had been doing some landscaping around our house in Carmel, and we definitely had an interest in drought-resistant plants, especially if they were California natives. After seeing the gardens, we went to the adjacent nursery to buy a few plants. While we were there, we got a phone call from our office asking me to contact my sister Pelusa in Mexico City. It was urgent.

I was the oldest sibling in our family, with four younger sisters; Pelusa was the second oldest. I dialed wondering what the emergency could be, hoping that urgent was along the lines, "I wanted to tell you, I was thinking of you."

Pelusa answered on the first ring. She immediately recognized my voice. Our sister Minnie, she explained, had gone into a hospital in Mexico City the previous Thursday to have cosmetic surgery, a tummy tuck and some minor plastic surgery of the face. Then, "Yesterday morning when Pepe (Minnie's husband) came to pick her up to take her home, there were some complications. Pepe called us, and when we arrived about fifteen minutes later, there were some doctors working on her. They decided to take her to the Intensive Care Unit. She had a blood clot." The rest of the conversation is fuzzy in my memory, but I remember hearing the words "kidney failure," "liver failure" . . . "brain hemorrhage." Pelusa's voice started to break, "We need you here."

"I'm on my way," I responded and hung up. I quickly recounted the conversation to my wife, then we left. Unable to contact Freddy and Mitch, we left a message. We drove to Carmel, I packed a small suitcase, and my wife took me to the Monterey Airport. I flew to Mexico City via Los Angeles. During the flight I tried to concentrate on my role in all this. I focused on the moral and ethical decisions that we would probably have to face very soon. "That is probably what they need me for, to show the way," I thought. I was definitely not going to Mexico City to find a medical solution; that was already too late. I was sure that my brother-in-laws would have seen that she had the best medical attention possible and that other medical experts would have been brought in to weigh the possible alternatives.

The words "brain hemorrhage" kept creeping into my thoughts; then questions: "At what point do you pull the plug? If my sister is brain dead, what should be the course of action? What would she have wanted? Who should be consulted and considered in the decision process? Are there other considerations to keep in mind? Whose sensitivities might be hurt by these awful decisions?"

I arrived in the early dawn of Tuesday. It was still dark. To make matters slightly worse, my suitcase had been lost. On the good side, well, I didn't need my luggage at the hospital that morning. I hailed a cab and proceeded to the hospital.

In the Intensive Care Unit, looking down at Minnie, I had the eerie feeling that she wasn't there anymore. She was breathing and her heart was beating, but you could see that she was hooked up to all kinds of equipment that were doing this for her. I felt she was already gone.

I went for a walk to calm down. The decisions we needed to take slowly fell into place. I walked back to the hospital and I saw Pelusa sitting on the sidewalk with a styro-foam cup with steaming coffee. She normally sleeps about five hours a night. I guessed with all this, she was sleeping less. I always envied her for that. It was 6:45 a.m. It would be a long day.

I pretended to be arriving from the airport so she could pour out her feelings. I tried to be strong for both of us. It was easy to tell how much the strain of this ordeal was wearing her down. I let her know that I was there to relieve her.

"Our father arrived last night about eleven. He has already seen Minnie." As an explanation she added, "I got in touch with him on Sunday." Our father lives in Acapulco but he has a house in Idaho, and spends the summer months there. Ironically, Sunday was Father's Day.

After mentioning minor family details, Pelusa said, "They will do another electroencephalogram at 1:00 o'clock to confirm there is no brain activity."

"By another, do you mean they did one yesterday?"

"Yes," she added holding back her tears. "There was no brain activity. Today's test is to confirm that she is brain dead."

I kept silent; I didn't want to tell her about my eerie feeling that our sister had left us already. We walked into the hospital and went to the cafeteria. Slowly, as the

morning progressed, friends, relatives, cousins started showing up. Some joined us in the cafeteria; some went to the waiting room outside the ICU.

When my father arrived, the two of us went into the ICU to see Minnie. He held her left hand; I, her right hand. My feelings of impotence were overpowering. I looked at all the monitors, their readings unchanged in the last few hours. We went out.

In the hallway I met my sister Susana and my mother. My mother, then seventy-two years, has been suffering from multiple sclerosis since she was 39. She walked slowly with the help of her aluminum walker. I am still amazed at her strength in the face of adversity. We hugged, and she asked me to accompany them into the ICU. My mother looked at her daughter. After a long interval she sobbed and let her tears come. I held her.

Shortly after my father gathered Pelusa, Susana, and me to talk in the waiting room.

“I think that Minnie would not want to live as a vegetable,” he said without preamble. “I am of the opinion that she be disconnected from life support systems as soon as the 1:00 o’clock test confirms that she is brain dead. I feel we owe her that. Does anybody have a different opinion?”

He looked each one of us in the eye. Although it seemed to me that we all had slowly and painfully come to this conclusion, we agreed less reluctantly than I expected. “I also think,” my father continued, “that Pepe is entitled to make this decision. After all, it is his wife. I would like us to stand united behind him, whatever he decides. Even if his decision is different than ours, we should support him 100 per cent unanimously.” We looked around at each other, and silently agreed.

“Let me talk to Pepe about this,” I volunteered. They all seemed relieved that I had offered to do this unpleasant task. “Don’t worry,” I said more to myself, than to them.

I then prepared myself for what was probably going to be hardest—my encounter with Pepe, Minnie’s husband and my good friend for the last 38 years. He and my sister had just celebrated their twenty-third anniversary. They have a son Pepito and a daughter Francesca, twenty-two and twenty years old, respectively. They had just started building a new house, they were planning long trips; they were going to start to enjoy all the good things in life.

About half an hour later I heard Pepe’s voice in the hallway. Good mornings were being exchanged along with whispers of sympathy and encouragement. I stood in the waiting room. Slowly he worked past the friends and relatives in the hallway. As soon as he saw me his eyes filled with tears. “Come,” he said to me, as he grabbed me by the arm and quickly led me to the stairway that led to the garden. We embraced and cried. A few moments later, when we were calmer, I said, “In a few hours, we will know the results of some tests. I want you to know that my mother and

father and my sisters as well as I stand by you on whatever decisions you make. We are behind you all the way.”

He nodded and took a deep breath. “Last night I talked with my children. I calmly explained to them that they had to be a part of whatever decision we made; that they and I needed to be together more than ever in the face of this tragedy; that I couldn’t make this decision alone, because I could not later or ever be held responsible by them for making any decisions regarding their mother, whatever they might be. We discussed it carefully and they agreed with me that if their mother is brain dead, we should stop assisted living of all kinds, and let nature take its course.”

I nodded, with tears in my eyes. “I also want you to know that there is no rush in making any decision; if you feel that you need to wait one or two more days to make up your mind, we understand. If you feel that someone needs more time or that we are being insensitive to his or her needs, we can wait. We support you one hundred per cent. Keep that in mind.”

“I appreciate that.” He looked into my eyes with infinite sadness. “Let’s go join the others.” He took a deep breath and went back to the waiting room. I had quit smoking a month before, and as part of my forming-new-habits routines I carried a pipe that I could use as a pacifier in case of a nicotine craving. I put the pipe in my mouth.

Friends and relatives kept showing up at the hospital during that day. A little after one o’clock the doctors met with Pepe and my sisters. The test results were the same: Minnie was brain dead. Pepe informed the doctors that he didn’t want his beloved wife struggling and suffering any more. “We’ll disconnect her from life support at six o’clock this afternoon and let fate take its course.”

In the course of the afternoon friends and nephews and nieces and relatives were allowed to go in to see her. My father and mother went in separately and said their respective farewells in private. When my mother came out of the ICU, my father embraced her, said, “We are losing one of our jewels.”

At five to six, my sister Susana pulled my arm, “It’s time, come with us,” nodding towards my sister Pelusa standing next to her.

I put my right arm around Pelusa’s shoulder, and my left arm rested on Susana’s back as we went through the entrance of the ICU. Instinctively, I waited for a moment, then moved my left arm back and turned to look for my other sister. For the last forty years it had always been three sisters by my side. For the first time, I became very conscious of how huge the hole in my soul was going to be.

With effort I withdrew my left arm from the empty air behind me and put it on Susana’s shoulder. We continued walking towards Minnie’s bed. Pepe was next to Minnie, his son Pepo standing close to him. Francesca, looking so much like her mother, stood on the other side of the bed. The three of us joined them.

As soon as the nurses started disconnecting all the equipment, I could see her vital signs slowing down. Although for me she had already departed, her body

continued on. I embraced Pepo, and then went to embrace Francesca. Minnie's heart beat slower and slower. Eight minutes later she died. Pepe embraced Minnie, then left quickly. I looked around me and reminded myself that I was here to help others get through this. I saw Francesca standing serenely between my two sisters, all three tenderly looking at Minnie. I looked at Pepo. He stood motionless; his face masking all feelings, I couldn't read anything. I said to no one in particular, "I'm going out to tell them that Minnie is gone. I'll also check on Pepe."

After crossing through a sea of relatives and friends all extending condolences, I was able to find Pepe. He was sitting in a chair in the third story garden. I pulled a chair next to his and sat down. Rogelio, Pelusa's husband, and also friend of ours for the last 38 years, came and sat next to us.

Although Pepe knew I had quit smoking a month before, he still asked, "You wouldn't have a cigarette, would you?" I shook my head. "Maybe you could get me one," he said more than asked.

Looking around, I saw a gentleman across the garden smoking. I got up, approached the man, and I said, "My brother-in-law just lost his wife and he felt like having a cigarette. Do you mind if I bum one from you?"

The gentleman pulled his pack of cigarettes out and said, "Are you sure you just want one?"

I nodded and thanked him and returned to sit next to Pepe and Rogelio. I gave Pepe the cigarette and he pulled out his lighter. As Pepe inhaled he said, "Thanks." I pulled out my never-lit pipe, which was part of my quit-smoking exercises, and put it into my mouth.

Rogelio turned to me and asked, "You're going to smoke too?"

"Does it bother you?"

"What I mean is you don't need to smoke right now. It is better if you don't. You just quit, remember?"

"Yeah, you're right. I don't need my pipe," I put the pipe back in my pocket. "But if Pepe wants to smoke, it's all right."

"That's different, Pepe hasn't quit smoking."

The three of us sat in silence. Pepe smoked his cigarette. I thought about each of our losses. I wondered if they knew how big mine was.

Two days later Freddy and Mitch picked me up at the Monterey Airport on my return from Mexico City. My sister's death seemed so enormous. I felt a strong need to be with my sons and wife, with the people I most loved. Freddy was living at home, looking for an engineering job. Mitch was still living in Santa Barbara and had plans to enroll in a graduate program in Spain next fall. He spent the following days with us. A week later we all flew back to Mexico City to attend a memorial service in honor of Minnie.

At my sister's memorial I saw all my cousins, among them Carlos, son of my grandfather's sister. Carlos was, as usual, with his wife, Lupe. His father had passed

away the previous summer. Carlos had mentioned that he wanted to go to Spain to visit the place where his grandfather had been born. He had found a pile of correspondence between his grandfather, who came to Mexico as a young man, and his great-grandfather who had remained in Spain. I had told him that I would be glad to go with him whenever he decided to go to Spain.

With the unexpected loss of my sister, the world and my priorities had changed. I now realized that I could die any day. There is no guarantee against it. So I'd better get doing the things that I wanted to accomplish.

So I asked Carlos, "What about your trip to Spain? When are we going?"

Without missing a beat he answered, "When is it good for you? The reality is that I haven't planned any of it, but sure, it sounds great to me. How does September work for you?" Mitch was planning to go to Spain in September, so, without much more thought, we decided we were going to Spain.

On our return from Mexico, in the first days of July, Mitch started work in Santa Barbara doing computerized engineering graphics. He had applied for the job not really believing that he could get it. When he did, he cancelled the Spanish Program. He was very excited; he had his own computer and even a secretary.

Four weeks later, he called me to tell me the work was making him crazy. Concentrated analytical thought, he explained, triggered anxiety that could escalate to a panic attack. "Dad, I am living all alone with my dog, my friends are not around. All I do is struggle to go to work, struggle to get through the work day, and then struggle to get to sleep; and from lack of sleep, I'm worse the next day. I am just continuing in a downward spiral. Every day I feel it is getting progressively worse."

I explained there was no reason for him to continue in a path that was proving to be so disastrous for him. He had to keep in mind that he was fortunate to have loving parents. I told him it would be all right to come home, work in the family business and take some time to recover and get well. It would also help me recover from my grieving after Minnie's death.

So in early August, Mitch quit his job and came home to live with us. He would be working in our business. I was glad for this, as Freddy my other son had found an engineering job and would soon go live in San Francisco. Freddy had been helping out in the office learning the business; Mitch could take his place.

Mitch seemed a bit agitated when he arrived in Carmel, but seemed to calm down considerably as the days went by. He told us that the Paxil we had gotten in Mexico wasn't the same as he normally took. I assumed (incorrectly) that it might have to do with the proper dosage. We got him a new prescription, and he reported that the Paxil was now working properly.

Although we were worried about Mitch, we sensed a steady improvement. He insisted he was all right; as usual, he didn't want to discuss it. We felt we shouldn't press him too much. As parents we automatically have a tendency to move in a path to make our children feel better. So we did as he asked, and tried to avoid talking

about his situation. We tended to emphasize the good and not push in any direction which would cause Mitch discomfort.

However, I did look after him. I observed him and I checked on his sleeping. If he had a hard time falling asleep, he certainly didn't report it. Early every morning I found him sound asleep in bed, his breathing even. I recalled how, when he came home one summer, I found him sitting late at night in the courtyard with a B-B gun next to the circular fountain. I asked him what he was doing and he replied, slightly irritated, that he was trying to kill the frogs that didn't let him sleep. I pointed out to him that most of the frogs lived in the artificial waterfall on the hill above the courtyard. He could never hope to kill them all. But the frogs definitely made a racket at night. I inspected his bedroom and discovered two vents in the wall adjacent to the courtyard. I couldn't discern any need for air circulation, so I got some insulation material and stuffed it in the vents. The noise level was reduced considerably. The frogs were barely audible. I checked the insulation; it was still in place.

After some discussion, Pat and I decided to go ahead with our trip to Europe as planned. On August 26, 2002, we flew to New York. There we stayed in our apartment near our store on the East side. When we called Mitch, he insisted that we should go ahead with our trip. "I'm fine, Dad. It's your turn to go. Have a good time." On August 30 we left New York bound for Madrid. Both our sons had been to Europe, but for us it was the first time.

~

# News of Death

The death of my mother's mother, Mama Hatty, in 1959 at age fifty-six was the first time I had lost someone dear to me. Seventeen years later, my father's father, Tito, died; he was seventy-five. A little over three years later I had to face a premature death. We lost Pat's brother. He was twenty-six. His loss was deeply felt.

Up to that point, I hadn't understood how remarkably lucky I had been. I hadn't thought about what an incredibly privileged life I had enjoyed. My mother's mother died when I was eight. My father's father died when I was twenty-five. Although we had been very close, it seemed normal that they went when their time came. Tito was the oldest in our family at the time. When the natural order was being followed, death was easier to accept. It is different when a young person dies; there is anger, and a deep feeling of being cheated.

Our emotions evolved in a process of natural selection; these emotions, the good and bad, help us survive and pass on our genes. We try to avoid emotions that feel bad, and we promote situations that result in good feelings. We share some of our most basic emotions, like fear, anger and sexual attraction, with fish, amphibians, reptiles, birds and our fellow mammals. Others, like hate, embarrassment and guilt, are probably fairly typical of *Homo sapiens*, but perhaps are shared with our close brothers the gorillas and chimpanzees. Hate, embarrassment and guilt can be seen as emotions that help us fit better into a social landscape, which, since we are social animals, helps us survive and reproduce. Other emotions, like elation and inspiration, might be a little more difficult to put into this simplified scenario, but still similar points could be argued; chiefly, that these emotions help not only the individual but the group. Each individual, according to their experience, activates emotions as a response to environmental or social situations. The threshold at which each emotion is triggered, as well as its intensity also varies between individuals and according to experience.

When the brain detects an emotion, it is experienced as a feeling. Each emotion is experienced differently, each producing diverse sensations, some of them, very clearly reflecting our changed state, manifested as particular physical feelings. Emotions are states of the body and the brain produced by slight chemical changes. Still, how do you explain grief? It is very different than depression; it is unlike being very sad. Grief is a cauldron of negative emotions, boiling under the surface, all clamoring to be attended to, and overwhelming us.

Grief is a long and arduous process, different for everyone, and involving almost all emotions. Grief is hard work and much effort expended daily to stay alive in a semblance of normality. Grief is a process in which you need to revisit all your emotions: denial, anger, frustration, fear, guilt, despair, selfishness, lowered self-esteem, love, hatred and sadness. Each person faces all these emotions, one by one, in different order, with different intensities, and with different timetables allocated to each of them. It is a process that can work in fits and starts; you deal with one emotion for a while, anger for example, then slip into a different mode and deal with another (frustration), then another (denial), then return to the first. If there is anger, one must work out the reasons, real and imagined for this anger, until the anger subsides. If there are feelings of fear or frustration, the same holds true. All emotions, one at a time, have to be dealt with and methodically put into a new perspective. Nevertheless, each emotion has to be scrutinized, analyzed, and dissected until one comes to terms with it. Historically, the loss of someone close, generally kin, from an evolutionary point of view, is indicative of a real threat in the outside world. Emotions are triggered to guide us in finding a quick response to the changing environment. When we lose kin, it might indicate that our emotions were not triggered appropriately. Otherwise, we would have acted and prevented this loss. The grieving process is part of a recalibration process so our emotions might be activated at different thresholds in the future.

It is important to be surrounded by people that are also going through this process; the people that also loved the lost one. They can more readily and easily relate to you. They can share and aid reconstruct the real reasons for each feeling, and help come to terms with each one. With some emotions, it can be at times a rather straightforward process.

Other emotions are much more difficult to discern. Grieving is a process that can take minutes or years for each emotion. Grieving is this process you grind out through time, and emerge a different person; a person with his emotions readjusted to survive better in the face of whatever caused the terrible loss, perhaps just a small change in the environment. It is an adaptation mechanism that helps to deal with the ever-changing threats to us, and our loved ones. At the very minimum, it is a sign that reminds us of our own mortality. In short, grieving is a brutal process that shocks us into changing our emotional landscape to better fit the world we live in. This, of course, is under the reasonable assumption that the near future will be somewhat similar to the near past. And this, in our modern world, is definitely not always the case.

When the grieving process is over, only sadness remains. The sadness can never be completely resolved, as the loss can never be recovered. That is death. The sadness slowly recedes in time, but never quite disappears. This sadness, or should we say the fear of this sadness, is what will propel us to much greater efforts to protect our loved ones and ourselves in the future. This is why, for some people, some forms of loss are easier to get over than other losses. Some losses are inevitable

and perhaps natural. Some losses can never be explained and this makes it more difficult to reach a new recalibration of our emotions. Some people never get over them and they stew in frustration, anger, hatred or guilt for very long periods, occasionally all their lives.

During the eighteen hours of driving and flying to the hospital to see my sister before she died, I thought that my role was basically a supportive role for my mother and my sisters. Perhaps a part of my role would be to relieve Pelusa, my oldest sister, from the grueling vigil she had been sustaining. I had not prepared in any way to face the enormous grief that overcame me. Before I even started grieving my sister's death, even before she died, the first emotion I had to deal with was anger—anger at the incompetence of the doctor, at the nurses, the hospital, whoever was to blame for this tragedy, for this gross negligence in care taking. My sister had gone to the hospital for cosmetic surgery, unneeded surgery, and she simply wasn't going to go back home. I quickly had to go through the anger, and dismiss it: it was not going to help in any way; it was not going to change anything, and more important, wasn't going to give me my sister back. There was nothing to be gained by accusing or pursuing anyone, and slowly the anger subsided.

That afternoon, shortly after Minnie died, I ended up at my mother's apartment. My father was there too; he had come to shower and change his clothes. Suddenly, I found myself alone with my parents for the first time since they had separated when I was fifteen. As I heard them talking softly to each other about their loss, I came to see how enormous it was, and slowly through their eyes and comments, I began to realize how huge and permanent my own loss really was. I excused myself, as I was overwhelmed emotionally, and went to take a shower. I felt that they needed me to be strong and give them support. Under the shower I let my grief come to the surface. First, came the feelings of impotence—impotence to anticipate, impotence to protect my sister, impotence to save her, impotence to change anything, impotence to shield my parents from their grief. Over the next few days I would have to come to terms with this impotence. After all, there was nothing I could change.

At some point that evening, during the wake, the thought that at least Minnie could feel no pain, no grief, no impotence, nothing, began to give me some solace. Whether there was nothing or whether there was anything after life didn't matter; either way, surely my sister would be at peace. The pain was for the living, not the dead. We, the ones left alive, had to care for and succor each other. The pain was a confirmation we were here and she was not. Slowly the selfishness of my feelings showed up: the selfishness that I would never hear her laugh, that she would never call my children on the phone and playfully ask, "Who loves you, baby?" The selfishness of all the fun I would never have with her; of the conversations that would never take place. The selfishness I felt when I thought she would not cook me any more meals. In the next few days, as I accepted her loss, the selfishness receded in proportion to the acceptance, but there was this hole. It felt like a big hole in my stomach. It was as though I look at myself in the mirror and there was this

hole in me, which you could look right through. Slowly, I got used to the hole. It didn't go away or get smaller; I simply got used to having it; like a big scar it would always be there. Eventually, I was able to feel comfortable about the hole that would be with me forever. There are times in life, when we have to let go and live in the present; not the past, and also stop anticipating future lost happiness.

As we, my siblings and family, shared our feelings, reaching out to all our loved ones and those that loved her, we slowly emerged from the dark shadows. We emerged slightly changed by the experience; more aware of our mortality, more aware of our insensitivities to each other in the past. We all came out of this terrible experience with a deeper commitment to being and staying closer than before.

A few months later, my son Mitch died.

Pat and I were home in Carmel. I had a bad feeling for more than twenty-four hours before we received the terrible call. The previous day at three-twelve in the afternoon, Eastern Standard Time, I had the urge to call Mitch. Pat had talked to him about an hour earlier. He had gone to our apartment in New York. There was no answer. The answering machine picked up. I had an uneasy feeling, difficult to describe, a sort of anxiety, a sensation that something wasn't right but without knowing what. I left a repeated message, "Mitch, pick up. It's your father. Mitchell, if you're there, pick up!"

Mitch didn't answer the phone. He failed to pick up. Later that afternoon, when Donaldo got to the apartment, Mitch still hadn't shown up. I suspected something was very wrong. Mitch had mentioned to me that the cold water of the ocean always made him feel good when he went surfing. I was afraid that he might have walked to the East River, just a few blocks away, and then somehow, decided to go for a swim, hoping that the cold water would make him feel better. The police can't get involved in searching for a missing person until the person has disappeared for more than twenty-four hours. They explained, when Donaldo reported him missing, that if they searched for everyone that disappeared for a few hours, they would be overwhelmed and that would be all they could ever do. And so, after the official twenty-four hours, the next day at around seven Eastern Standard Time, the police called us. They informed us that they were at our apartment and wanted to ask us a few questions that might help in the search. As they were asking my wife routine questions, I was following the conversation by listening to her answers, and she suddenly hung up.

"What happened?" I asked.

"I don't know. They were talking to Donaldo. I heard someone ask, 'What is there?'"

"A closet."

"And that door there?"

"It's a stairwell that is never used. We employ it for storage."

"Then I heard a scream, and the officer said, 'I'll call you right back.' And he hung up."

"What kind of a scream?"

"Like a long piercing scream. I wonder why the police would scream?"

“The police don’t scream.”

I got up and stepped outside onto our terrace. At first, there was denial. I had to walk and breathe deeply and repeat to myself that this, my most terrible nightmare, might be real—that he had been in the stairwell since yesterday. I thought about my call to him the previous afternoon when I got the answering machine. Not even a farewell was I allowed.

The previous morning, when I had talked to Mitch, my last words were, “I’ll see you tomorrow.” He was supposed to be arriving home this day. He hadn’t shown up. He was supposed to start some therapy . . . My first thought was that I should trade places with him. I was supposed to die before him. There was still so much for him to do, to experience, to achieve, to give the world. If only there was some way that I could be in the stairwell, and he on my terrace. If there was a way to do that, I wouldn’t have hesitated, but there wasn’t. I was still here, and he would never show up.

Then, guilt immediately overcame my whole being. Just as quickly, I pushed it away. I had been as good a father as I could be, better than most fathers I knew. I remembered one of my nephew’s words, “I wish my father got along with me the same way that you do with Mitch and Freddy.” I felt rather than knew I couldn’t have done anything different. I was vaguely aware that it was ignorance, my ignorance of the seriousness, and my ignorance of the nature of his condition. Because of my ignorance, it could not be my fault; I hadn’t known any better. Yes, it was true that I failed to protect my son; he was dead. But the failure was due to lack of knowledge. I could only change my ignorance in the future. I could only seek to learn and understand how this had happened and help others protect their loved ones. Also, then, I realized that, as in the case of Minnie’s death a few months before, I had a task. I had to see everyone through this. In a strange way, my grief after my sister’s death prepared me for this ordeal. But, at that moment, I simply wasn’t aware of how tough it was going to be.

I returned to the table where my wife sat. She seemed terribly calm and collected. The phone rang. It was the police. Indeed, they had found him in the stairwell of our apartment. My wife hung up. She asked me to call someone in New York to take care of his body. I nodded.

Griselda, our housekeeper, walked in. “Mitch is still not answering his cell phone,” she told us.

I uttered the words for the first time, “Mitchell is dead, you don’t need to worry about calling him anymore,” and started crying. I could not bring myself to repeat those words, “Mitchell is dead.”

In quick succession all kinds of emotions spilled forth—impotence, guilt, fear, sadness, anger, longing, pain; an indescribable pain; a pain there are no words to explain, the pain of grief. I had to bring myself under some semblance of control. I had to help the others get through this.

I needed to call Katie, Mitch’s girlfriend. We had contacted her repeatedly as we searched for Mitch that last day. I wanted to make sure that she was not blaming herself, then or ever, for thinking or feeling that she could have done something

differently. I called her on her cell phone. She already knew. I made her repeat after me that she was not to blame; that there was nothing she could have done differently to change the outcome; that the outcome had nothing to do with her. It was a brain attack, like a heart attack.

I called Donaldo. He was in our apartment with the police and had discovered the body in the stairwell. Donaldo had been one of the last people to see Mitch alive. I made sure that he understood firmly that he was not to blame either.

Having done that, having taken care of the immediate needs of the living, I pondered my next move. My wife asked me if I was in condition to call New York to take care of Mitch, or did she need to do it? She was icy calm. I called a cousin, then a friend in New York, told them the sad news and enlisted their help. For the next two hours I could not bring myself to call anyone else, I simply could not do it. Neither could my wife. I felt internal waves rising to drown me, except that I couldn't swim, but had to endure as I realized that I could breathe. Breathing under water was difficult.

Finally, I thought I would call Susana, the more spiritual of my sisters, she might be better able to help. Her daughter Othiana answered—her parents had gone to the movies. I could hear four-year-old Manek shouting to his older sister, "Who is calling?" After she told him who was calling, "Let me talk to Mitch, pass me Mitch," he squealed delightedly. I simply said I would call later and placed the phone in its cradle. A few minutes later, I called Pelusa, my other sister, and fortune would have it that my brother-in-law Rogelio answered. Why hadn't I thought of that? Better to talk to my brother-in-laws, then they could talk to my sisters. I began to recount what had happened, but before I could finish, my sister was on the phone wanting to know if I was certain. And so the word spread. My worst nightmare was real; one of my children was dead.

I talked to my father, then my mother. A cousin called us.

I called Freddy and told him to come home. He was living in San Francisco. I told him I had bad news and that I preferred to deliver it in person; for him to come home. That was the worst.

A few friends started showing up at our door. A friend of Mitch's called, "I just heard. I don't know what to say."

"Say whatever you want, don't worry," I responded gently. I tried as hard as possible to help others.

Mitch's girl friend's dad, Tracy, appeared at our door. "Come in." I said, "I just finished talking to Katie. I told her, I made her repeat to me, that she cannot blame herself for anything. That no matter what she thought, she can never go to that place. She can never blame herself. There is nothing she could have done differently."

"Thank you," Tracy answered. We sat in silence at the breakfast room table.

I saw my old Beatles music book open on the piano. Mitch had written a few notes on scraps of paper, probably working on new lyrics. I apparently wrote some fragments down. I recently found a piece of paper with my handwriting and I know it was written that night. It says:

*7:45 He saw he had many fears, he saw the future and it was all full of fears. He had the courage to face them all. He did what he had to do in their face. No man can be braver than that.*

On the back it says:

*8:20 The perfection of the soul is to understand and stand back and permit the soul to grow more and more. And come back and grow more and more. And come back, until the soul can stand back and let it be! The road is winding and always leads back to you!*

My wife called her mother. Now, they both had lost a son named Mitchell.

My children's friends showed up, and I don't know how many times I had to help them pull themselves together. I felt as if they had fallen and I was picking them up, pushing their legs under them, and leaving them balanced precariously. I would say, "Mitch left us a great pain, but we are strong and healthy. We are many. Each one of us has to take a little of that pain and heal it. His pain is now our pain. It is our duty to make it go away."

The waves kept coming relentlessly trying to drown me. After two days I went from "I felt alright for one minute today," to feeling all right a few minutes a day. Eventually I was able to feel somewhat well for a few hours a day. It was a steep climb uphill, requiring daily effort. Fortunately, when I was falling deep into the abyss of grief, my wife was climbing uphill; and when she plunged, I pulled upwards. Surprisingly, we didn't crash together; we simply took turns. My experience of Minnie's recent death allowed me to know that I would eventually emerge and live again. However, I was not prepared to feel the brutality, the permanence and the intensity of my grief. If grief could be plotted in a logarithmic scale from one to ten, where every number indicates twice the intensity than the previous one—where three is twice two, and six is twice five—when my grandfather died my grief would have been a six. When my sister died my grief would have been an eight. When Mitch died my grief was a ten. If there is a higher grief, it would surely kill me.

The next few days after Mitch's death witnessed the gathering of the clans. They gave us strength. They erected fences to protect us. Some of Pat's family arrived first, as they lived closer. Some of my family arrived shortly afterwards. Friends streamed into our home. For the next few nights more than a hundred people would gather nightly to have dinner with us. The hardest would come later when we would be forced to face our griefs alone.

The selfishness of not having Mitch's love and admiration is one of the last feelings I battled with. To not hear his laugh, to not see his smile, to not reflect in the gleam of his eyes, to not hear his music, to not feel his supple power and his presence; to know that he no longer walks on this planet. The hole in my stomach looks huge. It feels like you can easily pass a melon through it. It is always there—this hole. I am slowly getting used to it. It doesn't bother me so much to look in the mirror. It is now, this hole in me, a part of me. I am amazed at the vile intransience of this change in my life.

I received a few of his personal belongings: his wallet, with the name and phone number of a couple of people to call in case of emergency; a few pictures he had taken to New York with him; his watch, a Cartier we gave him for his graduation a few

months before. His watch enigmatically was set seven hours behind Eastern Standard Time. I didn't understand the significance of this, if any. I put the watch on and I left it unchanged, reading four hours behind California time, I presumed somewhere east of Hawaii in the Pacific.

Mitch left a small book on his bed in the apartment in New York next to his watch. The book is the *Companion Book to the Four Agreements* by Don Miguel Ruiz. He left it marked on chapter six. I don't know if the marker indicates that he was reading the book and was starting chapter six; or whether he had just read it and was studying its implications; or perhaps, more importantly, whether he purposely marked it right before he died as some kind of message, as he might have done with the setting on his watch. I simply can't know. But whatever the case, the concepts in that chapter were helpful, both to the grieving process and to understanding suicide.

Ruiz maintains, that as life moves through an ever-changing universe, in our minds we resist change. We try to stop things from changing and become attached to our past. Life is what is happening; death is what is not happening. Whatever happened before is no longer happening now. We carry the memories of our life knowing that they are dead moments, yet they affect our lives. Memories are of events that happened, but these are not happening anymore. We keep death alive because we attach to what is dead, but death doesn't really exist. Only Life, only Creation exists.

In Toltec mythology, Ruiz explains, the Angel of Death teaches us to live in the present moment, the only thing we have. The Angel of Death is always next to us; it takes everything away little by little. But for everything the Angel takes, Life gives us something new. If we become attached to what the Angel takes away, then we cannot receive the gifts of Life. We need to learn to detach. Detachment doesn't mean that we stop loving someone; it only means that we accept that there is nothing we can do to stop the transformation of Life. Attach-detach.

When we are children, we always live in the present moment; we don't worry about the future, and we don't care about the past. Attach-detach. Children accept the transformation of Life, as animals do. Domestication teaches us to live in the past and to use this knowledge to project into the future. By mastering attachment-detachment, we learn to keep our attention on the present. Attachment helps us to live our life intensely in the present moment. Detachment helps us not to be attached to the past. We can detach from the agreements and beliefs that limit the expression of our creativity and our love. This frees our energy to create a new dream. And what we create is a masterpiece of art: our own life.

For anyone that is grieving and feels the depths of despair, I can advise you that with the help of loved ones, with honesty and will, slowly you will become whole again. The hole is always with you, but eventually you do emerge and join the living, enabling you to enjoy, sometimes, life fully again. Attach-detach is helpful. One needs to live in the present. One needs to detach from the past. After every sunset there is a sunrise.

One of the most noticeable changes that I could detect in myself as I emerged from my grieving was a shift in the emotional content of music. Where before Mitch's death, romantic songs of the type "I can't live without you," or "life has no meaning when I am not with you," or "you are my light," instead of evoking a romantic image of a loved woman, or my wife, evoke a terrible sadness and longing for my son. Another change is that anything relating to saving something, the birds or the environment, or even a cartoon character, produces a strong emotional reaction in me, whereas before it produced only an intellectual reaction. Grieving changed not only the threshold of some emotional triggers, but also the type of emotion triggered by some events.

Four months after Mitch's death I met Osbaldo. He is an interesting example of the changes that grieving can produce. He was a pleasant, engaging, thirty-three-year-old man. He knew about Mitch, and he said to me, "When I was eighteen, I was very depressed and suicidal. I couldn't perform in school; my grades were terrible. I couldn't get anything done. I was on a suicidal watch on and off, depending on the various threats I openly expressed. Everyone was worried about me, even my younger brother Alejandro. He was the star of the family; I was the black sheep. He was doing great in school and had a girl friend. He was the happy-go-lucky guy. I was seeing a therapist, but I felt it wasn't helping. I felt that if I died it didn't matter. Then one afternoon, my brother and I were the only ones home, and I heard a blast in our bedroom. I ran in, and found my brother dead. He used my shotgun, put it in his mouth, and blew his brains out. Fortunately, my mother wasn't home and didn't have to see him. Nobody had a clue. Alejandro was seventeen."

"If you were suicidal, how come you had a shotgun?"

"I had it from before, and I had hidden it in my closet. Only my brother knew. I was so upset at my brother's death. I grieved him terribly. But, interestingly, through my grief, as time went by, my depression lifted, my suicidal thoughts disappeared. I have not been depressed or suicidal ever since. My mother was completely devastated. She couldn't even leave the house for several years."

Normally, grief, when not properly dealt with, can lead to depression.

Yet, the grieving process is so strong, that in this case, it readjusted Osbaldo's emotional makeup to such a degree that his depression lifted.

Many marriages that have lost a child to suicide do not survive. It is commonly explained that the loss was too great. In my experience, it is not the huge loss, but rather, when both spouses, each in their own way, go through the grief process, they revisit many emotions and perform a deep introspection. It is part of the natural process to question profoundly many past experiences and beliefs; without grieving, perhaps this introspection would never have been done. In many cases, this questioning reveals previous frictions and dissatisfactions that ultimately can lead to a divorce.

## Depression and Manic Depression

*It is very important to understand mood disorders because, roughly eighty per cent of suicides are related to depression. According to the Manual, Mood Disorders are characterized as having a disturbance in mood as the predominant feature. The DSM-IV-TR manual divides this section into three parts. The first part describes mood episodes, which do not have their own diagnostic codes, but are useful as they serve as the building blocks for disorder diagnoses. The second part describes the Mood Disorders. The criteria sets for most Mood Disorders require the presence or absence of the mood episodes described in the first part. The third part includes the specifiers that describe either the most recent mood episode or the course of recurrent episodes.*

*Major Depressive Episode: its essential feature is a period of at least 2 weeks where there is either a depressed mood or the loss of interest or pleasure in nearly all activities. The symptoms must persist for most of the day, nearly every day. The person describes the mood as depressed, sad, hopeless, or discouraged. Many individuals exhibit increased irritability. In children and adolescents, an irritable or cranky mood may develop rather than a sad or dejected mood. Loss of interest or pleasure is nearly always present. In some cases there is a significant reduction in sexual interest or desire. Appetite is usually reduced, but in a few cases it might increase and crave specific foods. The most common sleep disturbance is insomnia (not being able to fall asleep). But it can be middle insomnia (waking up in the middle of the night), terminal insomnia (waking up too early). Less frequently there is oversleeping (hypersomnia).*

*Psychomotor changes include agitation (not being able to be still, pacing, rubbing skin, etc.) or retardation (slowed speech, thinking or body movements, pauses, muteness, etc.). Decreased energy, tiredness and fatigue are common. A sense of worthlessness or guilt can be present and many report impaired ability to think, concentrate or make decisions.*

*Frequently there might be thoughts of death, suicidal ideation, or suicide attempts. The range of thoughts can go from a belief that others would be better off if the person was dead, to transient but recurrent thoughts of committing suicide, to actual specific plans of how to commit suicide. The frequency, intensity and lethality of these thoughts can be quite variable. Although these behaviors are associated with suicide attempts and may be helpful in identifying a high-risk group, it is not possible to predict whether or when an individual with depression will attempt suicide.*

*A Major Depression Episode is especially difficult to diagnose when an individual also has a general medical condition (cancer, stroke, diabetes, etc.). Also, present frequently are tearfulness, irritability, brooding, obsessive rumination, anxiety, phobias, and excessive worry over physical health and complaints of pain. During a Major Depressive Episode, Panic Attacks that occur in a pattern that meets criteria for Panic Disorder are common in some cases.*

*Manic Episode: defined as a period during which there is an abnormally and persistently elevated, expansive, or irritable mood. This period of abnormal mood must last at least a week. This mood disturbance must be accompanied by at least three additional symptoms: inflated self esteem (ranging from uncritical self-confidence to marked grandiosity), decreased need for sleep, pressure of speech (speech is loud, rapid and difficult to interrupt), flight of ideas (much faster than can be articulated), distractibility, increased involvement in goal directed activities (excessive planning or participation in multiple activities), or psychomotor agitation, or excessive involvement in pleasurable activities with a high potential for painful consequences. If the mood is irritable, then at least four of the above symptoms must be present. Some individuals report having a much sharper sense of smell, hearing or vision. Mood may shift rapidly to anger or depression. Depressive symptoms may last moments, hours, or, more rarely, days.*

*The elevated mood may be described as euphoric, cheerful or high. Although the person's mood may initially have an infectious quality, those that know the person well recognize it as excessive.*

*Some individuals with a Manic Episode don't recognize that they are ill. They may engage in activities that have a disorganized or bizarre quality. When the Manic Episode passes, most individuals are regretful for their behavior.*

*Mixed Episode: is characterized by a period of at least one week in which criteria for both a Manic Episode and a Major Depressive Episode are present nearly every day. The individual experiences rapidly alternating moods accompanied by symptoms of Manic Episode and Major Depressive Episode.*

*Hypomanic Episode: is defined almost the same as a Manic Episode, except that the duration of the mood lasts at least four days, and in the list of additional symptoms, delusions and hallucinations are not present. In contrast to a Manic Episode, a Hypomanic Episode is not severe enough to cause marked impairment in social or occupational functioning. The change in some might take the form of increased efficiency, accomplishments or creativity. Flight of ideas is uncommon and, if present, lasts for brief periods of time.*

*The essential feature of Dysthymic Disorder is a chronically depressed mood that occurs for most of the day more days than not for at least two years. Because these symptoms have become so much a part of the individual's day-to-day existence, they are often not reported (i.e., "I've always been this way").*

*Bipolar I Disorder: the essential feature is a clinical course that is characterized by one or more Manic Episodes or Mixed Episodes. Often individuals have also had one or more Major Depressive Episodes. Manic Episodes generally occur immediately before or after a Major Depressive Episode in a characteristic pattern for a particular individual. Recurrence is indicated by a shift in the polarity of the episode (when Depressive changes to Manic or Mixed or vice versa) or an interval between episodes of at least two months without symptoms.*

*Major Depressive Disorder: is a clinical course that is characterized by one or more Major Depressive Episodes without a Manic, Mixed, or Hypomanic Episode. There is the distinction between a Major Depressive Disorder, Single Episode, and a Major Depressive Disorder, Recurrent. For this manual an episode is considered to have ended when the full criteria for the Major Depressive Episode have not been met for at least 2 consecutive months (Full Remission.).*

*Bipolar II Disorder is the same as Bipolar I, except that instead of Manic Episodes the individual suffers Hypomanic Episodes.*

*Completed suicide (usually during Major Depressive Episodes) is a significant risk, occurring in 10%-15% of people with Bipolar I Disorder or Bipolar II Disorder, and 20% of people suffering Major Depressive Disorder.*

*Cyclothymic Disorder: The essential feature is a chronic, fluctuating mood disturbance involving numerous periods of Hypomanic symptoms and numerous periods of depressive symptoms. The hypomanic and the depressive symptoms are of insufficient number, severity, pervasiveness or duration to meet full criteria for Manic Episode or Major Depressive Episode respectively. However, it is not necessary that all hypomanic symptoms meet the criteria for a Hypomanic Episode. In the first two years any symptom-free intervals last no longer than 2 months, and this two-year period is free of Major Depressive, Manic or Mixed Episodes. After the initial two years of the Cyclothymic Disorder, Manic or Mixed Episodes may be superimposed, in which case both are diagnosed.*

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I share this I read to give a better feeling of the tremendous emotional roller coaster that some people suffer. Andrew Solomon, in his book, *The Noonday Demon, An Atlas of Depression*, chronicles the following from a bi-polar friend, “She was in Austin, Texas because that was where her boyfriend lived, but she was somewhat isolated and bored there. She had been too depressed to work, though she was interested in government service and hoped to get a job in the Texas statehouse. She told me she had taken Prozac, Paxil, Zoloft, Wellbutrin, Klonopin, BuSpar, Valium, Librium, Ativan, and of course, Xanax and was now on several of these as well as Depakote and Ambien. She was having trouble with her supervising psychiatrist, “so—guess what—off to doctor number forty-nine,” she wrote in her letter.

Solomon answered her back, and next heard from her a month later. “The Depakote is not proving itself,” she wrote. “I am frustrated by memory loss and shaky hands and stuttering and forgetting the lighter when it has taken me forty minutes to compile the cigarettes and the ashtray anyway. I am frustrated because these diseases seem to me so blatantly *multipolar* in many instances—it makes me wish Levi-Strauss had never brought our attention to binary opposition. *Bicycle* is about as far as I’ll go with the prefix. I am convinced there are forty different shades of black and I don’t like looking at this in a linear scale—I see it more as a circle and a cycle where the wheel is spinning too quickly and a desire for death can enter through any spoke. I thought of checking myself into the hospital this week, but I have been in there enough to know that I would not be allowed a stereo even with headphones, or scissors to make Valentine’s Day cards, and that I would miss my dogs, and that I would be terrified without and would miss terribly, Peter, my boyfriend, who loves me through all the vomit and anger and unrest and no sex and that I would have to sleep in the hall by the nurses station or be locked in a room on suicide watch and

so on—well, no thank you. I'm fairly confident that with the meds keeping me equatorial—between the two poles—I'll be okay."<sup>11</sup>

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Diagnosing a particular Mood Disorder can be difficult at times for various reasons, especially when the border between mild and normal can be blurry. And ultimately, since the mechanisms causing Mood Disorders are poorly understood, the solutions proposed, work poorly.

After Mitch graduated from college and spent a couple of months working in Santa Barbara, he came back home looking for the peace and quiet of Carmel Valley. He arrived with his dog Colby and all his belongings in early August. He had quit his job doing engineering computer drafting, ostensibly because it triggered his panic attacks. I had, over the years, occasionally discussed with him whether analytical thought in general, and math and physics in particular, could be a cause (as he claimed) of his "anxious" feelings or associated with them (as I claimed), because when he first experienced these bad feelings he had been doing math; the math was a trigger. However, at this time, whatever it was, we both agreed that his being home with no stress or pressure would definitely improve his condition.

Just a few weeks ago he had excitedly called me on the phone, "Dad, you won't believe this. They are paying me eighteen dollars an hour to do computer graphics! I have my own office; even my own phone, and a secretary that will bring me coffee. This job is unreal, I am so lucky."

Where had all that enthusiasm gone? How can you go from there to this sad state in a few weeks?

Depression, especially the first episode, can be triggered as a reaction to life events. However, today's prevailing view is that it is more a mixture of reactive and internal factors. How much is reactive and how much internal, probably varies widely among individuals. In Mitch's case, his first panic attack, could only, if seen from this point of view, be caused by the stress caused by his scholastic burden. Depression didn't even seem to be a part of the picture at first. However, Mitch had been diagnosed as moderately depressed, and consequently, depression had to be factored in as part of his condition. But to me, then, he didn't seem depressed. Suicide, at this point, was not even contemplated as a possible protagonist in the picture. Suicide, in my mind, was vaguely related to extreme cases—cases where suicide could begin to be thought of as a form of relief. I couldn't sense anything remotely like this in Mitch.

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<sup>11</sup> Andrew Solomon, *The Noonday Demon*.

Depression can be recurring, and can be, more likely than not, triggered by outside factors. Over time, the cycling will take a life of its own, and depression will be triggered internally. The sooner the depression is attacked, the more likely the cycle can be broken. The best attack is a combination of medication and therapy.

In the past, Mitch had seen a couple of doctors who tried to find the cause of his depression. They would look for life-shattering events, like “when you saw your mother killed on the railroad tracks”, or “when your father sexually abused you,” or “the time when your younger brother drowned while under your care,” and so on. No such event marked Mitch’s life. His childhood had been relatively happy and tranquil. Because of his negative previous experiences with psychiatrists, he resisted seeing a therapist, as I suggested.

Mitch was never depressed in the stereotypical way that we sometimes think about severe depression. He was never in a state that he couldn’t get out of bed in the morning, or couldn’t cut his own meat, or laid in a fetal position crying uncontrollably. He never fell into a prolonged situation where day in and day out he was incapacitated for weeks at a time. He finished college, held jobs, had managed to move back home. He just seemed anxious, perhaps slightly agitated.

Mitch started working in our office and warehouse, doing familiar tasks. His plans to go to Spain to start work on a post-doctoral degree had been postponed because of the job he had taken earlier that summer. My wife and I were still planning to go to Europe at the end of the month. We considered canceling our trip a few times, because we both could tell that Mitch was not his normal self. We were worried about him, but when we both, separately, talked to him, he repeatedly told us he was much better and getting better every day.

By the end of August Mitch seemed closer to being his fabulous self. He was surfing every day and playing his music down in the basement. He had a microphone, a keyboard, a guitar and a piano, all hooked up to his computer to record his own compositions. He also had a computer program that he could program to play other instruments if he felt he needed them. He would go out every other day with his friends, skateboarding, chasing girls, doing everything that young men do.

But, he seemed quite distracted. The other outward sign that something was amiss, perhaps, was a bad case of acne, which seemed to be getting worse. Over the years he had battled with acne once in a while, so I thought it could just be youth and normal hormonal changes. But I also worried that this might be a reflection of some internal struggle he was waging. Overall, the things that were troubling him seemed to be within the range of normal for a young man: finding a soul mate, a wife; finding meaningful employment or pursuing a career with further studies; the insecurities of not having been self-sufficient yet and wondering if he could be so; the yearning to leave the parental nest, but fearing the uncertainties of doing so. In short, the things that concern us as parents, but which, at the same time, we know our children will have to learn on their own.

Mitch's friends, at least the ones he hung out with the most, when asked in a cursory way, didn't think that there was anything wrong with him. I didn't press them, primarily to avoid embarrassing Mitch.

So, with whatever reservations we had, my wife Pat and I decided to go ahead with our trip to Europe as planned. On August 26, 2002, we flew to New York. There we stayed in our apartment near our store on the East side. On August 30 we left New York bound for Madrid. Both of our sons had been to Europe, but for us it was our first time. We looked forward to making the best of it. We spoke to Mitch the day we left; he insisted he was fine.

My sister Minnie's death was only a couple of months behind me. I was oversensitive to issues of life and death, and also attached a disproportionate emotional significance to communications with my surviving sisters. Therefore, when my sister Susana, referring to her past life as a Cardinal in Seville and my associated thoughts of Segovia, had told me to be alert to the year 1474, I had listened with special attention. She had also explained to me, that generally, other signs would be around to confirm her or my previous life. I had promised her I would do that. My son's suicide, a couple of months in the future, was not even suspected as a remote possibility.

On the plane from New York to Madrid, brushing up on some of my Spanish history, I came across Queen Isabel La Catolica. There it was: her coronation took place in Segovia in 1474.

A couple of hours after Pat and I arrived in Madrid, my cousin Carlos and his wife Lupe joined us, having flown from Mexico. The next day, Sunday, we visited Toledo. On Monday we went to Avila and Segovia. After having an extraordinary lunch next to the Roman aqueduct in Segovia, we went to the Alcazar (Moorish Palace) where Queen Isabel had been crowned. There, we were taken to her bedroom. In the Queen's chambers our guide asked, "Can anyone tell me what is missing in this bedroom?" I knew he was referring to the bathroom. Adjacent to the bedroom was the Throne Room, the biggest, most ornate and spectacular room in the Alcazar. The strange feeling that I had been there before was overpowering. I also knew that the bathroom was on the opposite side of the Throne Room. I couldn't help the feeling that I was somehow connected to these chambers. It was a classic case of *déjà vu*.

The bathroom was cantilevered, built overhanging the huge cliffs on which the castle had been built. There was a small hole in the floor, which allowed the excrement and urine to fall freely down into a ravine far below the cliffs. The bathroom had a breathtaking view looking out on the valley below. In the valley you could clearly see a monastery. Pointing to it I asked our guide, "What is that building down there?"

"It is the Convent of Vera Cruz," he answered. My sister Susana's husband, Othon, was born in Veracruz, Mexico, across the Atlantic.

As I thought about this coincidence and what my sister had told me, I found the idea that I might have been Queen Isabel in another lifetime amusing. Less amusing

was the possibility that if so, I would, in all probability, ordered the murder of an important Cardinal who opposed the Inquisition. What would Susana think when I conveyed this to her?

Thinking that my sisters and I had lived previous lives together was a comforting thought. Even if it was just a romantic idea, it felt good to believe that the love between my sisters and I had been forged through many previous lives.

If I had been sensitive to life and death issues before my trip to Europe, after my son's death I am ever more so. In a strange way, the illusion of having shared with Mitch many things in other lives was comforting. The desire to stay connected to him was overwhelming, and the romantic notion of being with him again, in a potential future life, was an attractive thought, even if it was an exercise in futility.

After our return from Europe, thinking back to Spain, I had relished the idea of sharing all my impressions with Mitch, especially about my changed outlook on life after my sister's death. I never got the opportunity to discuss it at length. I was worried about other, more important things. Mitch was not his usual self. He was fidgety and easily distracted. It was hard to see it, but he seemed to be worsening some days, others improving.

In October, a few weeks before Mitch's death, I tried to talk to him once about his panic attacks. He dismissed it as something in the past, that hadn't happened in a long time. "I just feel anxious, that is all. Some days more, some days less. I'll be fine, dad."

Remission from mental illness requires effort and vigilance. We are all susceptible to stress and trauma from the vagaries of life, and Mitch, with his susceptibilities, had to be struggling to do so. I felt the best I could do, while I convinced him to seek therapy, was to reduce his stress by reducing his responsibilities. I was confident that this would improve his situation.

When I began my research to write this book, my recent trip to Spain continuously impinged on my consciousness. I looked for emotional connections; links that would help me bond with Mitch. I started to research the life of Queen Isabel. I found a series of coincidences between her and me. She was born in 1451, I in 1951. She, as I, had green eyes and brown hair. Her son, John, died at twenty-one, my son died at twenty-two. My brother-in-law Mitchell John died at twenty-six. All three died childless. Prince John had four sisters, the same as I.

I could not find a cause of death for John, could it have been suicide? If indeed this was the case, in those days, it would have been considered a mortal sin and would have been hidden.

# Panic Attacks, MRI, Anxiety, OCD

*A*ccording to the Manual, the essential feature of a Panic Attack is a discrete period of intense fear or discomfort in the absence of real danger. At least 4 of 13 somatic or cognitive symptoms accompany the fear. The attack has a sudden onset and builds to a peak rapidly (generally in ten minutes or less) and is often accompanied by a sense of imminent danger or impending doom and an urge to escape. The anxiety that is characteristic of a Panic Attack can be differentiated from generalized anxiety by its discrete, paroxysmal nature and its typically greater severity.

*There are three characteristic types of Panic Attacks: unexpected (uncued—there is no internal or external trigger), situationally bound (cued—almost invariably occurs immediately on exposure or anticipation of a trigger), and situationally predisposed (similar to situationally bound but not invariably associated with the cue and not necessarily occurring immediately after exposure, e.g., attacks sometimes happen while driving and sometimes they don't). Each type is defined by the relationship between the onset of the attack and the presence or absence of situational triggers that can include cues that are internal or external.*

~

I am asleep. I dream I am in my house. It is dark and late at night. I hear a movement or noise emanating from the kitchen. I consciously decide to move in darkness because the intimate knowledge of the layout of my house would give me an advantage over an intruder, and go investigate. My wife is sleeping soundly in our bed and my two sons are sleeping in their bedroom next to ours as I approach the kitchen. I enter the kitchen very quietly, with all my senses trying to perceive what or who is in there. Suddenly, from behind, I feel two steel hands grab me by the upper arms, close to the shoulders. The hands are cold and hard like metal. The pressure is so great that I can barely move my hands below the elbows pressed to my side. As the pressure increases, I am lifted from the floor. I realize that the strength of this grip pressing into my arms and squeezing my arms into my body can easily kill me if increased.

Then, the pressure is slowly increased. At this point I am not concerned with my own fate anymore; I want to yell out a warning, and hopefully my wife and sons will wake up and escape, running away from whatever is compressing me. I open my mouth to yell but no sound comes out!

If I try to describe how I felt in the dream, I would definitely have to say I was having palpitations, sweating, trembling and shaking; I was short of breath; there was definitely discomfort and fear of dying, even if I felt no chest pains, dizziness and lightheadedness (at least four of thirteen of these symptoms have to be present to diagnose a panic attack). Isn't this what extreme fear or panic is like?

The onset was very quick, almost instantaneous. I grant you I didn't feel nausea or abdominal distress, there was no derealization or depersonalization, no paresthesias, I didn't feel like I was going crazy and I didn't have hot flashes or chills. I was simply as scared as I have ever been. Then I woke up.

I experienced nine (five more than required) of the symptoms that are required, so unless the fear was caused by something real, I guess I could say that, at least in a dream, I have experienced a Panic Attack.

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*The occurrence of an unexpected Panic Attack is required for the diagnosis of Panic Disorder (With or Without Agoraphobia). Situationally bound and situationally predisposed attacks are frequent in Panic Disorder but also occur in other anxiety and mood disorders.*

*Agoraphobia: because agoraphobia occurs in the context of Panic Disorder With Agoraphobia and Agoraphobia Without Panic Disorder, its criteria are provided separately.*

*The essential feature of Agoraphobia is anxiety about being in places or situations from which escape might be difficult (or embarrassing) or in which help might not be available in case of a Panic Attack. The anxiety typically leads to the avoidance of many situations and may include being alone in or out of the home; being in a crowd; traveling in an airplane, being in a closet or elevator. In some cases the individual can face the feared situation, but with considerable dread, or can face it if accompanied by a friend.*

*Panic Disorder: the essential feature is the presence of recurrent, unexpected Panic Attacks followed by at least one month of persistent concern about having another Panic Attack, worry about the consequences of the Panic Attack, or there is a significant behavioral change related to the attacks. Panic Disorder should be distinguished from other mental disorders (Anxiety, Mood and Psychotic Disorders) that have Panic Attacks as an associated feature.*

*Specific Phobia: the essential feature is a marked and persistent fear of clearly discernible, circumscribed objects or situations. Exposure to the phobic stimulus invariably produces an anxiety response. The response may be a situationally bound or situationally predisposed Panic Attack.*

~

A few months before I went to Europe, actually a month before my sister's death, I developed, after running one cold morning in May in Central Park, what felt like a muscle spasm under my right shoulder blade. There was a slight tingling in the tip of my right fingers. I thought it would go away in a couple of days. I could control

the level of pain, as I slowly discovered, by lowering my head slightly to my left side. As it turned out, the pain got progressively worse, in spite of acupuncture and some relaxant medication. Later I tried deep massage to relieve pressure on the nerves going to my right arm. Eventually I had a chiropractor cracking my neck in ways that I didn't even imagine were possible.

My condition would get a little better, then deteriorate again. The only control I had over the pain and discomfort was by lowering my head to the left farther and farther in an effort to relieve the pressure on the compressed nerves. The chiropractor told me that if things didn't improve in a couple of months, I should try more aggressive treatments, probably starting with an MRI to determine what might be wrong. At any rate, I decided to go to Europe, as I felt that this, whatever it was, would resolve itself, even though I had been in pain for a little over three months.

The same naivety that I displayed with my Mitch's problems, I showed with my own. The food and wines of France and Spain kept me thinking that I was all right. Certainly, I felt that I was not getting worse, even if I was not improving. In reality, things slowly deteriorated, but the rate was so slow that it was hardly noticeable.

A month later, when I returned to New York, I went running. When I got to a park next to the East River, I stopped to check my shoulder. When I attempted to do some pull-ups on a set of climbing bars, I couldn't even pull myself half way up on the first attempt. I realized how weak my right shoulder and arm was; several muscles were not functioning!

A few days later I got home to Carmel, and went to another, supposedly very brilliant chiropractor who straightened out a few kinks here and there, and incredibly was able to restore some strength to my arm. However, he warned me that if things didn't get better soon, I should seek more aggressive means of therapy.

Next week I was seeing a neurosurgeon. He identified a lesion in a disc between the C-6 and C-7 vertebrae in my neck. He understood my hesitation to do surgery, and he suggested we try some physical aggressive therapy to try to relieve the pressure on the nerves going to my arm. So a physical therapist massaged and stretched my neck; here and there I felt some improvement, but slowly things deteriorated. By late October my triceps was not functioning, and I could barely play tennis, but I kept at it, hoping against hope that doing so might help my own healing powers.

I discussed my predicament with Mitch and suggested that he, just like me, might need some radical procedure. In my case, surgery, in his, psychotherapy of some sort. I made a deal with Mitch since we both needed to heal ourselves that we would do everything in our power to do so.

Pat and I went to Acapulco for a week to my father's annual veterans tennis tournament; with my arm practically paralyzed, I was surprised that I could even play. And Mitch, after seeing a psychologist three times during that week, left for New York. He calmly informed us (by phone) that he had been declared fit. That he was fine. He left the day before we arrived from Mexico. We never saw him again.

After Mitch's death I determined that I had to keep my part of the deal: I still had to heal myself even when he was no longer there to demand I do. I even showed up to my physical therapy appointment in Carmel three days after his death, and still went to see my chiropractor one more time. But my condition got worse. By then I was in pain most of the time, and what little pain relief I could muster was by bending my head down and to the left as far as I could.

My neurosurgeon scheduled an MRI.

At the hospital, the technicians told me to lie down on a long, narrow tray and to lay my head straight back.

"I can't do that. Can't I just lie here with my chin against my left breast?"

"No."

"How long does this take?"

"About twenty-two minutes."

I wasn't sure that I could take the pain for twenty-two seconds, let alone twenty-two minutes; but still, I had promised Mitch I would do whatever it took. What could twenty-two minutes of pain be compared to his death?

"Well, let's try it," I said. I took a deep breath and straightened my head. The pain shot through the back of my shoulder and slowly migrated, extending down my arm. The intensity of the pain quickly increased, but I was motivated: I had promised Mitch I would do whatever it took. Suddenly the technicians slid some grips close to my temples and strapped my head. I could not move my head or neck; I no longer had some willful control over my pain.

I concentrated on remaining calm. Then the tray was activated and I slowly moved into a narrow tunnel, the chamber where the actual magnetic resonance imaging is done. My hands were down by my sides. The pain steadily increased. "Twenty-two more minutes." I thought, "Let's see how tough you can really be."

I saw the plastic edge of the tunnel a few inches above me, and I realized that in such a tight space I could not lift my arms up to my head to try to free it so I could reduce the pain. The memory of the chronic pain, the knowledge that I could not control it, that it would take a couple of minutes to get me out of this tunnel, threw me into a state of panic. A fear like I had never felt in my entire waking life. Even though I tried to tell myself that this is only about physical pain, the panic swelled and escalated very quickly. My heart pounded. I was into the tunnel up to my waist, soon I would not be able to move my legs; soon, perhaps they would not be able to see my feet. I raised my right knee to block further entrance to this horrible tunnel that was swallowing me.

I signaled with vigorous kicks, "Get me out of here."

I heard a very loud voice through the earpieces they had inserted into my ears, "Do you want out?"

"Yes," I signaled by moving my leg up and down as if I were nodding. The tray stopped, then reversed. "Get a grip on yourself," I thought, "Calm down, breathe deep. That's it. Now you know what the deep clutches of fear can do. Now you know

what Mitch felt. What a terrible thing. How can doctors stand by and allow someone to suffer through this uncontrollably? How? Damn it!”

As I slowly emerged from the chamber, the pain returned worse than before. During the panic attack, I had felt no pain. The pain of the fear, the panic, had been all encompassing, much worse than the physical pain.

The technicians came to un-strap my head from its restraints. I quickly moved my head so my chin was touching my left breast. The pain started to subside. “Sorry, guys.” I said amicably as I sat up, “The pain was too much. I couldn’t take it. Maybe with some painkillers I can do this. Can you give me something?” I was determined; I needed to try again and keep my promise to Mitch.

“You need to talk to your doctor for that. They’ll reschedule you.” While I felt like I had let Mitch down, I had a new insight into his problem. I returned next week with three Valiums in me. It didn’t do anything for my pain, the pain was there, I simply didn’t seem to mind the pain too much; and I thought about Mitch. I would get well. I would figure out what happened to him.

It became imperative to understand how psychiatrists organize certain mental disorders. Perhaps understanding this might shed some clues as to why these disorders happen.

~

*According to the Manual the essential features of Obsessive-Compulsive Disorder are recurrent obsessions and compulsions that are severe enough to occupy more than one hour a day or cause marked distress or significant impairment. At some point the person recognizes that the obsessions or compulsions are excessive or unreasonable.*

*Obsessions are persistent ideas, thoughts, impulses, or images that are experienced as intrusive and inappropriate and that cause marked anxiety or distress. The most common obsessions are about contamination (e.g., through shaking hands), repeated doubts (“Did I turn the stove off?”), the need to have things in a particular order, aggressive or horrific impulses (e.g., to hurt one’s child or yell obscenities), and sexual images (a recurrent pornographic image).*

*Compulsions are repetitive behaviors (e.g., hand washing, ordering, checking) or mental acts (counting, repeating words silently), the goal of which is to prevent or reduce the anxiety or distress, not to provide pleasure or gratification.*

*Most adults recognize the excessiveness of their obsessions and compulsions. However, there is a broad range of insight into the reasonableness of the obsessions or compulsions. When attempting to resist a compulsion, the individual may feel a mounting sense of anxiety or tension that is relieved by yielding to the compulsion.*

*Generalized Anxiety Disorder: The essential feature is excessive anxiety and worry, occurring more days than not for a period of at least six months, about a number of events or activities. The individual finds it difficult to control a worry. The anxiety and worry are accompanied by at least three of these additional symptoms: restlessness, easily fatigued, difficulty concentrating, irritability, muscle tension and disturbed sleep. The focus of the worry must not be another disorder.*

*Acute Stress Disorder: the essential feature is the development of characteristic anxiety, dissociative, and other symptoms that occur within a month after exposure to an extreme traumatic stressor. While experiencing the traumatic event or after the event, the individual has at least three of the following Dissociative symptoms: a sense of numbing, detachment, or absence of emotional responsiveness; a reduction in awareness of their surroundings; derealization; depersonalization; or Dissociative amnesia. After the trauma, the event is persistently re-experienced, and the individual displays marked avoidance of stimuli that might arouse recollection and has marked symptoms of anxiety and increased arousal. If the symptoms last more than four weeks, the diagnosis of Posttraumatic Stress Disorder may be applied.*

*Posttraumatic Stress Disorder: The essential feature is the development of characteristic symptoms following exposure to an extreme traumatic stressor involving direct personal experience of an event that involves actual or threatened death or serious injury to oneself or others; or learning about unexpected or violent death, serious harm, or threat of death experienced by a family member or a close associate. The person's response must involve intense fear, hopelessness, or horror. The characteristic symptoms include persistent re-experiencing of the traumatic event, persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness, and persistent symptoms of increased arousal. The full symptom picture must be present for more than one month, and the disturbance must cause significant distress or impairment in social or occupational functioning.*

*The traumatic events include, but are not limited to, combat, personal assault (e.g., sexual assault, robbery, etc.), loss of a loved one, being kidnapped, torture, incarceration, natural or man-made disasters, etc. Commonly, the person has recurrent and intrusive recollections of the event or recurring distressing dreams during which the event is replayed. In rare instances the person experiences dissociative states during which the event or parts of the event are relived (flashbacks).*

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Five months after my son Mitch took his life, I believed, that for the previous four months I had been tottering on the brink of Posttraumatic Stress Disorder. I continuously experienced a feeling of anxiety. The anxiety woke me up at night and I had a hard time falling back asleep. When I woke up in the morning, I immediately became anxious. I had a recurrent vision, wide-awake, where I see Mitch starting the act. I can still see him; he is in the landing of the stairwell in our apartment in New York. He is unafraid, even smirking, with an expression of concentration, such as he would show when preparing to do a complicated skateboard trick. He leaps, is in mid-air . . .

Then, the vision changes. The light is different; perhaps a few hours later. The sun has set. It is dark. Mitch is there, hanging immobile in the dark, at the bottom of the stairwell. The vision kept repeating itself as if it had been a real past event; I kept seeing him as he does it, as if I had been there watching, as if I am there watching.

Later in March, I was in our apartment in New York, still suffering from these visions. I had the opportunity to check with Donaldo, our friend who discovered the body. Eerily, except for a small element in his clothing, every detail was like I saw it.

After inspecting the stairwell, what is strange was that my angle of vision was such that I would have to have been inside a wall of the stairwell to have the proper perspective.

I suffered from another vision during this period. In it, I am standing next to the entrance to La Valenciana, a famous silver mine in Guanajuato. I am looking down this huge round hole in the ground, staring into the darkness. I could not fathom why I had this vision repeatedly. I remember I visited the site about thirty-three years ago, when I first started dating my wife, and we went there, but the mine was closed to the public. All you could do was lean on a fence that was about twenty yards from the mineshaft. You couldn't even look down into the hole, like I do in my flashbacks. It was another element that added to the sense of loss of control of my thoughts.

I could function socially and professionally (at least partially), so I could not diagnose myself as suffering from Posttraumatic Stress Disorder; but I felt very close to it.

"Beware of madness in the family," I recalled Tito's words. I felt like I was definitely going over the edge.

I needed to do something in order to snap out of this state of mind. So I did. A change of routine: a trip to Mexico for a few weeks changed the nature of my distress. I no longer felt on the verge of Posttraumatic Stress Disorder. Instead, it was all a bad memory. The vision of Mitch does not intrude spontaneously anymore, but it persists and haunts me as if I had really witnessed it.

Overcoming this mental state was difficult, but I continued exploring the functioning of the brain and got closer to my goal: aftoktognosis.

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*Consider the case of a tennis doubles match. Your opponent serves to you at a modest one hundred miles per hour; and while the ball is approaching, you can decide to go cross-court, down the line, or lob. You also have to decide if you will do this with a forehand or a backhand shot; and once you decide that you are going cross-court with a backhand, you also need to decide if it will be an under spin or top spin shot. And then, in the corner of your eye, you detect a slight motion, perhaps just a hint of the beginning of a motion, of the net man moving towards the center of the court indicating his intention to poach. In that split second, you change your mind, and change your body motion, primarily the orientation of your shoulders, and you execute a shot down the line to take advantage of your opponent's movement.*

*Experiments on the subjective evaluation of the interval of time that represent the present indicate that this "present" is about three seconds long; all else is mere reminiscence or anticipation.*

*How finely can we divide this little three-second present? The shortest perceivable time division—called the fusion threshold—is between two and thirty milliseconds, depending on the sensory modality. Two sounds seem to fuse into one if they are separated by less than two to five milliseconds. Two successive touches merge if they occur within ten to twenty milliseconds of one another, while flashes of light blur together if they are separated by less than 20 to 30 milliseconds. Humans consider two events as “presently” perceived, if their temporal separation is between three milliseconds and three seconds.*

*However, if a sensation on the skin lasts less than 500 milliseconds, an enormously long time compared to the 10-20 milliseconds of transit time required for the nerve signal to travel to the cortex, the stimulation is not consciously perceived. This does not mean that a skin shock has to be at least 0.5 second long in order to be felt, but only that the handshake signals produced by skin shock at the cortex must last at least 0.5 seconds before the skin shock can become part of the conscious experience. If we had to wait 0.5 seconds before experiencing what we touched, our tactile sense would be useless for all but the slowest of physical activities. Typical tactile reaction times are on the order of 100 milliseconds—the time it takes to perceive a touch and push a button.<sup>12</sup> How can we reconcile the observation that 0.5 second of neural activity is needed to build up a conscious touch sensation with the fact that we can feel a touch and take action five times faster than the time these perceptions are required to become conscious?*

*Axonal spikes travel down a neuron at speeds of 1.5 to 90 millimeters per millisecond, depending on the type of neuron and whether the axon is myelinated or not. In 20 milliseconds this is equivalent to the spike moving between 3 and 180 centimeters (roughly 1 inch and six feet respectively). Messages between different areas of the cortex travel at speeds of 1.5 to 5 millimeters per millisecond. Messages traveling down the spine move at speeds between 20 and 90 millimeters per millisecond. A neural message takes about the same time to go from one half of the brain to the other as it does to travel all the way down to the leg*

*What seems to be going on is this: the tactile signal reaches the brain in about 10-20 milliseconds and is not consciously perceived. But this arrival time is unconsciously noted in some way. If the cortical activity continues for the minimum time (about 0.5 seconds) to produce a conscious sensation, then the touch is registered as conscious. However, the touch is not experienced 0.5 seconds later: it is instead “referred” to the previous time indexed by the initial pulse arrival at the thalamus. It is as if the initial tactile pulse sets a “marker” in time, and this “marker” is redeemed if future cortical events produce enough sustained neural activity to promote the shock signal into consciousness.<sup>13</sup>*

*Back to our tennis game: my opponent serves at 100 miles per hour, which is the equivalent of 146.5 feet per second. The court is 72 feet long, so, roughly, I have about 0.5 seconds to respond between the time he hits his serve and the time the ball reaches me. My vision could potentially process about 16 “snapshots” (of 30 milliseconds each) to calculate where the ball is going to be when the time comes for me to hit it (one snapshot about every 4 feet). I don’t see a strobe light effect*

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<sup>12</sup> Nick Herbert, *Elemental Mind*.

<sup>13</sup> *Ibid.*

*of a ball every four feet; instead, my brain fills in the details and I see the ball in a perfectly continuous trajectory. In that half second I have to decide everything we mentioned earlier.*

*If I change my mind at the last split second and decide to go down the line, as my opponent tries to poach, this decision has to be made (about 100 milliseconds maximum as the ball hits the court and bounces towards me) before I make contact with the ball. Both my opponent and I report that we waited until the last possible moment, he to move and me to change my shot. Part or all of this decision process was done unconsciously, “referred” back to the sequential times when the sensations arrived in the cortex.*

*I, however, vividly feel that I consciously experienced all this; that I was a direct participant in this change of decision. I am aware that I changed my mind (and my motions) as a consequence of the movement I detected (about three or four visual “snapshots” of 20-30 milliseconds each) about 100 milliseconds before hitting the ball.*

*Consider also that when my opponent serves to me, the sound of the ball as it is hit by his racquet (traveling at the speed of sound of about 800 feet per second) takes roughly 90 milliseconds to reach my ear; about the same time that I used to change my mind. I, however, experience the sound as being in exact synchronization with what I am seeing and not as the sound happening when the ball is almost one quarter of the way towards me. I was aware or conscious that the sound was produced simultaneously with the visual image of the racquet touching the ball. Again, I am “referring” in time the information relayed by the senses so that I experience reality as it really is, as my experience dictates. Also, this reality is experienced as being “out there”, not inside my head.*

*In experiments with subjects presented with pictures that have a good or bad connotation, it has been determined it takes about 120 milliseconds to activate the regions in the ventromedial prefrontal region that react to unpleasant or pleasant stimuli.<sup>14</sup> Can it be that consciousness would need about the same time or more to be activated? However, there are numerous movements and reactions that need to be coordinated in 10-20 millisecond time responses.*

*There is a difference between a programmed, deterministic mechanical response and the mental process we call consciousness. Consciousness is more than perceiving and knowing; it is knowing that you know. The brain feels conscious when it thinks. The motion to produce a top-spin forehand can be a memorized (practiced) motion, and the cross-court or down-the-line shot might be a small variation (changing your feet and shoulders) of this movement, and all these movements might be outside consciousness, but we know what the correct motion feels like, and we know that we voluntarily changed our shot at the last split second.*

*We couldn't have been conscious (thinking) in the real sequential times (or at all) of all events (the sounds and images) that our senses relayed to us. We would not have had time either to coordinate all the signals our brain relayed to our muscles to achieve the desired shot, much less, when at the last split second we changed our minds. Because of the phenomena called “referred” in sequential time, everything was presented to our consciousness in the correct temporal sequences, and sight and sound were synchronized to match our experience. We couldn't have been conscious in real time; however it feels like we were there, and didn't miss a thing! The brain is a great illusionist.*

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<sup>14</sup> Joseph LeDoux, *The Emotional Brain*



Commonly, what we perceive is tainted by our previous experiences. Before my trip to Spain, I had promised Susana that I would be on the outlook for any signs of the Cardinal, as I called her previous life in Seville. It was an activity I took seriously. After Minnie's death, I would never again take my sisters for granted. Underneath the surface, with the grieving process not over, my emotions boiled. I attached emotional significance to events, places and people that otherwise would never have such importance.

After we left Madrid and Segovia, we went to Granada. Then Seville. While there, a series of coincidences caught my attention. I was determined to report back to Susana. It was comforting and amusing to think that we could have been together in a previous life. Where would Minnie fit in?

My grandfather, Tito, had named every hallway and room in his house in Mexico City. For this purpose he had a plaque, like a street sign, in each place with the name of the room or hallway. The entrance to his house was an outdoor patio that had been roofed over with a translucent ceiling. This lobby was named "Barrio de la Santa Cruz." Next to the Cathedral in Seville are the Jewish quarters, known as El Barrio de la Santa Cruz. We explored the Jewish quarters, hoping to find a reason as to why Tito might have named the entrance to his house after this area. Knowing my grandfather, the best explanation that I could come up with, was that the Jews welcomed all who came to do honest business; otherwise only Jews were welcomed.

Susana had alerted me to be aware of such coincidences. This, I thought, could be a sign that I might be on the track of the Cardinal who had been stabbed to death. The Jewish quarters of Seville, adjacent to the cathedral, are comprised of ancient buildings along very narrow, winding alleys. If a Cardinal were to be ambushed near his working place, these narrow passages would be an ideal setting.

As we walked around the Barrio de la Santa Cruz, we came across a house with a big skull with the crossbones and the name Susano below it. This was, we discovered, the home of a very beautiful Jewish woman who had gone to the Inquisition in the 1380's to warn them of something illegal her father was going to do, under the belief that she was helping him by preventing him from doing so. Unfortunately, she miscalculated, because the Inquisition tortured him to reveal the extent of the plot and the names of all involved. Her father died under torture. Susano then allegedly joined a Catholic convent for life to grieve her father. Shortly after she joined the convent, she committed suicide, or so it was said.

That night, my wife insisted in going to see Flamenco dancers. We were informed that the best Flamenco was at a place adjoining the Barrio de la Santa Cruz. The place was called "El Cardenal".

When I started writing about Mitch's suicide, I felt a strong compulsion to do so. Slowly, as I studied and learned more about suicide, specifically, and the brain, generally, I came to understand why these compulsive, seemingly unrelated

memories would come to intrude in my mind. They are all connected at an emotional level. As I searched for meaning, I gave meaning to memories with the same strong emotional content.

After Mitch's death, strong emotional attachments involuntarily bubbled to the surface. These strange attractions occupied me when I didn't know how or where to continue my writing or my research on the brain. As I researched Queen Isabel's life, I could not find a cause of death for her son, Prince Juan. I looked through my son's belongings to find more clues and other connections to Queen Isabel and Prince Juan, as if through them, I could connect to Mitch.

In my heightened grieving state, I gave emotional meaning to other coincidences and connections. For example: in the first book I read on suicide, *Night Falls Fast*, Kay Redfield Jamison writes a whole chapter on Meriwether Lewis. I felt strangely attracted to Meriwether, as many of his qualities reminded me of Mitch.

Shortly after I finished reading the book, I had a strong urge to be with my son, Freddy. I found him sitting at his desk in his bedroom, playing with some quarters.

"What are you doing?"

"I am arranging these quarters to see which I am missing."

"Oh, I didn't know you collected quarters."

"In 1998, the mint decided they would issue one quarter for every state, three a year. But look, in 2000, they minted this Sacagawea dollar."

"Who is Sacagawea?"

"She's an Indian woman that went on the Lewis and Clark expedition."

I studied her face on the coin, felt an attraction towards it. The next day, as I flipped through a magazine, I came across a full-page ad with an Indian woman standing in the wilderness. The ad was for a bank claiming to be as innovative as Sacagawea. Two days later, waiting in a doctor's office I saw a *National Geographic*. On the cover—Sacagawea. Where is she from? Idaho. My father, born in Mexico City, and living most of the time in Acapulco, built a house in Idaho, very near Yellowstone Park, where he spends the summer in what was Sacagawea's back yard!

Through these connections, emotionally, slowly, painfully, parts of my story came to life. On an intellectual level, I found it interesting to see how all this past history ultimately has woven the tapestry of our modern world, and has affected us as personally and as surely as the evolution of our brains. Most events of the past cannot be studied in isolation. They have to be considered within a context, and always considered within a mosaic of other relevant events. Sometimes, events in one place affect events in remote places, and even through long separations in time. Similarly, everything is interconnected in the brain and affects all parts. The past, our memories, affect our present.

There are situations where everyone sees the same thing, but interprets it in a different light.

## Vision

*Seeing is a complicated process. The visual system consists of one very large primary system, one secondary system, and a number of minor systems. They all receive input from some of the million or so ganglion cells (neurons) at the back of the eye. The primary system connects to the visual cortex in the occipital lobe, via a part of the thalamus called the Lateral Geniculate Nucleus (LGN). The secondary system projects to the superior colliculus at the top of the midbrain. Each eye sends signals to both sides of the brain, so that both the left and the right visual cortex are receiving information from both eyes.*

*Any particular ganglion cell will respond vigorously to a small spot of light turned on (or off) in one particular part of the visual field. In total darkness, a ganglion cell fires at a low, irregular rate, called its background rate. A spot of light on the retina will generally excite a group of ganglion cells, though not all to the same degree.*

*There are two types of ganglion cells, and both are divided into two classes of ganglion cells; the M cells and the P cells. The M cells send signals faster to the brain. They respond well to small differences in light intensity and so handle low contrast well. The P cells are more numerous and their responses are more proportional to their input than the M cells. They are more interested in fine detail, higher contrast, and especially color. Once again, the retina is not just transmitting raw information; it has started the job of processing this information and is doing so in more ways than one.*

*Both the M and P cells send their axons to the LGN in the thalamus, where it is relayed to the visual cortex. The retina also projects to the superior colliculus. P cells do not do so, but some M cells do. The lack of P-cell input means the superior colliculus is colorblind. Each eye projects to both sides of the brain, but it does so in such a way that the left side of the brain receives input relating only to the right half of the visual field, meaning the right half of the left eye, and the right half of the right eye. So everything we see to the right of our center of gaze goes to the left LGN, on its way to the visual cortex and also to the left superior colliculus. The two halves of the brain exchange information through several tracts of nerve fibers of which the largest is the corpus callosum.<sup>15</sup>*

*The colliculus is a three-layered structure. The neurons in the upper region are selective for movement and are very interested in small stimuli and their response to the change of light is often very transient. These are all factors that command attention; they signal, "Look out, there is something there."*

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<sup>15</sup> Francis Crick, *The Astonishing Hypothesis*.

*The LGN seems to be a relay; the principal cells receive input directly from the retina and send their axons directly to the visual area of the cortex. There are no other neurons in between, hence the name relay. The M and P inputs are largely kept apart, as are the inputs from the two eyes.*

*So far we have only talked about the principal excitatory cells. Inhibitory neurons use neurotransmitters that make the firing of other neurons less probable, so they need to receive many more signals to fire. The inhibitory neurons fall into two main classes, those in the LGN proper and those in a thin sheet of cells called the reticulus nucleus of the thalamus. This thin sheet of cells surrounds much of the thalamus. Its neurons are all inhibitory. They receive excitation from most of the axons passing to and from the cortex and they interact with each other. Their output is mapped onto the underlying neurons of the thalamus immediately beneath them.*

*If the thalamus can be described as a gateway to the cortex, then the reticular nucleus would be the guardian of the gateway. Here is where the main matching of stimulus to echoes is achieved and the orchestration of where and how to send the impulses begin. This is when awareness starts; this is where attention is controlled.*

*Visual awareness is the result of the brain's attempt to make sense of the information coming into the eyes and to express it in a compact and well-organized manner. At the first level, vision attempts to construct a map of the outside world, and at a more profound level, it tries to understand what is out there. This information is likely to be needed in several distinct places; the higher planning levels for use of spatial relations and the motor system, to allow us to navigate through the world. Visual attention, when engaged, also sends the signals to the hippocampal system (involved in the temporary storage or coding of episodic memory).*

*Vision seems to be a hierarchical process, where at each higher step, more information is interpreted according to the output of the lower steps. This view is supported by the general responses of the neurons in the different areas. As we ascend the hierarchy two rough rules apply, (1) The sizes of the receptive fields increase, so that for the highest areas they often cover the whole visual hemifield and even part of the other half of the visual field (connected via the corpus callosum); (2) the features to which neurons respond become more complex.*

*Neurons in different areas respond to different characteristics; in one area, some neurons respond to certain contours, while in another area they respond in a less simple way to patterns of movement. Neurons in another adjacent area, fire in response to movements that correspond to approaching objects, others to receding objects. In another area, neurons respond to perceived color, rather than a particular wavelength.*

*Moving to higher areas we find neurons that respond to the front view of a face. Other neurons respond best to a face seen in profile. In one other area, neurons are mainly interested in where an object is in relation to the head or the body, and much less in what it is. The inferotemporal regions are more concerned with what it is.*

*The general pattern is that each area receives several inputs from lower areas. These lower areas have already extracted more complex features than the rather simple ones to which the primary visual area responds. It then operates on this combination of inputs to produce more complex features, which are then passed on to higher levels. At the same time, the information flows in somewhat separate but interacting streams.*

*The whole system does not operate like a one-shot, static picture. It operates by many transient, dynamic interactions, conducted at a fairly fast rate, producing a continuous dynamic representation of the world. Eventually, memories of objects are constructed and stored by categories that generally have shared characteristics, i.e., memories for animals, man-made objects, faces, plants, tools, and so on.*

*What can be more real than what we see out there? However, we have seen in a very simplified way how the brain effortlessly (seemingly) constructs an image of our environment and interprets it, not only spatially but also contextually. What we see feels real, because it is in accordance with our past experience. It seems to be an exact match of our past memories. The brain creates another great illusion using the light that impinges on our eyes.*

~

## Prince John

Queen Isabel sat in the Throne room in the Alcazar of Segovia. Looking out from the heights, she admires the views that extend below her. She was lost in thought, thinking how much has been achieved since her accession to the throne. She thought of Fernando, her husband. The sound of running feet in the hallway interrupted her thoughts. “How many times do I have to tell Juan not to run?” she said to herself. She got up and called out, “Juan!” No answer, so she moved quickly, following the receding footsteps.

As she walked down the hallway, she heard Juan’s clavichord. He was practicing his scales, up and down with both hands simultaneously. She stopped at the door, looked at Juan, her oldest boy, her second born, with affection. He was playing his scales very fast and he moved his head following his keystrokes. She smiled, remembering the incident of the day before.

The fire alarm had sounded; huge plumes of smoke streamed out the windows one level below the Throne Room on the opposite side of the Alcazar. The smoke that streamed up the staircase reduced visibility to nil. The Captain of the Guard, the first to reach the basement, called up the stairs, “Hurry. It looks like a big fire.” Then he heard coughing. “Who’s there?” He yelled into the cloud of smoke.

“It’s me, Prince Juan, Captain,” came the reply amid much coughing. “I’m fine. There is no fire. It’s just a smoke bomb. There is nothing to worry about.”

More guards came running down the stairs. Juan emerged from the smoke. Between bouts of coughing, Juan addressed the Captain, “The smoke bomb was bigger than I expected. I didn’t mean to produce so much smoke. It was awesome.”

“Make sure there is no fire. Don’t take his word for it. Take the Prince up to the Queen,” the Captain ordered.

“That won’t be necessary, Captain,” said Isabel as she calmly approached the group. “What is going on?” she asked no one in particular. Juan continued to cough, trying to clear his lungs. “Juan, for God’s sake, what is going on?”

“Your highness, I must take the blame. We were discussing the uses of smoke in the battlefield. Yesterday I taught Prince Juan how to make a smoke bomb using gunpowder. I never thought he would try to make one. If there is any damage, it is I that should be held responsible.”

“I am sorry, mother,” Juan said between coughs.

“Young man, you and I will talk about this later. In any case, Captain, if anyone’s to blame, it is I. The day before yesterday, I was conversing with the young prince,

and I told him that some day he would take over his father's responsibilities and it was his duty to learn all he could about military matters. So, he obviously followed my advice."

The curtains in the general vicinity of the basement were permeated with the acrid smell of gunsmoke. They would need to be replaced. In the future, Isabel thought, she would be more careful with what she said to her son.

As Juan continued his exercises on the clavichord, Isabel walked in quietly and sat down, waiting for Juan to finish. When he did, he turned, looked at her as he did when he was about to put a question forward that he felt might challenge his mother's intelligence.

"Mother," he started tentatively.

"Yes, Juan?"

"You haven't mentioned the smoke bomb."

"You already know that it was irresponsible. I don't need to beat a dead horse to death, do I?"

"Then, why don't we jump into our weekly philosophy session? Lets talk about success."

"Very well." After a short pause, Isabel continued, "What is success?"

"It is doing whatever you want."

"Then, to be successful, you need to know what you want?"

"We all know what we want. We just have to set a goal and do whatever it takes to get there."

"Do we? How do you know the way to the goal, how can you be sure that what you are doing will eventually get you there?"

"What do you mean, mother?"

"Think of the Captain of a ship. He knows where he wants to go. He could draw a straight line, on a map, between where he is and his destination. However, especially when he is moving against the winds, he will be off course all the time, except on those few moments when he tacks and crosses the line he drew. Each time he crosses the line, he will be closer to his goal, but he is always moving in a different direction than the straight line he drew. The sum of all directions will eventually get him to his destination, after many turns. The difference between a good and a bad Captain is just how many turns it takes each one of them to reach his destination."

Juan nodded pensively.

"There is also success before the Captain reaches his destination. With each tack, the angle chosen against the wind will determine speed, and also determine how much you really move in the desired direction. It is a combination of the best angle and the best speed that will get you to your destination sooner. If you had two Captains in a race, after each tack, you could easily see which one was most successful. So success is relative. Every step adds to the ultimate success."

"Of course. That is very interesting, mother."

“And what about who is more successful, the Captain of a ship, or the Captain of the Guard?”

“That depends.”

“On what?”

“You just said it was relative. So it depends on what you are measuring. If two Captains are racing, we measure distance. In this case we need to decide what we are measuring. How much money they make, for example.”

“Very good, Juan. But what about who enjoys more what they do?”

“In that case, they both could be equally successful.”

“What about who has a more beautiful wife, or more children?”

“Beauty is subjective, and all women can be equally beautiful. Beauty can't be measured, so it has no part in success. The children are easy to count, but the love for them can't be measured. So I don't think the children are part of success, or conversely it could easily be argued that both could be equally successful.”

“What about how many successful children each has?”

“It depends on how you define successful.”

“That is a circular argument, Juan. Can you say that either Captain is successful if his children and his wife don't love him?”

“I hadn't thought about that. I guess if you are not loved, you can't be successful.”

“Success shouldn't be measured by how much money you make or how quickly you get to your destination, but by how many people love you. Success is gaining and maintaining the respect and love of family and friends.” Isabel tried to read Juan's expression to see if he was following. She added, “And like the Captain tacking against the wind, carefully considering the angle of each turn, you need to take one day at the time. Friends are made one by one. Every morning, set out to accomplish something, even if it is something small. Ask God to give you the strength to finish the day. Every day, pray that you will be kind to all around you. This way, at the end of the day, there is always one more accomplishment, one more friend. You will be surprised by how much you can do, by how many friends you have, at the end of each day, day after day.” Isabel smiled.

Juan smiled back and kissed his mother on the forehead.

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That day as Queen Isabel sat in the magnificent Throne Room of the Alcazar of Seville, her husband, Fernando was of little help. A great warrior, he commanded the armed forces. He was her greatest supporter. She wished that she could spend much more time with her children, educating them, nurturing them. But today, she was facing the biggest decision in her life. She had to face it alone.

The day before, Columbus presented his scheme to find a new route to the spices. Nobody understood the tremendous importance of her meeting with him.

She was hoping that there is another route to India; otherwise, the push to get rid of all Moors and Jews would be a fatal mistake, at least for the future of Spain and Catholicism. He must succeed if Isabel and Fernando were going to attack Granada for the final push to rid the Iberian Peninsula of the Moors.

However, if Columbus could deliver a different route to the spices, her problems would be greatly simplified. Not over, just simplified. Then the conquest of Granada won't endanger commerce. Then, maybe she will have more time for her children.

Her thoughts are interrupted when Fernando joined her in the Throne Room. Several of their ministers gathered round. After they had finished with the royal salutations, they were seated in their designated places. She looked at Fernando sitting next to her. He nodded slightly as a sign for her to begin.

"Columbus insists he can reach India and China by crossing the Sea. He recommends a group of three caravels to insure success. On the other hand, I know the Portuguese are exploring going around Africa. We still don't know how big Africa is. How far south does it reach? And we have no other program in place. We have to gamble that Columbus is correct." She tried to convince her small audience. Fernando and the Ministers listened carefully.

One of the Ministers interjected, "The fact remains that we can not finance this adventure and fight Granada. With all due respect, your Highness, I don't even know if we can afford to fight Granada. We don't know how long they can withstand our siege. We aren't even sure that we can win it. The longest effort we can sustain is six months, maybe less. With regard to Columbus's proposal, I, for one, cannot recommend distracting any monies on an adventure that remains such a huge risk. They might sail west and we never see or hear from them again. In the name of God, be reasonable," as he finished, his shoulders slumped in despair.

Isabel looked around the room, waiting for more opinions. They didn't understand the underpinnings of the commercial situation. Should she explain it to them? So she countered, "What do we know about the Portuguese African adventure?"

"We have spies," another Minister said, "but they are guarding their charts as if they were more valuable than gold. We know they have found some islands to the West. The Canaries and the Azores. We have stolen some charts that show their locations, but then they could be false, just to trick us into sending a ship to look for a ghost. There is not much on these islands from what we hear; if they exist."

"Our spies . . . how dependable can they be?" she asked.

"They are good, but the Portuguese captains are very loyal to their king. It is hard to get information. This is considered state secrets."

"Well, they should guard them as state secrets. A lot of riches will be bestowed if they find a way through." She waited again. Again silence. "So, the Crown doesn't have the money. I take it that means that we can't borrow anymore, correct?"

They nodded.

“Thank you all for your advice and frankness. I will inform Columbus of my decision tomorrow. You are all dismissed.” She sighed as they slowly left. She looked over at Fernando.

He smiled calmly at her. He looked into her blue-green eyes, then he rubbed her cheek gently with the back of his hand. “Come, let’s enjoy a walk in the garden. The afternoon is perfect, and the gardens are filled with spring flowers.” He took her hand, and led her out.

In the garden they sat listening to the water fountains the Moors designed so many years before.

“I’m still amazed at their ingenuity, to use a natural spring for such a calming effect,” she began. Then, “Fernando, it is not a question of whether we can afford to do it. It is a question of whether we can afford not to do it. I think that I could use my personal jewelry to finance Columbus’s caravels. It is the only solution. If we can’t win against Granada, we will be dead, not because Granada can then turn and conquer us, but because Granada will squeeze until we bleed. They will ask and get exorbitant prices to get the spices we need to feed our people. They control the flow of commerce. They are refusing to pay their taxes. That is why we are going to war with them now; they are already squeezing us hard. We know it. It is hurting us. But you and I know that even with the Moors gone from Spain, the Muslims in Africa are still going to try to squeeze us. We can’t win either way. Our only alternative is to find an alternate route. That is it.”

“What happens if Columbus fails? Then we will have lost your jewels for nothing. At least you and I will have each other and can live in seclusion and splendor the rest of our lives.”

“Would you be happy with that, knowing that most Spaniards are starving?”

“You are right, my dear. I would not be happy. So the answer has to be yes. On the other hand, if we fail, what future do we leave our children? Especially Juan. So much is expected of him. Isabella, Juana, Maria and Catarina—the girls we could still marry to suitable kings or princes. How would this affect all that? We can’t afford to fail.”

“I’m only worried about Juan. He is only fifteen; he needs to finish his studies. Maximilian has proposed a marriage between his daughter Margaret and Juan. Of course he has made all this entirely subject to the expulsion of the Moors from Spain. Our girls, they are all beautiful, intelligent, better educated than most men. There will be a line of suitors at our door. We can marry all of them well, perhaps even to kings. In their case, we have some time, a few years. But now, we are running out of time. Yes. Columbus must have his caravels!”

“Isabel, also keep in mind that if Columbus fails, the Portuguese might succeed.”

“That is part of the plan. If we fail and they are successful in opening a new route, we will be at their mercy until we can establish our own new routes. That we can deal with. When the time comes, we will steal the routes from the Portuguese if necessary. Tomorrow, Columbus gets his caravels.”

That year Granada fell and America was discovered. Spain started its Golden Age.



Four years later Prince Juan is sitting in the Courtyard of the Mexuar in the Alhambra. The full moon lights up the courtyard and, at either of its ends, The Golden Chamber and the Comares Palace. The courtyard is slightly rectangular in shape, about 30 feet wide by 45 feet long. Its floor is made of large white marble squares. The façade of the Comares Palace, raised three white marble steps above the courtyard, its symmetry and patterns are considered by the Moors to be nearly perfect in its construction; a perfect balance of windows, arches, doors with the proportions of height and width.

Believing that Allah alone is capable of perfection, and as a measure of respect for Allah and his ability to make perfection, the Moors purposely made one side of the right doorway slanted and bulging. This façade commemorates the successful siege of Algeciras by Muhammad V in 1369.

In the middle of the courtyard is a round fountain, about eight feet in diameter, the top of which is only a few inches above the courtyard's marble squares, with a small stream of water sprouting from its center. The fountain sits inside a fluted trough of white marble. The water overflows from the fountain into the trough. In the process it makes a very soft, steady, calming sound. That is what Juan sought. Juan knew his parents were trying to get him away from Salamanca and get him more and more involved in complicated affairs of State. He knew that his parents hoped that the beauty of the Alhambra, by far the most beautiful Palace in all of Spain, would be a good incentive for him to settle down to the affairs of a future King.

Juan sat on the steps that led down to the perfect square in the middle of which lies the circular fountain.

Four years ago, everything had been so perfect. He had just met Mary, the most beautiful sight he had ever laid eyes on. The day she arrived in Salamanca she took the University by storm. Everyone loved her; redheaded, with fair skin, a slight sprinkling of freckles, just enough to make her look more alluring. And her deep green-blue eyes, the same color as his mother's, with the capacity to cast a spell on you. She had come to Salamanca to study at the University, to take advantage of the opportunities created for women by his mother.

While in Salamanca, Prince Juan attended classes in the same drafty rooms and sat on the same hard benches as anyone else while listening to lectures delivered by the best intellects of Spain. He remembered fondly the days when he played his harpsichord and attended performances of Juan del Encina eclogues at the nearby palace of the dukes of Alba. Prince Juan invited his friends regularly to afternoon gatherings in his Palace in Salamanca where he and five or six well trained young singers, directed by a professional music master, sang for several hours. His idyllic days as student. How he wished he could return to those simple days. He loved to play several instruments: the guitar, the violin, the clavi-organ, the organ and the clavichord. Prince Juan studied history and economics, but more important to him was learning

music and practicing singing. The nights with Mary were so sweet and tender. She was three years older than he was, but he felt that they were made for each other. She had the strange ability to make him feel completely happy. He never worried about when he would be king. He was just so glad to be happy all day with her.

Then, he had to start facing the realities of becoming the future King. Margaret of the Hapsburgs of the Austro-Hungarian Empire was chosen for a marriage of convenience according to his station, which forged an alliance that would consolidate more power in the hands of Spain. He had no choice but to marry her, his love for Mary notwithstanding. He was forced to be more serious and to sing and play his beloved music infrequently. He had to study more. All this would have been fine, if it wasn't for the fact that he was seeing Mary less and less. But it was all still manageable and expected.

A little over a year ago, a week after he married Margaret, he woke up in the middle of the night, sweating. He felt like he didn't fit in his skin. He felt like trying to crawl out of his body. He needed to take deep breaths to fill his lungs, trying to calm down. His anxiety grew and grew; he couldn't identify its source. He tried walking around his room, but that did not make this terrifying feeling subside. He walked outside in the courtyards and gardens of his palace in Salamanca, taking deep breaths and looking around in all directions. He felt trapped, hunted. He wanted to escape, but escape from what? To where? He shook his head from side to side; nothing he did worked. Finally, exhausted in the early dawn, he went back to his room and collapsed. Sleep finally afforded some measure of peace.

He blamed his state of mind on Margaret. She made him crazy with her superficial chatter. She drove him mad with her jealousies about Mary. The strange feeling would subside, but every two or three weeks other strange feelings would come back. His thoughts raced ahead of him, his speech raced attempting to catch up. Mary stared at him as if he was a stranger. He spoke at speeds that changed his voice and made him a different person altogether. He made love to her desperately for long hours, and for that he was grateful. Sometimes his energy levels were so high, he also made love to Margaret all night.

The feeling became worse as the day grew old. It was like an invisible hammer hitting his brain without touching his skull. Each day the feeling got progressively worse, became almost unbearable, then sheer exhaustion let him drift to sleep and peace.

Then inevitably his mood shifted. He felt like he had lost his best friend, his mother and Mary all combined. He could only describe it as a very deep sense of sadness and grief, mixed with anger and anxiety. It would go on for days, and then slowly he would feel restored, at peace until the next time. Every time the feeling came back it gripped him as though squeezing his chest. Then, it would leave, and he would fly high for days, the exhilaration so intense, he sometimes felt like he was going to die. At other times he would just be overcome with intense anxiety and fear, and he couldn't make it go away.

The fear would not subside, no matter how much he told himself there was nothing there. Then he would lose all pleasure in his singing and in his music. It felt like he was not himself, like he was an observer outside himself watching as he went through his daily motions. He felt like a phantom. Reality became ghostly, transparent, and unbelievable. He started thinking of death. He had a recurrent nightmare: he would calmly decide to jump into the abyss, convinced that death was the best course of action. As he fell, flying through the air, he was astounded to find the abyss bottomless. As he continued falling to his death, he would change his mind, start to scream in terror, then . . . wake up.

Margaret didn't understand any of this. Margaret didn't empathize that he was madly in love with Mary, with the young Flemish red-haired artist that a few years ago had stolen his heart. Her jealous fits made everything worse. Margaret understood that theirs was a marriage of convenience, but still she insisted that she be treated with complete respect. In this she was right; Prince Juan couldn't blame her for that. But, oh, how he missed Mary. It had been three weeks since he last saw her. How he longed for her. He needed to touch, and taste and smell Mary every day. Making love to her was as necessary as breathing.

His mother and father, The Catholic Kings, appeared at the door of the Comares Palace opposite the courtyard where he sat. He waved at them, hoping that they would go away. He wanted to be alone. They meant well, but simply didn't understand his fiery desires or his moments of turmoil. He certainly couldn't unburden himself with his mother. Even though she was highly educated, she was so pious. Everything was planned and calculated to maximize the power of the Spanish Crown. She certainly wouldn't support his affair with Mary. When his father had noticed his strange behavior during one of his episodes of deep turmoil, he had explained it away, by confessing his feelings for Mary and his confusion about what to do about it. Fernando had arranged quietly for Mary to live in a nice house in Salamanca and recommended Juan visit her discreetly. If only his father knew of his agonies. How could he save himself?

And so he struggled and tried to balance his duties as future King of Spain with his personal desires, mostly to play music and be with Mary. But four or five times a year he would be gripped with his intense desire to fly, to run, to giggle, to make love all day until, occasionally he had to be physically restrained for fear of his exhausting himself to death. Finally, sleep.

Inevitably these bouts of flight would be followed by deep plunges into darkness. His melancholic temperament, as the court doctors described it, was responsible for these changes of mood. Prince Juan learned to disguise all this, as the episodes, as he called them, became more and more familiar to him. The deep fear was what he feared the most, and then this fear would trigger the unbounded fear. It felt like he was dying. To be able to disguise his terror required such a huge effort; that effort exhausted him, but the exhaustion was a potent method to combat this inexplicable fear that seemed to be lurking in the shadows of his mind, waiting to ambush him at any pretext.

When he was in his dark mood, Prince Juan blamed his mood on the weight of his responsibilities or on missing Mary. At other times he blamed it on his wife. When he was flighty, he didn't care about anything, not even his unbound terror, not even his black mood. Inevitably, when he fell back into his dark mood, he could hear himself saying to himself, "I wish I were dead, Iwishiweredeadiwishiweredead-iwishiwere-dead," as if he was repeating some chant like a Catholic priest saying the rosary.

Eventually, sometimes he thought about what he was repeating to himself and realized it had meaning. These thoughts took him back to his childhood, like when he started to understand the meaning of the words of the prayers he was taught. Then he attended to the words, repeating them slowly, listening, to give them meaning; and realizing the meaning. Then it seemed, so obvious, and to think that for years he hadn't even acknowledged that these thoughts had a meaning.

For the next three years he lived like this, if this could be called living. Prince Juan endured the episodes; masking as well as he could from all others his inner turmoil. His sister Juana was the only one that seemed to understand. She alone had the courage and the empathy to discuss with him his madness, as she frankly called it.

More and more, Prince Juan wished that he could have a simple life, that he could be at the lowest station in society, where everyone would tell him what to do and no one expected anything at all. Just to be unnoticed, to be anonymous—then he would be all right. How he wished for that. How he wished he were dead.

It was a sunny day. He was back in the Alcazar of his childhood. The night before he argued with Margaret and hadn't slept. The vista of the valley below the Alcazar of Segovia sparkled with the green and yellows of the foliage. Juan didn't notice either the sun or the sparkling views. He entered the Throne Room looking for his mother. He stopped in his tracks—the room empty. He forgot what he was doing there. He turned to leave, and then turned back confusedly. A strange black void seemed to fill his head. Then, "Iwishiweredead-iwishiwere-dead . . . iwishiwere-dead-iwishiwere-dead-iwishiwere-dead . . ." was ringing interminably in his head.

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How could Isabel ever forget the events of that day? She was sitting in the royal lavatory at the Alcazar of Segovia, next to the Throne Room. The lavatory is built cantilevered, hanging over the huge cliffs. In the middle of the floor there is a comfortable stone chair with a small round opening. Through this opening you can see straight down to the river that runs far below and is part of a defensive moat. In the Throne Room next to her, she could hear someone walking around, taking in deep breaths, mumbling incoherently. She wondered who it could be. She finished her personal obligations, straightened her skirts and walked into the Throne Room to find her son Juan. He looked at her with quickly shifting eyes. They moved left, then right, it seemed he was trying to see her, but gave her the impression that he

couldn't. He seemed blind, and that he was trying desperately to see, to focus on something, by moving his eyes rapidly. She called softly, "Juan, I am here. It's me, your mother. What is wrong?"

He didn't answer. He smiled strangely. He took a deep breath, then walked into the lavatory, next to the Throne Room. Isabel followed him. He looked out into the distance, and then glanced quickly at the river far below. Before she could say or do anything, he walked out the window. She ran to see him; he fell motionless as she watched in terror. Then, suddenly he started screaming and flailing. She would never forget that scream as long as she lived. And then . . . complete silence.

"God could not do this to me; it must have been an accident. He fell out the window," she thought.

"He fell out the window," she said to Fernando as he ran into the Throne Room. And so it came to be known that Juan had an accidental death. It must have been so.

Isabel remembered all this and more as she lay on her deathbed seven years later. She remembered the death of her daughter Isabel, Queen of Portugal, in childbirth; the death two years later, of her grandson Miguel, who she hoped would take over her crown; the madness of her daughter Juana; and Catarina's disastrous marriage with Henry VIII."

"What evil doings could I have done that my children deserved such terrible fortunes? It must be a form of punishment by God to atone for what I have done to the Jews and the Muslims. Poor wretched souls caught in the middle of terrible political currents, which I was not able to control. Why have I tried so hard to build institutions that will last, that will protect my subjects, in the New World and in Spain, instead of worrying about my children? I tried to atone for my neglect. But my children paid the price for my political pursuits."

Fernando quietly approached her bed. He sat next to her and gently dried the perspiration on her face with a soft cloth. She tried to smile. It hurt her to see his pained expression.

"Rest, don't try to talk," he said gently.

"This is my last chance to talk to you, my dear husband. I want to tell you that I love you and always have. I am just hoping that you don't blame me for all the misfortunes we have suffered with our children."

"Don't ever think that. You have been the most devoted wife and mother that I could ever wish for."

"But still, I wonder why so much death, so much madness? I wonder if I had to do it all over again, what would I do different? We both know what terrible consequences the expulsion of the Jews and later the Muslims had on the economic well being of most of our subjects. I keep asking myself, how could I have done more and better for my people?"

"Isabel, my love, no people before you had a queen so good. No man before me had a wife so good. No women before you had so many opportunities to learn so much, to be in the arts and all the equal of men."

“I want you to remember what we are trying to accomplish.”

“I’m sure you’ll be reminding me every day of my life.” He looked at her, smiled and his eyes filled with tears. She could see herself reflected in his big brown eyes. Time seemed suspended.

“My time is near, Fernando. I can feel darkness descending on me. I feel coldness in my body and in my breath. I feel death calling me gently. I see her sitting next to me. Hold my hand . . .”

Isabel could see herself lying there. She was floating high above. She saw Fernando shed tears. She saw him pick up her limp hand. Then she felt someone else take her other hand. She thought, “Juan; my dear Juan has come to greet me . . .”

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# Memory

*In my discussion of movement and vision, the concept of memories becomes central. The different memory systems are a central part to understanding the brain's functions and malfunctions.*

*Memories with shared characteristics help to interpret more of the information coming into the brain from the senses or the body, for example, a memory file of faces, a memory of plants, a memory of tools, a memory of animals, and so on. The cortex in *Homo sapiens* is mostly an expanded memory system that allows more memories to be stored by categories, by context and by emotions. The memory systems that are used by the different senses to extract the most information from the world around us are sometimes shared, as this information needs to be integrated into a coherent whole. Our increased memory systems have been (evolutionary speaking) co-opted for further tasks.*

*The same visual memories that help us interpret what is in our visual field allow us to “see” in our “mind’s eye” and to imagine as well as manipulate objects in “space” and “turn” them in our “heads”.*

*Hearing memories used by the brain to interpret the information from our ears allow us to make sense of speech sounds, building from sounds into words, and in turn give words a syntactical and grammatical meaning, and eventually we “think” (using these voices) in terms of a voice in our “head”. Actually several voices or ideas are continuously going on inside my and everyone else’s “head”.*

*Most of the ideas presented in this section are taken from Daniel Schacter’s excellent book, *Searching for Memory*.*

*Our memories feel uniquely ours, quite distinct from everybody else’s. We feel this way because our memories are rooted in the ongoing series of episodes and incidents that constitute our daily lives. Our subjective sense of remembering the past is such a familiar and frequent part of our inner lives that we may fail to see any need to examine it. As we think back, we may feel as though we are focusing on images, sounds and emotions that are slumbering somewhere in our memory. As plausible as this seems, it is fundamentally misleading. Our experience of remembering an event does, naturally, partly depend on information about the event that has been stored in our brains. However, there are other contributors to the subjective sense of remembering, and to appreciate memory’s fragile power we need to understand them.<sup>16</sup>*

*Every time you start to drive your car, you are calling on old knowledge and skills acquired earlier, but you do not feel you are reliving your past. These uses of the past call on two of the brain’s*

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<sup>16</sup> Daniel L. Schacter, *Searching For Memory*.

major memory systems: semantic memory, which contains conceptual and factual knowledge, and procedural memory, which allows us to learn skills and acquire habits. But there is something special about the subjective experience of explicitly remembering past incidents that separates it from other uses of memory (storing and retrieving information). In order to be “experienced” as memory, the information must be recalled in the context of a particular time and place and with some emotional reference to oneself as a participant in the episode. Remembering, for the rememberer, is a mental time travel, a sort of reliving of something that happened in the past.

When you remember something, do you see yourself in the scene? Or do you see the scene through your eyes, as if you were looking outward, so that you yourself are not an object in the scene? These two modes of remembering are referred to as field and observer memories, respectively.

People experience more field memories when focusing on feelings and experience more observer memories when focusing on objective circumstances. This means that an important part of your recollective experience—whether or not you see yourself as a participant in a remembered event—is, to a large extent, constructed or invented at the time of recall. The way you remember an event depends on your purposes and goals at the time you recall it. This observation suggests that the emotional intensity of a memory is determined, in part, by the way in which you go about remembering the episode. And the emotions that you attribute to the past may sometimes arise from the way in which you set out to retrieve a memory in the present.

In this context, there is a memory of the feeling of the emotion, which in itself turns on a complete set of memories, relating to that particular emotion. This is coordinated by the caudate nucleus. It detects specific signals from the amygdala and engages the related thoughts and experiences indirectly by signaling to the thalamus.

There are two subjective experiences, referred to as “remembering” and “knowing” the past. Several studies have shown that recall of visual information about a physical setting or context of an event is crucial to having a “remember” experience. Why does retrieving visual images tend to make us feel that we are remembering a real event?<sup>17</sup> Part of the reason is that some of the same brain regions are involved in several activities: visual imagery, visual perception and remembering. If we rely on these areas to perceive the external world, it should not be surprising that when we use them to create visual images, they might feel like a residue of actual past events. This has an important implication: creating visual images may lead us to believe that we are remembering an event even when the incident never happened.

Though it is clearly important, visual reexperiencing is probably not the sole basis of the subjective sense of remembering. We are also likely to feel we are remembering something from the past when we can recall associations and ideas and feelings that occurred to us during the initial episode.

Scientists agree that the brain does not operate like a video camera or a copying machine. Then what aspects of reality do remain in memory once an episode has concluded? What we believe about ourselves is determined by what we remember about our pasts.

Studying patterns of spared and impaired functions that are the result of specific brain damage can be used to infer the structure of the brain. We infer the functional and neural

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<sup>17</sup> Ibid.

*separability of a circuit assumed as necessary for the performance of a task if it can be damaged independently of other processes. This logic can be extended to differences in performance for types of stimuli.<sup>18</sup> For example, some neurons selectively fire when recognizing faces and may be used to infer the existence of special circuits to process faces. However, this observation does not unequivocally support the inference of a distinct circuit for processing faces. It could be that faces differ from other objects not in terms of a processing circuit, but in the levels of processing complexity.<sup>19</sup> There are, however, many areas that appear to have distinct processing mechanisms. For example, the dissociation of processing words versus objects indicates the existence of two distinct circuits, one related to hearing and the other, to the visual.*

*The general idea that memories are built from fragments of experience can help understand key aspects of the rememberer's recollective experience, as well as memory distortions and effects of implicit memory.*

*Research has shown that short-term memories last for only seconds. These temporary records on which attention is working is called working memory. There are momentary short-lasting handshakes established between different areas of the cortex to keep attention focused on these bits of information to allow us to act upon them.*

*Long-term memories depend on a different network of brain structures than working memory. People with damage to the inner part of the temporal lobes in the center of the brain have no difficulty retaining a string of digits for several seconds, yet have great difficulty forming and remembering enduring memories. Other people with damage to a specific part of the parietal lobe on the cortical surface can form long-term memories, but cannot hold and repeat a string of digits. They lack a specific part of working memory, known as the phonological loop that most of us rely on when we need to hold a small amount of linguistic information for several seconds.<sup>20</sup>*

*To establish a durable memory, incoming information must be encoded much more thoroughly or deeply by associating it meaningfully with knowledge that already exists in memory.<sup>21</sup> In other words, extensive handshakes must be established between many of the characteristics of an object or event. Attention to shared characteristics with previous memories will allow a quicker and more extensive series of handshakes to be established, as well as easily tying into the previous existing sets of handshakes. These will be activated by mirroring echoes that are similar. It is a highly efficient system to add memories and tie them into the old ones.*

*What we already know shapes what we select and encode; things that are meaningful to us spontaneously elicit the kind of elaborations that promote later recall. Our memory systems are built so we are likely to remember what is most important to us.<sup>22</sup> Think of having gone to the last family reunion where one hundred relatives showed up. You can probably name the one hundred people from memory because of all the deep associations to each one of your relatives: cousins, brothers,*

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<sup>18</sup> Ibid

<sup>19</sup> Ibid.

<sup>20</sup> Ibid.

<sup>21</sup> Ibid.

<sup>22</sup> Ibid.

*spouses, and their children, not to mention that you know them all well. However if you went to a reunion with a hundred strangers and you were introduced to all of them, you most probably would have a difficult time naming even a few of the people that you met with any accuracy.*

*Encoding of novel events involves the hippocampus. Research has shown that brain-injured patients with damage to the hippocampus can produce a severe loss of memory for recent experiences.<sup>23</sup>*

*Attention will produce a series of handshakes to many other regions in the cortex to find similarities with the present stimulus. In the absence of a match the hippocampus is activated to search for other similarities sending its own impulses hoping to find more echoes from the frontal lobe activation and start the encoding process. Once attention is on the stimulus, another network may come on line, involving the left inferior lobe, which in turn makes available, if needed, a wealth of semantic associations and knowledge. In this way the necessary associations with past experience and the novel stimulus can help encode in a manner that will increase the probability of being able to recall the new stimulus. As a consequence, novel events are much easier to remember than events that have been encountered many times repeatedly.*

*There is a concept called an engram, defined as transient or enduring changes in our brains that result from encoding an experience.<sup>24</sup> The brain records an event by strengthening the connections (establishing a handshake) between groups of neurons that participate in encoding the experience. Handshakes will quickly activate all the relevant connections. In the future, when one of the echo signals of any of these differing regions is matched by a new stimulus, the whole network (engram) will be activated. A typical incident in our lives consists of numerous sights, sounds, actions, smells and words. Different areas of the brain analyze these varied aspects of an event. As a result, neurons in the different regions become more strongly connected to one another. This new pattern of connections constitutes the brain's record of the event: the engram.*

*As you read these words, there are thousands, maybe millions of engrams in some form in your brain. These patterns of connections have the potential to enter awareness, to contribute to explicit remembering when the echo signal finds a match and activates the engram; but as long as the echoes aren't matched, these engrams lie dormant, waiting for the right match to be activated by the stimulus. Only a fraction of the original event need be present in order to trigger recall of the entire episode.*

*The brain ultimately engages in an act of "construction" during the retrieval process. Posterior regions of the cortex region that are concerned with perceptual analysis hold on to fragments of sensory experience—bits and pieces of sights and sounds. Various other regions of the cortex contain tags that bind sensory fragments to one another and to preexisting knowledge, thereby constituting complex records of past encodings. A memory is triggered when an echo and its tags simultaneously link sensory fragments that were part of an episode. This retrieved memory is a temporary orchestration of activity in several distinct regions—the voices, the images, the sensations, and the feelings—a reconstruction with many contributors.*

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<sup>23</sup> Ibid.

<sup>24</sup> Ibid.

*An increased blood flow in the frontal lobes (particularly the right lobe) during explicit retrieval reflects the mental effort involved in searching memory<sup>25</sup>. This search for echoes and tags that could be a close match to the required retrieval request is slow and methodical.*

*There are different memory systems using various tactics to encode and retrieve. The active effort of remembering something specific is known as strategic retrieval. When we remember something through associated characteristics it is called associative retrieval.*

*If the strategic retrieval system is impaired and the automatic retrieval process is intact, it should be possible to remember reasonably well in the presence of the right matching of stimulus to an echo.*

*For the rememberer, the engram (the stored fragments of an episode) and the memory (the subjective experience of recollecting the past event) are not the same thing. The stored fragments contribute to the conscious experience of remembering, but they are only a part of it. Another important part is the stimulus and the match with the echoes, which is generally referred to as the cue. The cue activates the engram, which produces a new, emergent entity—the recollective experience—that differs from its constituents.*

*When we encode an experience, connections between active neurons become stronger, and this pattern of brain activity becomes the engram. Later, as we try to remember the experience, a retrieval cue (stimulus matched to an echo) will induce another pattern of activity in the brain. If this pattern is similar enough to a previously encoded pattern, remembering will occur.<sup>26</sup> When we remember, we complete a pattern with the best match available in memory.*

*Memories are an emergent property of the cue and the engram. How do we convert the fragmentary remains of experience into an autobiographical narrative that endures over time and constitutes the stories of our lives?*

*Daniel Schacter mentions three kinds of autobiographical knowledge arranged hierarchically. At the highest level we find lifetime periods: lengthy segments of our lives that are measured in years or decades, say living in Carmel, or when the kids were little. In the middle of the hierarchy we find general events: extended, composite episodes that are measured in days, weeks or months such as playing soccer in college, vacationing at the Grand Canyon, or the first professional job you had. The bottom of the hierarchy would cover event-specific knowledge: individual episodes that are measured in seconds, minutes or hours, such as the moment you first saw the Grand Canyon, the guy that knocked your teammate unconscious, or when you forgot your homework.*

*Lifetime periods help us to find general-event knowledge and event-specific knowledge; they provide the skeletal structure of our autobiographical memories. This leads to the prospect that there is no single representation or engram stored in memory that has a one-to-one relationship with the mental experience of recollecting one's past. Instead, such experiences are always constructed by combining bits of information from each of the three levels of autobiographical knowledge. Just as memories for individual events resemble jigsaw puzzles that are assembled from many pieces, so do the stories of our lives.*

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<sup>25</sup> Ibid.

<sup>26</sup> Ibid.

*What we experience as an autobiographical memory is constructed from knowledge of lifetime periods, general events, and specific episodes. These in turn are put together by images, sounds, thoughts and feelings.*

*Moreover, there seem to be three different long-term memory systems: episodic memory, which is for recollecting specific incidents from our pasts; semantic memory, part of the vast network of associations and concepts that underlies the general knowledge of the world; and procedural memory, which allows us to learn skills and know how to do things.*

*What we see and what we hear, what we think and what we feel are linked together to form new explicit memories by this neural system. Thus they are also essential for episodic memory as well as contributing to the formation of new semantic memories. They are highly selective of novel events.*

*The brain systems that support episodic and semantic memories allow us to recognize objects in the world, to travel in time, and to construct our life stories in a seemingly effortless manner.*

*When people are influenced by a past experience without any awareness that they are remembering, this is defined as implicit memory.*

*The hippocampus with its specialized GABA neurons (inhibitory) that are electrically coupled by gap junctions can activate many interconnected cells at once. In this way signals can be sent simultaneously to many different regions to find a match (or a close match) and activate a small part of a memory. Quickly the when, the how, with whom, at what time, in what period of my life and so on is remembered, not necessarily with complete accuracy. It is a reconstruction process that can be affected by newer experiences, as well as by similar memories.*

*A novel and shocking event might activate a special brain mechanism. The event is so important that the memory might be stored as if a picture has been taken. This “freezes” whatever happens at the moment we learn of the shocking event. It is as if a flashbulb went off. Appropriately, this phenomenon is known as flashbulb memory. Although flashbulb memories are not one hundred per cent accurate, a high level of confidence in a memory is a hallmark of flashbulb memory.*

*Memories of episodes that are highly emotional are different from ordinary memories. Might it be that traumatic emotional memories are unusually accurate and might depend on special brain mechanisms? Stress hormones act on the brain and create a state of heightened alertness and reinforce the circuitry involved in memory formation.*

*Traumatic memories are generally more accurate than other memories, but sometimes are subject to distortion. These distortions are attributable to perceptual errors that occur at the time of the event, caused by the stress of the shocking episode. A related kind of emotional filtering seems to occur with combat “flashbacks” of war veterans, which are often so intense that the veterans report they feel as though they are reliving an actual experience. Flashbacks sometimes contain elements of real, imagined, and/or feared events.*

*Suicidal, depressed patients remember the general emotional gist of past experiences, but do not recollect as many specific details as nondepressed people do. Patients’ depressed moods focus attention on the general negative themes in everyday incidents that fit their previous negative experience. People suffering from depression learn and remember negative events better than positive ones.*

*Thinking in different modalities basically is an exadaptation of our hearing and visual sensory systems. The memory systems that are used by these sensory systems have been greatly expanded (compared to other mammals) and are also interconnected through semantic*

*memory. Thinking, in terms of voices in our head, is an expansion of the use of hearing and the associated memory systems. Similarly, thinking, in visual images, is an expanded use of the cortex areas used to process vision. Thinking and communicating can also be done using body language and motion.*

*What can be more real than our memories? Ultimately, we are only what we can remember of our lives. If we have many happy memories, we will say that we have had a happy life. If, on the contrary, we have many sad memories, we will feel that our lives have been sad. However, as we have seen, what we can remember is often a reconstruction of past episodes using combinations of memories, not necessarily an exact recall in every detail. But we do, in general, retain the gist of what our lives are. We do retain a general notion of who we are, but in a sense these memories are a great illusion created in our brains that allows us to stay alive.*

~

Mitch had a flair for music. He and his brother Freddy took piano lessons when they were ten and twelve, respectively. Later, Mitch taught himself to play the guitar, and from grammar school through college, on and off, he was involved with a band. I have pictures of him in fifth grade holding a guitar and a microphone on a stage with his musician friends. The guitar, easily portable, was his preferred companion when he traveled. When Mitch was home, he always played the piano in our living room. He explored new tunes, new melodies, and rehearsed some of his own compositions.

When he was off to college, his guitar went with him, especially in his sophomore year. His guitar was his copilot in whatever vehicle he was driving. I can clearly see him in the blue Jeep Cherokee, his guitar in the passenger seat, his surfboard and skateboard in the back. When he was home for the summers, he set up an elaborate recording studio that consisted of a PC with certain software to which he could hook up a microphone, amplifiers, electric guitar, and an electric organ. The software also allowed him to write music and play it back on any instrument he selected. In this way he had the percussion and the base to accompany him as he played the guitar or the electric organ and sang into his microphone. He would compose music on the piano, write it on his software, then instruct the software to play it on a base, a flute, or drums. He could play an instrument and sing along and record with the previously “recorded” instruments and mix his final version of the musical piece.

Whenever Mitch was home, we could hear the muffled sounds of his singing and his improvised orchestra through the heating vents that went from the furnace in the basement through the entire house. When, occasionally, his mother or I would go down the basement steps, once we were discovered, he would stop playing, and engage us in a good-natured conversation. We both got the impression that he wanted to be alone as he practiced, or that he became self conscious and a little uncomfortable with our presence. Invariably we would leave. As soon as we did, the music and singing resumed. Sometimes I wondered if he didn't realize that we could hear him singing and playing through all the heating vents in the house.

Here is one of his pieces that I found on a floppy disc:

Fountains

F C Dmin Bb

2into(plucked version) /verse/chorus/verse/chorus/2solo/verse/chorus/chorus

Fountains of green light sparkle under blue skies of memory  
 Wicked people creep under broken glass in a city made of stone  
 Will I see myself in you, a broken violin rang so true  
 Through the mazes, I love faces, it's about the people not the places

Don't say what you don't believe  
 Empty dreams always disappear  
 Your lies, made me reach for the skies  
 Can't let your actions be controlled by fear  
 I Tried, I died, I know I lied

Green pines slipping away to the sky  
 A child's eye on a baseball field waiting for a pop fly  
 Flame colored clouds up above a light of madness flashed with a dove  
 Childhood dreams are gone the memories wont live long

Smoke drifts out of my mouth, the dark clouds roll away  
 And my hammer keeps pounding down to the wound of the pouring rain  
 You're all gone now, I've been down low  
 Don't talk about it just do it go

~

## Awareness & Attention

*C*ontinuing with the brain: arousal is a minimum state of activity in the brain that permits the use of the senses for gathering information from the environment. It involves a preliminary detection system and is mostly concerned with spatial orientation. Awareness is primarily involved with where objects are in relation to the body.

There are at least three awareness systems: a somatosensory awareness that maps the relative positions of all parts of the body with respect to one another, as well as processing information from the tactile and temperature signals sent by all receptors in the skin; a hearing awareness; and a visual awareness. These three awareness systems are closely coordinated by the thalamus. The thalamus refers temporally in a sequential order the stimuli it receives. These three systems working in unison allow for a seemingly effortless body orientation through space. Gustatory and olfactory awareness systems may also be involved.

Automatically, awareness carefully controls eye, neck and head (primarily) movements to center the senses on relevant stimuli as needed as the body moves through space. The awareness systems are genetically pre-wired and are carefully coordinated by the superior colliculus at the top of the mid brain. The superior colliculus receives inputs from the eye, ear and body. These inputs are roughly mapped. The basal ganglia, through the reticular formation, the midbrain and the cerebellum, coordinate body movements automatically to help direct the senses. The neurons in the upper level of the colliculus are very selective for movement, small stimuli in the field of vision and momentary changes of light. All of these are factors that command attention, so the thalamus is automatically activated to do so.

Attention evolved through natural selection to focus on important stimuli conveyed by the senses to the brain. When an appropriate stimulus, determined by the thalamus through matching echoes and incoming sensory signals, is detected, or when a certain threshold of change is detected, the thalamus, through the attentional systems, activates all relevant memories to that particular stimulus; in this way the brain interprets better and quicker what is the nature of the stimulus. Attention ignores most stimuli to deal more effectively with one object or situation. Attention deals with things serially, first with one object, then another. This natural process helps focus on ever-changing internal or external stimuli concerned mostly with appetites, emotions, thoughts (internal) and the changing environment (external).

Attention is necessary for encoding a stimulus for later recall. The handshake (associative) signals that it uses to help interpret what the object is, in what context, where in space and time, will be used to represent the event, and later can be available for recall. The handshakes can include referred information to help keep events in order.

*When attention is focused on extrapersonal space, it constructs the present. Attention is remembering the now. Our previous experiences, the knowledge we have stored, of objects, people, faces, movements, actions and so on, will determine how we construct the present.*

*Semantic memory is continuously integrated to our senses to interpret the incoming signals. Attention filters out unattended events or objects, and, conversely, an attended event is reacted to more rapidly, at a lower threshold and more accurately. Attention helps encode the present and remembering retrieves the past. Remembering is paying attention to the past. The present has the added quality of being accompanied by sensory information that is perceived in almost real time. The past lacks this quality, and attention detects the difference.*

*The thalamus automatically and continuously shifts attention by genetically encoded routines. When the signals from our senses change, the thalamus relays this change and attention shifts to focus on the change. The thalamus achieves this by sending signals to the frontal lobes, which have rich connections to the three other lobes, the hypothalamus, the areas that control eye movement and speech, and to the tegmentum, which coordinates neck movements to orient the senses. The eyes shift ever so often, generally attracted towards moving objects; the hearing shifts from one sound to another, and then back, mostly checking if the sound is still the same. No change means nothing new.*

*Also, after a certain time interval, and there is evidence that this response might be genetically set also: when nothing is new, attention shifts to something else. Attention shifts probably entail a three-step process: disengage, move, engage. Attention focuses the senses on the new stimulus; otherwise, attention, when not activated by the thalamus, will be downgraded to awareness. Awareness is continuously monitoring the spatial and temporal aspects of our environment, as the thalamus is searching for signals, ready to activate attention to be of assistance to deal with the unexpected. Under certain conditions attention can appear to be absent, but sometimes it simply has shifted inwards: attention is focusing on internal handshakes from the entire cortex; attention is focused on thinking or on the body itself; or attention can be in “remembering” mode.*

*The three attentional systems are activated through three sets, each made up of three pathways from the thalamus. When these areas (the visual associative, the auditory integration, and the somatosensory associative) become activated, we feel that we are paying attention.*

*Through interconnections between them, all attentional systems are activated simultaneously: the auditory, the visual and body attention. In this way, there is attention on the environment visually and auditorily with special attention to where the body is in relation to the extrapersonal space. Any one of these attentional subsystems could be activated alone for specific tasks, for example, listening to music or watching a tennis match. When one of these systems is not functioning properly, we might not be aware of it, as we can't pay attention to it.*

*Depending on the nature of the stimulus, as well as the sensory type of input, the thalamus will use a different pathway to relay the stimulus to each of these areas. The thalamus can also speed up a response when needed by getting ready to relay the response signals to the body.*

*Attention also refers events sequentially in time in such a way that the episode, when it becomes part of our immediate past memory, will be perceived as being in concurrence with all our*

*past experiences. The episode will be remembered in the right sequence, as indexed by the thalamus. Even though most everything happened outside consciousness, we still feel that we were not only witnesses to the event, but were active participants and decision makers during the event. We might even remember the event in slow motion, as the adrenalin rushing through our system temporarily sped up everything, including all our cognitive and perceptive functions, as well as our motor responses.*

*The use of the attentional system for what we call remembering is a constructive process. The past is reconstructed from fragments of memories of the event. The reconstruction of a past episode will not only depend on how the different parts of the episode, the where, with whom, when, the how, and so on were encoded, but also on the specific cue that was used to elicit the memory. The difference between remembering and the present is a distinct feeling that the memory is a past part of our lives—we know we are not actually seeing or hearing or feeling the past event, even though we can clearly re-enact or communicate what made up the past event.*

*The brain uses speech to communicate what it is thinking to other brains. When it is not communicating with others, the brain uses an internal speech to think, except that the mouth, tongue and vocal chords are not being activated. It is a process similar to imagining moving a finger, but not really moving it. The brain imagines speaking, but doesn't speak. The brain uses auditory areas to think, crafting, in effect, an internal "voice". When attention is focused internally on these areas it is concentrating on what it is saying, that is, thinking.*

*In the same way that the brain uses the memory systems of our hearing sense to interpret speech, to speak and to think (verbally), the brain uses the memories of the visual system to imagine or visualize, and to manipulate and turn objects in our "mind's eye". The brain can think visually, even though it can only communicate this form of visual thinking by translating it to speech, which could produce distortions from the original thought.*

*Areas in the inferior temporal lobes, lying adjacent and below the auditory integration area and immediately to the front of the visual and auditory integration system, suggest an architecture for thinking, where coordination between these areas and the frontal lobes tap into the incredible stream of memories that is always present as echoes and handshakes throughout the cortex. Thinking is a process that literally happens all over the cortex, tapping into a multiplicity of memory systems and coordinated between the frontal and temporal lobes.*

*When different emotions are deployed, the brain detects these subtle changes in the body, manifesting a particular feeling. What feels like thinking is a continuous stream of memories, and can happen in several modalities simultaneously. What we call thinking is the sounds or visions or body gestures that are endlessly firing away, stored in our memory systems. What we call ideas and imagination is this gushing flow of pulsating neurons that represent combinations of past experiences.*

*Thinking purposefully requires attention. Attention is the mechanism that can bring into focus a desired way of thinking to reach a formal solution or potential course of future action. Attention is a very quick and rich way to access many semantic memories, episodic memories and past experiences and make them available to the thinking process. In this way, attention can activate any one or all of our thinking modes.*

*Thinking logically requires communicating with one's self in a way similar to how we communicate with others; in a way that is comprehensible. Comprehension makes sense of stimuli*

*and ideas. While attention can only be paid to one idea at a time, thinking is a sequential set of ideas flowing in a way that can be comprehended. Coordinating the flow of ideas in such a fashion is a learned process where only some associations are acceptable and others are not. It is a complicated phenomenon, best illustrated with speech; and speech is best learnt as a child. Once past a certain age, if one was not exposed to spoken language, this ability is lost.*

*The modality in which we think, see, speak or use body language depends on what attentional subsystem is being excited. Of course we can think in parallel in all of these modes simultaneously. Different emotions produce subtle changes in the body and brain and affect the modes of thinking by making certain memories more accessible and others less so. In this way, emotions push thinking in certain directions that have proven successful in the past. It is the richer gamut of memories that humans (compared to other mammals) can store combined with a stronger attentional system that produces what we call a greater intelligence. This intelligence is measured not in what we can think, but in the problems that we can solve. What we can think compared to other animals, is probably just a question of degrees. Moving up the evolutionary ladder, intelligence is just a question of shades of gray.*

*When attention is focused internally on any one or all of these three attentional centers, we have access to the rich internal space that we call ourselves—our memories, our thoughts, our visions, our aspirations, our appetites, our bodies and our feelings.*

*Two distinct processes can shift attention. One is emotional; it switches the focus of attention to the emotional competent stimulus (ECS) if it is considered more important. The other is a voluntary control, which also plays a role in deciding if the emotional competent stimulus is or not more important. The prefrontal lobes have rich connections to the thalamus and can signal it to shift attention. Also, the frontal lobes have been associated with executive functions that are involved in weighing alternative possible courses of action as well as implementing them. This is where decision making takes place, allowing you to choose from different courses of action according to what is happening in the present—what you remember and know about the situation and what can possibly happen in the future according to past experience of different actions.*

*In complex tasks involving multiple kinds of mental activities, executive functions plan the sequence of mental steps and schedule the various activities, switching attention as needed. Voluntary control, like attention, can only do one thing at a time. It can initiate a multiplicity of movements or a sequence of activities, but these, once initiated, become automatic. Voluntary control is goal oriented. The executive system can be overloaded if it has to work on unrelated goals at the same time, especially if the goals conflict with one another.*

*Understanding the normal functioning of awareness and attention is basic to begin to comprehend mood disorders.*

~

When I was a young father, and my wife had just become pregnant with Mitch, Enrique Gomez Vadillo, my dear friend and godfather to Freddy, called me asking for help. A couple of years before I had done the translation of the play *Equus* by Peter

Shaffer, and worked as assistant director when the play was rehearsed in Mexico City under Enrique's direction and production. I had also supervised the construction of the set, the lighting, and the choreography for the actors playing the role of the horses. The play went on to be one of the longest running dramatic productions in Mexico City. Enrique was wondering if I could be in charge of the theatrical troupe that was going with *Equus* on tour around Mexico. The sixty-day tour, with a couple of breaks in between, was divided into several phases: the southeast, starting with Merida and coming back the Gulf Coast; the Pacific coast, starting with Guadalajara and moving north; the central part, starting with Ciudad Juarez and returning to Mexico City; and finally, Monterrey and Saltillo, returning south to Mexico City.

During the weeks of traveling together, I reestablished my friendship with the actors and actresses of the company. Eventually, in the final leg of the tour, we arrived in Monterrey.

After our first two performances the first night, I was returning to our hotel with Maritza, the young good-looking actress who was playing the role of the girlfriend of one of the main characters, and Ariadne, a very good-looking mature woman in her early forties, who was playing the role of the lawyer.

"A friend of mine is playing with his band at that bar," Maritza said, pointing to a nightclub across the street from our hotel in downtown Monterrey. "Let's go have a drink."

"I'm game if Federico comes with us," Ariadne responded. "I don't want to be in a bar alone."

"I'll go with you two if you promise to behave. I don't want any problems with having to fend off suitors or your raving fans. So, if you promise not to flirt and be discreet, I'll go." This I said, as it had been my experience over the course of our travels in the recent past, that these two good-looking women could easily attract attention.

"I promise to be good," Ariadne said, smiling coquettishly. "And we will go for only one drink. I'm a little tired."

I turned to Maritza. "I'll be good, don't worry," she promised.

So the three of us crossed the street and entered the nightclub. We were seated towards the back. There was a built-in bench on the back wall; small tables were bolted to the floor with a few leather stools around each table. Maritza and Ariadne sat on the bench with their backs against the wall. I sat in a stool next to Maritza. My back was towards two couples in the corner booth. One couple sat adjacent to Maritza and Ariadne on the built-in bench against the wall; the other couple, at ninety degrees to them as the built-in bench curved around the corner of the nightclub.

We ordered a round of drinks, then Maritza got up to go to the bathroom. She walked behind me between the two tables. The man sitting next to Maritza had his left foot in the small space that served as an aisle between our two tables, and in the darkness, Maritza tripped and almost fell. She regained her balance and turned to

look at the man. The man didn't move his foot or apologize. Maritza turned and proceeded to go to the ladies room.

After she returned and sat down, I leaned towards her and, as a joke, almost in a whisper, said, "You promised to be good. I saw you. You tripped on purpose looking for any excuse to flirt with our neighbor."

"I did not and you now it. It's just dark, I didn't see his foot."

"What the hell are you saying about me?" the man yelled.

"Excuse me, Sir. I was not talking about you. I have no reason to do so, I don't even know you," I said amicably trying to defuse what seemed a stupid situation. "I was just talking to my friend; nothing related to you, Sir."

"Don't lie to me!"

"I have no reason to lie, Sir. Once again, I apologize if anything we did offended you. It was not our intention," and with that I turned to our table.

A few moments later, the band returned to the stage from their break, acknowledged the presence of my two beautiful companions, then began playing their music.

"I think we should finish our drinks and go," Ariadne said, reinforcing what Maritza and I were thinking.

Just then, Manuel, one of the young actors, who was playing the role of one of the horses, walked into the nightclub, spotted us and came over. He sat on the stool to my right. I said softly to him, "Don't turn, but the guys sitting behind us are kind of weird; we're just finishing our drinks and we're leaving." A few moments later he turned to look at them.

"What are you looking at?" the man directly behind Manuel asked in a menacing tone.

"Nothing, Sir. I was just getting my bearings. I'm sorry," Manuel said, and he turned back to our table.

Suddenly, the man directly behind Manuel grabbed him by the hair and violently jerked his head back. "When I'm talking to you, you don't turn away!" he yelled into Manuel's face. As he screamed, I reacted. Without thinking, I jumped on our table. I knew that it was bolted to the floor, and I guess I felt that in a scuffle I would have a little extra advantage standing on the short table. It also opened my only avenue of escape, as I was trapped with Manuel pinned down to my right, Maritza to my left, and my back to a potential aggressor.

The other man, the one sitting next to Maritza, had also stood up immediately. He yelled to me, "Don't move or I'll kill her!" I was looking straight into his eyes and I didn't quite understand what he meant. I vaguely heard someone shout something about a gun; that focused my attention. He was holding a gun with his left hand and had pressed it against Maritza's stomach. I raised both hands. "Sir, you don't need to worry about me. We meant no harm, and certainly no insults. This is a misunderstanding. We were just leaving," I rattled quickly trying to defuse the situation.

“You are an asshole. Go fuck yourself!” he yelled at me. “You make the wrong move and your friend is history.”

“Yes, Sir. Whatever you say. Whatever you say, just calm down,” I said still holding up my hands. In retrospect, I don’t know how or when, but I already knew that this man was left handed (because he was holding the gun with his left). I kept looking into his eyes, even though my attention was focused peripherally on the gun.

“You are an idiot!”

“Yes, Sir.”

“You think that you can come here and do whatever you like!”

“No, Sir. I apologize. What would you like me to do?”

Suddenly he lowered the gun ever so slightly. Without thinking (I was a new father with a baby, I couldn’t have been thinking), I went for the gun barrel with my right hand and pushed it against the wall. Again, I don’t know how, but I knew that everyone would be standing and if the gun fired, the bullets would fly parallel to the wall; everyone standing would be about a foot away from the path of the bullet as long as I could hold the gun against the wall. With my shoulder and head, I had pinned the man against the wall, and with my left hand I had his right hand held down. I pushed him against the wall, exerting leverage by pressing with my legs and feet on the table bolted to the ground. The gunman, having the seat of the bench pressing him behind his knees, was thrown off balance and in an awkward position. He struggled unsuccessfully to free himself, yelling obscenities in my ear. I held on and apologized softly, agreeing with everything he said.

At that moment, I realized that I was holding a gun barrel and wondered if his shooting the gun would burn my palm. I also realized that my only alternative if this happened was to hold on to the barrel no matter what. A burnt hand would be a small price to pay to make sure nobody was shot. I also realized, that if I had been properly trained, I could have killed this man in the same instinctive way I went for his gun. But, fortunately for him and me, I wasn’t properly trained; now I only wanted to get out of this situation.

I felt the man stop struggling, and I was able to push the barrel of the gun downwards. I took this as a sign that perhaps he, too, had acted on impulse, and was now looking for a way out. I let go of the gun barrel and stood up slowly on my table and raised my hands as a sign of acquiescence. I turned to see if Manuel had been released, but he was still pinned back against their table. I could see he had a glass in his right hand out of sight ready to strike the man who had him pinned. With my eyes, and somehow he understood, I indicated to let go of the glass; it could only make things worse for him.

I was looking at Manuel, making sure that no surprises would come from my back before turning back to Maritza’s assailant. The gunman used this opportunity to hit me with the butt of his gun in the middle of the head. I think I passed out, because my next memory is of lying on my back on the table and seeing an empty bottle of Bacardi fast approaching my face. I was able to lift both my hands to deflect

the bottle. It broke against my right wrist and left fist. Simultaneously, a man had grabbed me by the shirt and pulled me away helping me to my feet.

“Calm down,” he said to me.

“I am calm, believe me,” I said to my savior

The two men had their guns drawn and were pointing them at all of us as they walked backwards with their women towards the entrance of the nightclub. “Nobody move!” they yelled as they retreated.

“Cowards! Faggots! Assholes!” Maritza was yelling at them. “Someone call the police!

“She’s the one that needs calming down,” I said to the man that had pulled me from the table. Blood was dripping down my face from my head. I had many small cuts in both hands.

“They’re getting away! Call the police,” Maritza shrieked.

“They are the police,” somebody said.

The two gunmen and their women walked out of the club into the night.

“Calm down, Maritza. It’s O.K.,” I said.

“It’s not O.K.,” Ariadne said turning to me. “How are you? Are you all right?”

“I’m fine.” I touched the small opening in the top of my head. “Ouch. How is Manuel?”

He was sitting where his assailant had sat, with his back against the wall. He stood up. “I’m fine. You’re the one that looks a mess.”

A few stitches later I was fine.

I am still amazed at how I reacted instinctively, at least that is what I call it; one moment I was standing on a table with my hands up in the air, wondering if this man was a real threat or not, and then without thinking I had suddenly lunged for the gun. I had somehow concluded that I couldn’t afford to find out if he was or wasn’t a threat: I simply was going to make him a non-threat. I still wonder if my instinctual behavior was correct. Would any other actions have produced a better outcome? If I had been trained to kill, would the other man have killed me after I killed his friend? If Manuel had attacked his assailant with the glass in his hand, what would everyone else’s reaction have been? In retrospect, my instincts were right. Nobody was hurt, except of course, for my minor injuries. But I feel lucky I got off so lightly.

As it turned out, they were policemen, and easily identified. A few hours later they were arrested. Assault with a weapon with the intention to hurt: Ten years. That was their sentence.

## Emotions & Fear

*In this section on emotions, I borrow ideas from Antonio Damasio's book *The Feeling of What Happens*, and Joseph LeDoux's book *The Emotional Brain*. However, any changes and departures from their ideas are my responsibility.*

*From our own experience, we know that emotions can be most varied. Some responses are easily apparent; think of the muscles in the face adopting configurations that are typical of joy and sorrow or anger, or of the skin blanching as a reaction to bad news or flushing in a situation of embarrassment. Consider the body postures that signify joy, defiance, sadness, or discouragement; or the sweaty and clammy hands of apprehension; the racing heart associated with pride or the slowing, near stillness of the heart in terror.*

*Emotions trigger myriad chemical changes; release hormones into the bloodstream; and produce a series of changes in the organs, body and brain. When the brain experiences emotions, the hypothalamus, basal forebrain and brain stem release neurotransmitters, such as monoamines, norepinephrine, serotonin and dopamine, and by so doing, temporarily change the working of many neural circuits. As a consequence of the increase or decrease of these neurotransmitters we have a sense of thoughts speeding up or slowing down, as well as a sensation of pleasure or unpleasantness.*

*The changes are controlled by two different routes: the bloodstream, where chemical molecules act on receptors in the cells that constitute body tissues; and, neural pathways where the electrochemical signals are sent to other neurons, muscular fibers or organs (such as the adrenal gland) which in turn can release chemicals of their own into the bloodstream. The result of this coordinated chemical and neural change is a change in the state of the organism. This includes changes in the body and the brain itself. The release of neurotransmitters alters the processing mode of numerous brain circuits, triggering certain specific behaviors (e.g., bonding, playing or crying), and modifies the signaling of body states to the brain.*

*Pain and pleasure are two different regulatory modes. Pain causes organisms to close themselves in, freezing and withdrawing from their surroundings. Pleasure, on the other hand, is associated with behaviors such as seeking and approaching. Pleasure causes organisms to open themselves up and out towards the environment, approaching it, exploring it, thus increasing both their opportunity for survival and their vulnerability.*

*Different emotions are produced by different brain systems. However, the brain induces emotions from a remarkably small number of brain sites, most of them subcortical. The main subcortical ones are in the brain stem region, hypothalamus and basal forebrain.*

*Emotions are the result of largely unpredictable combinations of several concurrent regulatory processes engaged as reactions to whatever internal metabolic adjustments are needed; and coordinated with whatever external situations are being handled by other emotions, appetites, or*

*intellectual calculations. This ever changing result of this cauldron of interactions is our “state of being”; good, bad, or in-between. When asked, “How we feel,” we consult this “state of being”, and answer accordingly.*

*Each emotion helps the brain monitor the state of the body and indicates a slightly different state. The perception of an emotion is what we call feeling. This feeling will be specific to each emotion. We speak of the thrill of surprise, the tingling sensation that goes down the back when something extraordinary happens; twinges of guilt; throbs of passion; pangs of sadness; gnawing grief. Our language reflects a changing physiology as feelings shift. These subtle changes in physiology also affect the brain. Memories of past experiences and feelings are intimately woven and trigger each other. Particular tastes and smells, not surprisingly, have strong links to memories and feelings.<sup>27</sup>*

*There have been many attempts at classifying emotions in various categories. Most of these have been manifestly inadequate. Antonio Damasio<sup>28</sup> finds it helpful to classify the emotions in three tiers: background emotions, primary emotions, and social emotions.*

*Background emotions are very subtle, but remarkably important. These can be like slight malaise or excitement, edginess or tranquility, energy or enthusiasm. They reflect very small changes in the internal state of the body, and are so subtle that they are only felt when attention is focused on them. Background emotions are the consequence of deploying certain combinations of simple regulatory reactions (e.g., basic homeostatic processes, pain and pleasure behaviors, and appetites). Background emotions can be distinguished from moods, which refer to the sustaining of a given emotion over long periods of times, lasting hours or days.*

*Primary (or basic) emotions are easier to define because the most common emotions are in this group. The frequent list includes fear, anger, disgust, surprise, sadness and happiness. There are good reasons for this centrality. These emotions are universal across cultures and in non-human species as well. The circumstances that cause the emotions and patterns of behavior that define them are also quite consistent across cultures and species.*

*The social emotions include sympathy, embarrassment, shame, guilt, pride, jealousy, envy, gratitude, admiration, indignation, and contempt. A whole retinue of regulatory reactions along with elements present in primary emotions can be identified as subcomponents of social emotions in varied combinations. The nested incorporation of components from lower tiers is apparent. Think of how the social emotion “contempt” borrows facial expressions of “disgust”, a primary emotion that evolved in association with the automatic and beneficial rejection of potentially toxic food.*

*In some instances, emotional responses are innate; in others they may require help from an appropriate exposure to the environment.*

*Emotions guide organisms’ behaviors by activating or suppressing certain brain circuits and produce automatic reactions. Organisms can achieve a positive result without feeling an emotion or even deciding to produce the reactions that lead to the positive result. These automatic emotions*

<sup>27</sup> Antonio Damasio, *The Feeling of What Happens*.

<sup>28</sup> Ibid.

*create conditions in the human organism that, once mapped in the nervous system, can be represented as pleasurable or painful and eventually known as feelings. We humans, conscious of the relation between certain objectives and certain emotions, can willfully strive to control our emotions, to some extent.*

*As we develop as humans, most objects that surround us can trigger some form of emotion or another, weak or strong, good or bad, and can do so whether we are conscious of the emotion or not. Some of these triggers are set by evolution, but some are associated in our brains with emotionally competent objects by virtue of our experience.<sup>29</sup>*

*An emotionally competent stimulus is one that produces an emotional reaction. The process starts with an appraisal-evaluation phase, initiated by the detection of an emotionally competent stimulus (the ECS).*

~

A couple of hours after I learned of Mitch's death, I had left a message for Freddy, "This is your father. Call me at home when you get this message."

About an hour later he called back.

"Freddy, I need to see you. Something bad has happened and I think it is best if you come home tonight." I said, thinking that it was better for him not to know of his brother's death while driving home from San Francisco.

"Like what kind of bad?"

"Its just bad. I prefer to tell you in person. Forgive me for this, just trust me." I was making a huge effort to not break down.

"Do I need to take any clothes?"

"I guess not," I answered trying to make it seem that whatever was so bad, wasn't that terrible.

"Then, I guess I'll see you in a couple of hours, dad."

"I'll see you in a bit, Freddy," I was able to add as I hung up.

About one hour later, I realized I was still in my tennis clothes. I felt paralyzed as far as being able to shower and change my clothes, or anything else for that matter. I did, however, feel that it was important to look good when Freddy arrived. I thought it was imperative that I should look elegant on this momentous occasion to give it some deserved solemnity. I owed this much to my two sons. I could only muster, with much effort, a silk bathrobe on top of my tennis shorts. It was somewhat late at night and I felt it would be appropriate that the owner of the house be clad in a silk bathrobe. Hopefully, I would be presentable enough.

I went out to the front of our house to wait for Freddy. I preferred that his mother not see him when he heard the bad news. Also, this would give him a moment to compose himself before he faced his mother.

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<sup>29</sup> Ibid.

I saw the lights of his car approaching our house coming through the gates. He stopped the car, killed the engine as I walked up to open his door. He got out and looked me in the eye.

“You have no children, so this is probably the worst news I could give you. Mitch called me yesterday and told me he wasn’t feeling well.”

“No! Noooo!” Freddy yelled as we embraced and I quickly realized that he had figured out what the bad news was. I held him tight as I told him some of the details. In time, he calmed down enough to go into the house and see his mother.

A few weeks later, early one evening, Freddy came home for the weekend to visit us. By chance, I happened to be in front of the house in my bathrobe. He later told me, “The sight of you in your bathrobe waiting for me, immediately brought on the huge fear I felt that terrible night when Mitch died. Only through great effort was I able to keep myself from loosing it, and only after I greeted you and confirmed there was nothing amiss, was I able to calm down completely.”

“Hopefully, that will never happen again. But, also, Freddy, I will not hang out in front of the house in my bathrobe, waiting for you, ever.”

~

*In neural terms, images related to the emotionally competent object must be represented in one or more of the brain’s sensory processing systems, such as the visual or auditory regions. This image is made available to emotion-triggering sites in the form of an echo signal with a tag.*

*These sites, as they continuously receive the echoing signals from the cortex, try to match the incoming sensory signal to any one echo that might match an ECS. If a match is found, it will activate a number of emotion-execution sites elsewhere in the brain. These sites cause the immediate changes that occur in the body and the brain regions that support the emotion-feeling process. The process can reverberate and amplify itself, or shrivel and close down.*

*In the language of neuroanatomy and neurophysiology, this process begins when neural signals of a certain configuration that are holding patterns corresponding to the threatening object originate in the visual cortices; these match the echoes and handshakes that help signal that the object is threatening; they are relayed in parallel along several pathways to several brain structures. When a match is found (by the thalamus between stimulus and echo), the amygdala will be activated and send signals to other brain regions, thus producing the cascade of events that will become an emotion, in this case, fear.*

*The amygdala is an important interface between visual and auditory ECS and the triggering of emotions, in particular, but not exclusively, fear and anger. When the amygdala is damaged, fear and anger are not possible. Activation of the amygdala shows a linear relationship with decreasing intensity of happiness and increasing intensity of fear.*

*Emotionally competent stimuli are detected very quickly, ahead of selective attention. When parts of the visual cortex are damaged in a way that cause a blind field of vision (e.g., certain categories of objects can’t be seen), an emotionally competent object (e.g., a happy face) nevertheless*

*breaks through the blindness barrier and is indeed detected. The triggering emotional machinery captures these stimuli as they bypass the normal channels—channels that might have led to cognitive appraisal but simply could not do so because of the blindness. This is accomplished by setting up an echo signal with a tag that, when matched in the future, will automatically trigger an emotional response even before the stimulus is processed cognitively.*

*The ventromedial frontal area and especially the orbital cortex are tuned to detecting the emotional significance of more complex stimuli, for example objects and situations, natural and learned. Social emotions are triggered by complex and specific patterns of handshakes that when presented together are recognized as emotional competent stimuli through genetic and learned responses from our parents in our childhood. Once these conditions are met, the emotional competent stimulus will trigger a signal by the ventromedial frontal area to the thalamus, and the appropriate chemical and neural responses will be set in motion to produce the suitable emotion with all the body and brain changes that this implies.*

*Facial expressions, vocalizations, body postures, and specific patterns of behavior (e.g., running, freezing, parenting) are thus enacted. The body chemistries as well as organs, such as heart and lungs, assist. Emotion is all about transition and commotion, sometimes real body upheaval. In a parallel set of commands the brain structures that support image-production and attention change as well. Some areas of the cortex become less active while others become especially active.<sup>30</sup>*

*Emotions help to elicit certain memories to initiate adequate behaviors in response to particular stimuli. They manage this in three ways: (1) they activate memories related to the specific emotion; (2) they intrude on the attentional systems; and (3) they initiate certain behaviors (motivations) like fleeing or moving towards the stimulus. Motivation is used here as a term that refers to neural activity that guides us to a goal, outcomes that are desirable and for which we will exert effort, or the opposite, one that we dread and will exert effort to prevent, escape from, or avoid.*

*Emotions do not only elicit specific, related memories and behaviors, but also, through the external expression of these emotions, communicate these emotional changes to others. What is known in psychotherapy as transference and countertransference is a continuous process of emotional information transfer between individuals. Species-specific, emotional-expressive displays in the sender activate the attentional systems of the receiver, thus becoming emotionally competent stimulus. As such, the expressive displays automatically trigger the same emotion in the receiver.*

*There are three emotional regulation modes: 1) an interactive regulation via two or more emotionally interacting individuals, the emotional information transfer; 2) an interactive regulation through the external changing conditions that change the internal emotional state; and 3) a self-regulatory process, based on feedback and automatic tendencies to reach a neutral state of calmness.*

*The isorropic circuit (from the Greek, isorropia=balance) primarily comprised of the septal nuclei and the habenulas is an emotional arousal and, balancing and tuning system. Its major inputs are signals from the hippocampus and thalamus. Positive emotions are associated with a very slight increase of neural activity in the whole brain, and activation of the left anterior cingulate cortex, relative to the right. Conversely, negative emotions are linked to a slight decrease*

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<sup>30</sup> Ibid.

*in neural activity overall and activation of the right anterior cingulate cortex, relative to the left. The isorropic circuit summarizes the activity of the entire brain, taking into account emotions, cognitive signals translated into contexts and meanings, and accordingly, fine-tunes the signals of all neurotransmitter systems in the brain stem. The primary function of this circuit is to try to balance activity in both hemispheres, continuously attempting to restore neutral calmness.*

*The subtle wandering of the activity of the isorropic circuit potentially generates and regulates a wide spectrum of emotions as response to changing conditions. The speed of these subtle emotional changes activates a greater pool of associated memories producing the maximum variety of possible responses to each moment. This places the organism in a state of maximum adaptability. When the brain detects this healthy state of maximum adaptability of the body/brain (organism) it is perceived (felt) as a sense of self. The wider the spectrum of emotional responses that can be triggered, the more intense the sense of self is felt.*

*In extreme cases, when the isorropic circuit is pushed far enough from neutral balance, the brain can't perceive a sense of self; the organism can no longer adapt. The sense of self is an indirect measure of the organism's capacity to adapt.*

*The system used to defend against danger is different from the system used for procreation. The feelings that result from the emotions generated, fear and sexual pleasure, do not have a common origin. There is no such thing as the "emotion generator" and there is no single brain system dedicated to create all emotions. Perhaps, then, we need to focus on classes of emotions. Brain regions have functions because they are part of integrated systems. Mental functions involve many different regions working together; each function requires a unique set of interconnected regions, forming its own system. Many regions might be used by different systems.*

*The information from the senses, as we have seen, passes through the thalamic relays on its way to its specialized cortical areas. These thalamic regions are specialized in matching the echoes of the cortex with the inputs from the senses and then mirroring those signals; ear signals are sent to the auditory cortex, skin sensations are routed to the somatosensory cortex, and the eye signals are relayed to the visual cortex.<sup>31</sup>*

*When appropriate (a signal matches a certain echo), the thalamus signals the amygdala. The amygdala will also receive signals from other areas of the cortex. In this way the various signals fine-tune the amygdala's responses.*

*The signals that reach the ear are transmitted to the auditory brainstem nucleus (cochlear nucleus), then cross to the opposite side to the inferior colliculus of the midbrain. Axons then travel to the auditory thalamic relay nucleus, the medial geniculate. From there the signal is relayed to the amygdala if the thalamus determines it to be a danger signal (because of the match between stimulus and the echoes with tags arriving from the cortex). The signal is also mirrored (relayed) to the auditory cortex (because of the echo), which in turn is made up of several regions and sub regions.*

*The amygdala—through the central nucleus—connects to the brain stem areas that are involved in the control of the heart rate and other autonomic nervous systems. The stimulation of the central nucleus elicits freezing responses. Lesions to the central nucleus interfere with every*

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<sup>31</sup> Joseph LeDoux, *The Emotional Brain*.

*measure of conditioned fear: freezing behavior, autonomic responses, suppression of pain, stress hormone release, and reflex potentiation. Because of the matching to a danger echo, the auditory stimulus also travels from the thalamus to the lateral nucleus of the amygdala. The lateral nucleus seems to receive the conditioned response signals; the central nucleus, together with the hypothalamus controls the activation of the response control systems.*

*Neurons that project from the thalamus to the primary auditory cortex are narrowly tuned—they are very particular about what they will respond to. Cells that project to the amygdala respond to a much wider range of stimuli and are said to be broadly tuned. When two similar sounds are used in a conditioning response, the thalamus will send the amygdala essentially the same information, regardless of which stimulus it is processing (the echoes are a close enough match), but after the cortex processes the different stimuli, it will send the amygdala different signals. The amygdala receives the danger signal at the same time that the auditory cortex does. The auditory cortex interprets the signal for any emotional content and then signals the amygdala.*

*Although the thalamic system cannot make fine distinctions, it has an important advantage over the cortical input pathway to the amygdala: time. It takes about twelve milliseconds for an acoustic signal to reach the amygdala through the thalamic pathway and twice as long through the cortical pathway. The thalamic pathway can't tell the amygdala what is there, but can provide a fast signal that warns that something dangerous may be there; it is quick and dirty.<sup>32</sup>*

*Imagine walking through the forest. A crackling sound occurs; it goes straight to the amygdala through the thalamic pathway. The sound also goes from the thalamus to the auditory cortex, which recognizes the sound to be a dry twig that snapped under the weight of your boot or a rattlesnake shaking its tail. By the time the prefrontal cortex processes the difference, the amygdala already has started a fear response to the potential rattlesnake. The information from the thalamus is unfiltered and biased to provoking a reaction. The prefrontal cortex's job is to prevent the inappropriate response rather than to produce the appropriate one.*

*Alternatively, suppose there is a slender, curved shape on the path; the curvature and slenderness reach the amygdala through the thalamus that received it from the eye. If it is a snake, the amygdala is already ahead of the game. The fight-flight response is automatically activated. If it isn't a snake, the prefrontal cortex would then send a signal to the amygdala to stop the response, in essence confirming a false alarm. The cost of treating a stick as a snake is less, in the long run, than the cost of treating a snake as a stick.<sup>33</sup>*

*It has now been established that the amygdala and the prefrontal cortex are reciprocally related: in order for the amygdala to respond to fear reactions, the prefrontal region has to be shut down. Pathological fear may occur when the amygdala is unchecked by the prefrontal cortex. Clearly, decision making in emotional situations is impaired when there is damage to the medial and ventral prefrontal cortex. Possible therapies might involve methods to increase activity in the prefrontal areas so that the amygdala is less free to express fear.*

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<sup>32</sup> Ibid.

<sup>33</sup> Ibid.

*The medial prefrontal cortex may serve as an interface between cognitive and emotional systems, allowing cognitive information to regulate emotional responses. In return, emotional processing in the amygdala might influence decision-making (by the types of handshakes sent out) and other cognitive functions (how the signals are interpreted) of the prefrontal cortex.*

~

I was up on an eighteen-foot ladder, almost two stories high, installing a water tank for a solar heater. I needed to drill a few screws into the wall to fix a metal support for the tank. As I exerted pressure on the drill, my feet exerted pressure on the ladder, which stood on a mossy patio. As a result, the ladder's feet slid on the slippery moss. Immediately, adrenaline, as part of the fear response, rushed through my body. My thoughts speeded up, and the fear was immediately placed into the context of falling. As the ladder slipped, seemingly in slow motion, I quickly concluded that I could not afford to stay on the falling ladder, as surely I would break both legs when they got tangled in the ladder's rungs. Once that decision was made, I jumped off the ladder, to face a slightly different situation—freefall from seventeen feet up. My mind focused on what kind, and how many fractures I would sustain as I hit the cement floor. But as I fell, in mid air, in a flash, I saw myself in our backyard on my swing, gaining speed and height, and then shooting off the swing following a parabolic trajectory that would take me twelve-fourteen feet high; then, clearly, at high speed, I remembered when I was ten years old and practiced rolling onto our lawn (as I also did when I shot from the swing) as I jumped many times from a twelve-foot wall. My course of action crystallized as I concentrated on rolling the instant that I touched the ground to brake my fall. When I landed, I rolled, feet to knees, right arm to shoulder, tucked my head under, curled, on my back, then buttocks, feet forward . . . and got up without a scratch.

*The amygdala by way of its connections with the hippocampus and other regions of the explicit memory system strengthens the relation between emotions and the event. Later, an emotion will more easily activate the related memories. On the other hand, the connections from the hippocampus, perhaps, help recreate the emotion that is related to a memory.<sup>34</sup> The hippocampus places the emotion into a context by activating the related objects that made up similar events.*

*Interestingly the thalamo-amygdala and cortico-amygdala pathways converge in the lateral nucleus of the amygdala. Once the signal is received there, it can be relayed through the internal amygdala pathways to the central nucleus, which in turn releases the full repertoire of defensive reactions. The amygdala sends impulses to the hypothalamus to release a hormone called corticotrophin releasing factor, or CRF, which signals the pituitary and adrenal glands to flood the bloodstream with epinephrine (adrenaline), norepinephrine and cortisol. These stress hormones*

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<sup>34</sup> Ibid.

*shut down nonemergency systems, such as digestion and immunity, and direct the body's resources to fighting or fleeing. Perspiration increases to regulate body temperature, breathing quickens to take in more oxygen, the heart beats faster, the liver releases sugar into the blood for added energy, blood pressure rises. All the benefits produced by this response to a passing threat can, over a longer term, wear the body down. Constant stress can lead to impaired memory, a weakened immune system, high blood pressure and stomach ulcers.*<sup>35</sup>

*Under normal conditions, fear is a short-term response to an immediate threat signaled by the amygdala as stress hormones are released by the paraventricular hypothalamus. Anxiety is a long-term response compared to fear. Anxiety is an emotion triggered by unpredictable threats from stimuli that indicate something is not right.*<sup>36</sup>

*We can think of a fear circuit in a simplistic way: danger stimulus goes from senses to thalamus. If a match is made between a dangerous stimulus and a dangerous echo, the signal is sent to the amygdala. Simultaneously, the signal is relayed to the sensory cortex. The amygdala triggers the fear response. The sensory cortex processes the stimulus, determines what it is and passes it to the prefrontal cortex, which in turn, will determine if the stimuli is or isn't a threat. If the prefrontal cortex determines it is not a threat, it will signal the amygdala to dampen and stop the fear response. If it determines it is a threat, it will quantify how big of a threat and signal the amygdala to reinforce or dampen the fear accordingly.*

*The hippocampus will be alerted when a danger stimulus has been matched and will quickly assess the context of the stimulus; in the right context, the hippocampus will signal the amygdala and reinforce the fight-flight response accordingly. If the stimulus is in a wrong context, the hippocampus will signal the amygdala and the fear response will be dampened. The hippocampus signals can override the signals from the sensory cortex as they enter the amygdala farther down the fear circuit. In the absence of a signal from prefrontal cortex and the hippocampus, the amygdala locks into a positive feedback loop and the fear response automatically escalates slowly until, in less than ten minutes, it can become a panic attack.*

*People suffering from panic attacks and phobias have lost the ability to turn the fear response off. Panic attacks can happen within the context of any Anxiety Disorder as well as any Mood Disorder. The sense that something is wrong and beyond control might be enough of an emotional competent stimulus to trigger an attack.*

*The attack has a sudden onset and builds to a peak rapidly and is often accompanied by a sense of imminent danger or impending doom and a strong urge to escape. The anxiety that accompanies a Panic Attack can be differentiated from generalized anxiety by its discrete nature and its typically greater severity.*

*When the thalamus incorrectly detects a danger signal, confusing a signal with the wrong echo (one that is not reflecting the ECS), it triggers the fear mechanism. The signal is then mirrored to the cortex. A real threat would be mirrored to the right area of the cortex, and in turn the cortex would signal the amygdala and reinforce the original thalamic signal. In normal*

<sup>35</sup> Robert M. Zapolsky, *Why Zebras Don't Get Ulcers*.

<sup>36</sup> Joseph LeDoux, *The Emotional Brain*.

conditions, if the processing of the signal were determined to be no threat, the cortex would signal the amygdala and quickly dampen the fear. In a panic attack, the signal was mirrored to an area that does not detect threats (because of the confusion between signal and echo) and consequently this area does not signal the amygdala either way. The hippocampus isn't alerted either and it also doesn't detect a threat, because there is none or the context doesn't indicate a threat either. The amygdala continues with the fear response and it quickly escalates. When the Panic Attack is triggered for no reason and is completely unexpected it is termed uncued.

When the thalamus detects a signal and matches it to a danger echo, it initiates the fear response and mirrors the signal to the cortex; and when the cortex evaluates the danger and does not signal the amygdala that it was a false alarm (it's a stick not a snake), the amygdala continues escalating the fear signal. This is what is known as a situationally bound (cued) Panic Attack.

Finally, there can be a situation in which the thalamus matches a stimulus to a dangerous echo, initiates the fear response, mirrors the signal to the appropriate area in the cortex, the appropriate signal is sent to the hippocampus to evaluate the context, but the hippocampus fails to evaluate that the signal is in the wrong context, and sends a danger signal, instead of a false alarm signal, to the amygdala. This signal (the stick bites, watch out) overrides the sensory signal (it's a stick not a snake; sorry, false alarm). This is known as situationally predisposed Panic Attack. The attack is similar to situationally bound Panic Attacks but is not invariably associated with the cue. Sometimes they happen and sometimes they don't, or the Panic Attack occurs sometime later as the hippocampus belatedly sends a danger signal.

It is clear that there are small differences in each of these different types of Panic Attacks, and each one will require a different therapeutic approach.

The essential feature of Panic Disorder is the presence of recurring, unexpected Panic Attacks followed by at least one month of concern over having another Panic Attack or worry about the possible implications or consequences. There can also be a significant behavioral change related to the attacks.

Distinct from fear and anger, which are clarifying emotions, anxiety, an error-detecting scheme, often is confusing. Anxiety can be resolved by figuring out what is wrong and correcting it, or simply by realizing that there is nothing wrong and dampening the anxiety.

In short, the amygdala receives low level (rough) sensory signals from the thalamus, higher level information from sensory-specific cortex, and still higher level (sensory independent) information about the general situation from the hippocampus. Through such connections, the amygdala is able to process the emotional significance of individual stimuli as well as complex situations. The amygdala is involved in the appraisal of emotional meaning. It is where trigger stimuli do their triggering!

It is easy to see how a malfunction of any of these pathways might lead to emotional disorders. If in some individuals thalamic pathways are dominant or become uncoupled from cortical pathways, these people might form emotional memories on the basis of stimulus events that do not coincide with their ongoing conscious perceptions. Because thalamic pathways to the amygdala exit the sensory system before conscious perceptions are created at the cortical level, which only represent features and fragments of stimuli, these will not necessarily coincide with the perceptions

occurring in the cortex. Such people would have very poor insight into their emotions. Similarly, if the hippocampal system were uncoupled from the thalamic and cortical projections to the amygdala, you might have people who express inappropriate emotions to the immediate context, including the social context.<sup>37</sup>

*These ideas could indicate an approach to some possible therapies, through the investigation of which pathways are weak or nonexistent, and find therapies that could strengthen or create new ones.*

~

In the preface to her book *My Son . . . My Son*, Iris Bolton laid out the dilemma that she and all parents who lose a child to suicide face:

*I don't know why.*

*I'll never know why.*

*I don't have to know why.*

*I don't like it.*

*What I have to do is make a choice*

*About my living.*

I had promised Mitch that some day we would find an explanation of his problem. I hadn't considered that suicide might be a part of it. And so now, to keep my promise, I need to explain more than panic attacks. I need to explain suicide.

Right after Mitch's death well meaning friends gave me a series of books on suicide. These books defined suicide as, "Death from injury, poisoning or suffocation where there is evidence that the injury is self-inflicted and that the decedent intended to kill himself/herself." They brought me face to face with the simple questions of the how's and where's and who's of suicide. The statistics are staggering. The question of why remained elusive. Yet, my intimate knowledge of my son allowed me to speculate and perhaps even know, at some intuitive level, why he committed suicide. But what about all the other cases?

I focus on suicide among the young (thirty five years and younger) and otherwise physically healthy. However, many of the causes for suicide among the young apply to older people. First, one thing needs to be understood: Psychiatric disorders are an illness. It is impossible to understand the type and the intensity of the suffering that people who have these disorders endure when one hasn't experienced the suffocating pain and horror that accompany these conditions. This kind of pain can be more severe and unbearable than physical pain, and certainly less comprehensible to the sufferer.

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<sup>37</sup> Ibid.

The rate of suicide among the young is increasing but there is no consensus as to why this is so. The reasons proposed are varied, going from the threat of nuclear extermination, terrorist attacks, MTV, peer and parental pressure, child abuse, promiscuity, increased affluence, excessive freedom, boredom, Watergate, too much discussion or too little discussion on suicide. The fact remains that we don't know.

Allow me to put suicide statistics in perspective: in 2001 we lost ten times more people to suicide than to terrorism in a year. In some years there are more deaths by suicide in one hour than losses due to terrorist acts in the United States in a whole year.<sup>38</sup>

There are approximately thirty thousand deaths by suicide per year in the United States and almost half-a-million suicide attempts serious enough to require emergency room treatment.

Suicides of people under thirty-five number about ten thousand per year. Suicide is the third leading cause of death among the young. These figures include all types of suicide.

Underreporting of suicide is estimated at between ten to twenty percent. However, some experts believe that suicide rates could be three to five times higher. The numbers vary enormously. Many drug overdoses and one-car accidents that could be suicides are reported as accidental deaths; some coroners and doctors are reluctant to label a death as a suicide if there isn't enough evidence.

About half of all suicides are committed by people under psychiatric care, and yet most come as a surprise. This seems to indicate that something is quite wrong with our thinking as concern suicide. Suicidality should not be lumped together with simple symptoms such as disrupted sleep; nor should it be ignored because depression has lifted, because most suicides are related to depression, either unipolar or bipolar. Suicidal behavior can be linked to other causes, such as schizophrenia, personality disorders, panic attacks and anxiety disorders; perhaps suicide should have a diagnosis of its own, because most that suffer these other ailments do not commit suicide.

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<sup>38</sup> The figures and numbers on suicide in this section are taken from the following sources:

Kay Redfield Jamison, *Night Falls Fast*.

John H. Hewett, *After Suicide*.

William Styron, *Darkness Visible*.

Carla Fine, *No Time to Say Good-by*.

Harold I. Kaplan, *Synopsis of Psychiatry*.

Eric Marcus, *Why Suicide?*

Adina Wroblewski, *Suicide Why?*

E. Fuller Torrey & Michael B. Knable, *Surviving Manic Depression*.

Andrew Solomon, *The Noonday Demon*.

There is a range of suicidal thought and behavior. It varies from risk-taking behaviors that could include any activity that is dangerous, like driving fast, parachuting, rock climbing and so on, through different degrees and types of suicidal thinking and ends with suicide attempts and suicide.

The divide between suicidal thoughts and action is not clear. A potential deadly impulse might be interrupted before it is ever acted upon, or an attempt with mild intent of death might be carried out with a full expectation of discovery and survival. A few individuals use suicide threats or attempts to provoke change in the behaviors of others.

There is no great correlation between suicide and the severity of depression. Some suicides occur during mild depression while others cling desperately to life under the worst imaginable conditions: loss of loved ones, work, freedom, and even country or home, all simultaneously. And people with bright futures, like Mitch, occasionally resort to suicide. Suicide is not an escape from a difficult life; it comes from the dark recesses of the brain, beyond awareness and rationality.

Different investigations conclude that 10% of the adult population has had suicidal thoughts at some moment in their lives. Of the adult population interviewed, 3% reported having attempted suicide one or more times. Of those who attempted suicide once, there is a 10 to 15% chance they will eventually succeed in killing themselves. This group is the one that is at highest risk of suicide.

Variations of between 1 and 4% of adults, between countries, even regions in countries, and cultures in attempted suicides is the norm. Adolescents vary more, reporting between 2 and 10% with a significant number reporting more than one attempt.

Gay people (15-20 percent) attempt suicide much more than heterosexuals (3.5-4 per cent). Gay people probably suffer more stress than heterosexuals, and this could be a factor leading to higher depression rates.

In the industrialized nations, there is evidence that the rate of suicide among the young has doubled or tripled over the last few decades, with the greater increase happening between the 1950's and the 1970's and subsequently remaining more or less steady, and older people reducing their rate of suicide. This overall increase might be due to better reporting. There is strong evidence that mood disorders tend to run in families. At the very least there is a genetic disposition to mood disorders.

Suicide rates increase with age. Among men, suicides peak and continue to rise after age 45; among women, the greatest number of suicides occurs after age 55. The elderly attempt suicide less often than do younger people but are successful more often. For males between 15 and 24 years old there was an increase of 40% in the suicide rate between 1970 and 1980, and is still rising slightly. The suicide rate for women in the same age group showed only a slight increase. Among men 25 to 34 years old, the suicide rate increased almost 30 per cent.

There is strong evidence that serotonin inhibits violent, aggressive and impulsive behavior. Postmortem studies of suicides show low levels of serotonin in certain

locations in the brain, especially in areas associated with inhibition, which in turn might produce a strong influence to act impulsively on emotion. More than half of suicide attempts are impulsive; they occur within the context of a premeditation period of less than five minutes with disregard for the consequences to others. Even when many suicidal patients have a well-formulated plan, the final decision to commit suicide is often determined by impulse.

Lower levels of noradrenaline and norepinephrine, though less consistently than the serotonin studies, appear to be reduced in postmortem suicidal brains. This suggests, and this is only a suggestion, that low levels of some neurotransmitters might play a role in suicide, perhaps in indirect ways.

The method of suicide varies from place to place and from time to time. Yet only a few methods account for all suicides: gunshot, jumping, poisons, gas, hanging and drowning. I feel it is obvious that if guns are easily available, there will be more suicides by the use of guns. In the United States, guns are the leading choice of death by suicide. In England where the use of guns is highly restricted, guns rank fifth as the method of choice. Hanging, strangulation and suffocation are lumped together in the United States and are the second leading cause of death involving suicide. If chemicals are easily available, then this will be a more frequently used method, as seems to be the case in China, where pesticides and fertilizers are easily obtainable. In India, one particular method used in high proportion is jumping in front of trains. If high buildings are handy, then more suicides will be recorded by jumping from high places. Economic status does not reflect anything on suicide rates, even though people in the upper class suffer more from mood disorders.

External factors can lower suicide rates. When guns or medications are hard to come by, suicide rates are lower than elsewhere. In England, when they switched from lethal coke gas to less toxic natural gas, annual gas related suicides dropped from 2,368 to 11. Reducing the means to kill one self impulsively will increase the chances that the impulse will pass.

In 1992 the suicide rate for people sixty-five and over group is 61.2 per 100,000, compared to about 44 per 100,000 in people under sixty five. It shouldn't be surprising that the elderly have a higher suicide rate; after all, they face greater loss of health, possible loss of longtime spouse or greater loss of status than their younger counterparts, with lesser possibilities of re-attaining their accustomed situation.

People suffering from the following seven diseases of the central nervous system have a higher risk of suicide: epilepsy, multiple sclerosis, head injury, cardiovascular disease, Huntington's chorea, dementia, and acquired immune deficiency syndrome (AIDS). All are diseases in which an associated mood disorder is known to occur. Four endocrine conditions are associated with increased suicide risk: Cushing's disease, anorexia nervosa, Klinefelter's syndrome, and porphyria. Mood disorders also attend these diseases. Peptic ulcer and cirrhosis, both found among alcoholics are two gastrointestinal disorders with an increased risk of suicide. People with

prostatic hypertrophy and renal disease treated with hemodialysis, both problems with changes in mood, are also at a higher risk for suicide.

Most suicidal people do not openly announce their intentions. However, about eighty per cent of people that commit suicide leave clues to their therapists or doctors, or loved ones and friends as to their intentions. Naturally the elderly's clues are taken less seriously. Men commit suicide three times as often as do women, a rate that is stable for all ages. Women, however, are four times more likely to attempt suicide, as are men.

Suicide motives vary tremendously and cover a very wide spectrum. On one end, we have people with a terrible chronic disease like cancer or multiple sclerosis, where they face a continuously worsening quality of life and/or pain. Rational suicide is a frightening idea, but this type of decision is generally understood. Yet, most people that are faced with these terrible illnesses *do not* commit suicide.

Most non-psychiatric medical illnesses, even such serious disorders as Huntington's disease, multiple sclerosis, or cancer, so often tied to pain, disfigurement, diminished dignity and independence, and death, are in proportion to psychiatric disorders, one sixth to one twentieth less likely to end in suicide.

In the state of Oregon they have twice approved the Death with Dignity Act, which allows doctors to write lethal prescriptions for terminally ill patients who want to control the time and place of their death. Patients only qualify if they are fully conscious and able to administer their own overdose. It is understandable that terminally ill patients that are facing a diminishing quality of life would take this route. However, in seven years, according to the Oregon Department of Human Services, two-hundred-and-eight people took legal, lethal overdose prescriptions—out of 64,706 Oregonians who died of the same diseases.<sup>39</sup> In other words, 99.68% of people facing a terrible death chose life over suicide, even when this kind of suicide is comprehensible by most. This translates as a suicide rate of 320 per 100,000, about one tenth of the suicide rate of people who suffer severe depression.

The only group of people that is completely resistant to suicide is pregnant women. The cause is not known, but it is straightforward to imagine that it is related to producing new life.

There are people who commit suicide for reasons of honor: the General facing military defeat, or the banker caught stealing. But the most common cases of suicide involve people suffering from mood disorders like depression, manic depression and schizophrenia. Almost 90 per cent of those who commit or attempt suicide have a diagnosed mental illness. Roughly 75 per cent involve depression and manic depression, with schizophrenia accounting for about 10 per cent, and dementia, delirium and personality disorders about 5 per cent. Panic attacks and anxiety disorders are generally diagnosed alongside these other conditions and greatly

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<sup>39</sup> Margot Roosevelt, *Choosing Their Time*, Time, April 4, 2005.

increase the chances for suicide. Severe anxiety and severe agitation are portent predictors of suicide. One in five people suffering from major depression and nearly half of people suffering from manic depression will attempt suicide. This is the group that is at highest risk.

More depressive disorder patients commit suicide early in their illness; more males than females; and the chance of depressed people killing themselves is increased by their being single, separated, divorced, widowed or recently bereaved. Suicide is more likely at the onset or the end of a depressive episode. One of the highest-risk periods for suicide is, ironically, when patients are recovering from depression. The transition from their low state to a normal mood is a terrifying and hazardous experience. There might also be huge disappointments when after feeling well again one feels ill all over again. The resurgence of will and vitality, signs of returning health, makes possible the acting out of suicidal thoughts. In all these cases there is also a wide range or spectrum of going from people who have been suffering and have suicidal thoughts for many years to cases where there are no previous warning signs that are visible on the surface.

The age of onset of schizophrenia is typically in adolescence or early adulthood. Most schizophrenics who commit suicide will do so during the first few years of their illness. People with schizophrenia who are better educated and more intelligent, perhaps because of their greater insight into their illness are more likely to kill themselves.

Nearly 3 in 4 people with borderline personality disorder attempt suicide and 5 to 10 per cent do kill themselves. In these cases, they are exquisitely sensitive to actual or perceived rejection. About 40 per cent of these suicides are committed in the presence of other people.

Substance abuse and alcohol increase the chances of suicide by disinhibiting certain behaviors; risk taking, violence and impulsivity are increased. For those who are potentially suicidal, this may be lethal. Many times, mental illness and drug abuse go hand in hand as a form of self-medication.

Among people without psychiatric illnesses the suicide rate is about 8 per 100,000. For people with moderate depression the rate escalates to 220 per 100,000, and to 3,900 per 100,000 among people with severe depression. Depression and manic depression are associated not only with completed suicides but also with serious attempts at suicide. The risk of someone making a second suicide attempt is highest within three months of the first attempt.

The highest predictor of suicide is a previous attempt; almost one third have attempted suicide before. One percent of those that attempted suicide will end their lives within a year and ten percent will do so in ten years. There are about sixteen attempts per every completed suicide.

Eight out of ten people who eventually kill themselves give warnings of their intent (primarily to their doctor or therapist). Fifty percent say openly that they want to die. It is a particularly dangerous sign if a person admits to a plan of action. It can

also be an ominous sign when a person that has been threatening to commit suicide becomes quiet and less agitated.

There are many guidelines to evaluate suicide risk, mostly having to do with answering the question, "Do you have suicidal thoughts or plans? Do you feel like dying?" However, these are not reliable as my wife and I found out the hard way. Many people, during severe bouts of mental disorders have suicidal thoughts and never act on them. Family, friends or anyone in a support capacity dealing with anyone that has a mood disorder, especially depression or manic depression, should be communicating with each other all signs that can be indicative of "abnormal" behavior.

If my wife had told me about some things she saw in his last few months in Mitch's behavior, and I had told her what I observed, it is probable that we would have acted in a more concerted fashion, as the combined information would have alerted us both to a more serious situation than either of us interpreted. Also, I must insist that communication with the person that is suffering the mood disorder be opened and maintained at all costs; even when the person doesn't want to talk "about it". It is important to be emotionally engaged even when this produces extreme discomfort and it should be imperative to work against isolation.

Only about one in five people who commit suicide leave a note. These notes generally don't even start to reflect the dark interior motives that could drive these desperate acts. Even when the perpetrator is a skilled writer, it is difficult to envision that a depressed, confused, hopeless state of mind might lead to great eloquence.

Unfortunately, the pharmacological arsenal to relieve the misery, hopelessness and the cumulative dark despair with all its pains and chronic distress is today limited, though it is much greater than in the last decade and increasing.

It is very tempting to look at the life of someone who has committed suicide and attach to it a huge complex tangle of issues. No one illness or event causes suicide, but psychiatric illness is almost always present. Each case of suicide is ultimately unknowable. It is a very private and terrible act. The privacy of the mind is inaccessible. Any clue we might infer is indirect. Suicide is not necessarily a very awful way to die, but the path that leads to it generally is; the mental suffering is prolonged, intense and relentless. The suffering is inexpressible. Love, friendship and understanding are hardly ever enough to counteract the pain and destructiveness of mental illness. But love and support should be at all times unfailingly provided if there is hope for success.

It is important to dispel some erroneous notions about suicide. Many depressed people think about suicide often, but it is an unreal thought, an abstraction, even when depression is worsening and the methods of suicide contemplated become more violent. Occasionally, the thought of suicide allows the depressed person to exert some control and help them continue on. The knowledge that you can kill yourself one minute later might allow you to survive the next few moments. I cannot emphasize this enough: most young people that commit suicide do not want to die; it is not an escapist way out. In some cases suicide is an act of extreme courage, misguided at the moment, but definitely not an act of weakness or cowardice.

Suicide is generally a part of a disease, generally depression, manic-depression in the depressive phase, or schizophrenia and personality disorders. These mental disorders produce a diminished sense of self, or even a total loss of self, and it is only under such conditions that suicide becomes possible. With a loss of self, the possibility of self-harm becomes a logical consequence of distorted thinking.

Just as the AIDS/HIV campaigns to generate more awareness of the dangers and forms of transmission of the disease helps lower the spread of this deadly killer, awareness of the problems relating to suicide should help us prevent some of these tragic deaths.

Most of the SSRIs, the more popular antidepressants, have not been studied to determine their capacity to prevent suicide. In manic-depressive patients using lithium, which has been more rigorously tested, the rate of suicide among patients who discontinued lithium treatment increased sixteenfold. Most people suffering from severe depression find it hard to feed themselves, and under such conditions the energy needed to end one's life is simply non-existent. It is possible that some drugs that assuage depression increase the possibility of suicide by increasing motivation in general. It is important to distinguish between an enabling and actual cause.

One undisputed fact remains: we are all—doctors, patients, loved ones—very ignorant of the causes and reality of suicide. I discussed suicide briefly with Mitch and he quickly dismissed the idea, especially as it pertained to him. Although he was a smart young man and I am much more educated than the average person, I couldn't even begin to help guide my son through his problems. At one point, I did promise him that a solution for his problems, at least an explanation, would be found, even if he was fine and all this became an experience in his past.

As a survivor of suicide I cannot even begin to express the devastation that is left in the wake of a young death. Unfortunately, I have seen that premature deaths, irrelevant of the cause, always have a much greater impact on us. One is always left with a sense of having been cheated unfairly.

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## Mitch's First Correct Diagnosis

In hindsight, I must advise anyone who is going through a depression or has a loved one suffering from a depression, that on average, the knowledge of some in the psychiatric community is sketchy, and at best, even the finest doctors don't know all the details. If some treatment is not working, another opinion should be sought. Since the present therapies and the medications available deal with the issues peripherally, every stone should be turned; every treatment, every therapy, every medication should be tried until a solution is found. Keep in mind that precisely, because medications are addressing some neurotransmitters, but not necessarily the real culprits, what works in one case, doesn't work in another. Even when there is no danger of suicide, the suffering must be relieved! Love, friendship, loyalty, are not enough, but must be given continuously, as these can be the difference between life and death.

If a treatment produces an improvement in the condition, it is worthwhile to pursue tweaking it by trial and error. In this I have to agree with the psychiatrists, but only if there is some visible change for the better. In general terms, the best results are obtained by individually fine tuning a cocktail of medications and managing the side effects along with therapy. This requires constant supervision, and revisions.

The suffering in depression is beyond words, beyond metaphors. Very talented writers who have tried to describe what depression is like complain that there is no terminology, so they use metaphors that at best touch only the surface. Depression is a very complex state, unrelated to the normal experience of people that haven't suffered through it. Depression is a very disorganized state, emotionally and intellectually. Here are some examples of adjectives that, perhaps, convey the sense of what depression is like, as well as the individual differences that depression can manifest.<sup>40</sup>

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<sup>40</sup> Some of these adjectives were picked from the following sources:

Kay Redfield Jamison, *Night Falls Fast*.

Kay Redfield Jamison, *An Unquiet Mind*.

William Styron, *Darkness Visible*.

Peter C. Whybrow, *A Mood Apart*.

Neil Casey, Editor, *Unholy Ghost*.

In some people, depression manifests a sense of disconnectedness, i.e., the self is a fiction, reality becomes ghostly, I felt like an outline of a person, like a ghost, a shadow, emptying of the soul, and think ceaselessly of oblivion.

Others describe depression as a confluence of bad feelings: loneliest, I thought I would never recover or die, pounding around, utterly confounding, immensely disturbing, a fidgety restlessness, intolerable grief, agony reached a deafening pitch, panicky, crying inconsolably, died of sorrow and dangerous.

Also common to many that try to describe depression, is the use of some of the physical symptoms that accompany negative feelings, i.e., the dread of the clammy chill, a knot in my throat, awful heaviness, sadness in my cheeks, and drained rapidly.

Frequently, many describe depression as a form of exhausted state: I stayed quiet, stalled, throttled back, deep trough, weary and fatigued, desperate prolonged, insidious, and a relentless torture.

My son Mitch spoke “of a blackness in his head.” I found allusions to the darkness very often, i.e., skittering blackness, downwards into hell’s black depths, and darkness crashed through the dread.

Intellectual confusion is expressed as follows: aggrieved, pitifully small, ramshackle structure, memories are a huge minefield, exaggerated ills and threats, and a cage without a key.

Depression is akin to an unspeakable torment where the individuals lose touch with themselves. Because depression manifests itself differently from person to person, and can be different from one depressed episode to the next, it is confusing to the sufferer, and it is hard to diagnose correctly.

Mitchell didn’t have the words or the experience to help us understand, but what amazes me is that the few doctors who did see him in the beginning, didn’t try to convey to us what his state could mean; it is almost unforgivable that professionals that deal with and make a living trying to treat mental illness would explain so little to my wife and me.

This terrible state that is manifested in seemingly different ways by each individual, is in reality a slow loss of the sense of self. This process varies because each one of us has individual memories and feelings. This awful state is so important to aftoktognosis I coined the term *idiozimia* (from the Greek *idios*=self and *zimia*=loss). A partial loss of self, or the beginning of the process should be clearly labeled; I use the word *archidiozimia* (from the Greek *archi*=beginning).

When my Cousin Luis’s wife, Gina, whose mother suffers from manic depression, heard about Mitch’s problem, she recommended we see her doctor in Mexico City. We were planning to go to Acapulco for Spring break with Mitch, so I made an appointment on a Monday in April 1999. Mitchell arrived a couple of days after us on a Saturday. I told him about the appointment, and he said it was a complete waste of time, that he was just fine. He was feeling great and went out drinking and dancing with his cousins late into the night.

The next day, Sunday, he had another full-blown episode like the one he had in the parking lot in Lake Tahoe a couple of months before. My sister Minnie had suffered from anxiety attacks, and recently had found a doctor who controlled her attacks with medication. One of the medications was Tagamil. She gave Mitch one pill and it seemed to help him. He calmed down enough to be close to normal. Needless to say, the next morning, Mitch and I flew to Mexico City to keep the appointment I had made with the psychiatrist. He was very good.

He slowly got Mitch talking about his “problems”. The psychiatrist was not digging into the past to look for the life-shattering events. He wanted to know about Mitch’s present state. Mitch recounted his fears of braces, and now the pimples, and how he particularly didn’t like to look at himself in the mirror. The psychiatrist was able to gently coax out of him some of the issues that he was embarrassed to talk about.

His diagnosis was Moderate Depression With Occasional Panic Attacks. He explained to us that when an individual falls into a depressed state, he tries, in a rational sense, to find the cause of this depression. Invariably a cause will not be found, because there isn’t one, and one will be invented: the braces, the pimples, the red hair or whatever will be found as a “reason” for the depression. These “reasons” are not obsessions; they are rational explanations that one eventually believes to be true. When the person discovers that the depression continues, even in the face of the removal of the reason, a new reason is found to explain the depression. Part of therapy is to keep the patient focused on the depression and to avoid inventing a reason for it. And, he continued, depression occasionally is accompanied by anxiety or panic attacks. And panic attacks are what Mitch had suffered a few times (maybe four up to that time). He recommended *therapy accompanied by medication under close supervision*.

The psychiatrist also mentioned that just as the depression appeared suddenly, sometimes, just as suddenly, it simply goes away, occasionally to never come back. He also said that the younger one is the more probable it is that the depression will be permanently cured. He also added that in some cases it goes away for years and then returns.

He cautioned Mitch about drinking; hangovers are a state in which it is easier to trigger a Panic Attack or a Depression. He told us that all the leading scientific advances in the field were being made in the United States, and that we should be able to get very competent help in Santa Barbara. Once Mitch felt that his condition was known, as opposed to some incomprehensible, unknown emotional state, and that it was curable, he seemed to improve remarkably. And I mean in hours, not days. I felt that, at least we had a label for his condition, and a plan to pursue.

My friend Mario, who lives in Cuernavaca, forty-five minutes from Mexico City, picked us up at the bus station and drove us to Acapulco. After a couple of hours talking in the car, Mitch started to be his usual self, telling us stories of Sidhartha and other books by Herman Hesse. Mario, whose wife had suffered from bad acne,

was familiar with many of the products to improve facial skin. We stopped at the first pharmacy in Acapulco, and got Mitch all he needed to get rid of the few pimples he had. This would take care of any pimple problem, real or imagined. When we arrived in Acapulco that night, Mitch was under pimple treatment and looking and acting like his usual self. A week later he returned to Santa Barbara.

When we offered to go to Santa Barbara to help him find a good doctor, he informed us that he had already seen one at the University and that, "Mom, I'm fine. Don't worry! They say I am O.K. If I'm not, for me to go in and see them. It's as simple as that." Spring went by and Mitch reported he was doing great. That summer he went to Europe with Jeff and Julie, dear friends from high school. He seemed fine to them. He saw his girl friend Katie in Italy; she and her family also felt he was fine.

Katie's mom told me, after Mitch's death, that in Europe she had sensed that Mitch didn't like to see his reflection in the mirror, but she considered this just a simple eccentricity. I thought back to Mitch's first interview with the psychiatrist in Mexico City. "Beware of madness in the family," taunted me. I hadn't picked up on this at all.

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In the summer of 1999, while Mitch was in Europe, he tried to fax us the following letter. The pages were written in a hard cover, bound notebook; he ripped them out, tried to glue them so they would transmit continuously, like a roll. We never received them. After his death, going through his things, I found his letter:

*Dear family;*

*I just want to inform that my time spent in Europe has been phenomenal; the first five days in Paris by themselves are unforgettable. We saw the Eiffel tower as it crawled towards the sky. We ran through the city like three scoundrels, jumped over ticket meters, walked quickly with thousands of workers on their routes to and from work. We stayed in a small room that was red like the devil and had the scent of old people. Although there was no toilet the shower and sink worked quite well. While flying over London I saw the beautiful gardens, magnificently kept and green as can be. Paris reminds me so much of New York City and I'm looking forward to going there. I love the French language even though the only words I know are merci and pardon.*

*All three of us have stayed up late many nights and spoken of our dreams. I feel as though the entire world lies before me, I've traveled across fields and long stretches of dark forest. Beyond these fields and forests might be farms and mills, and in a way I sense that Europe can be for me, wide and enchanting, beautiful, ready to be explored. I am no longer a boy that sees the world through television. The towns of the countryside seem a reality; I feel I am no longer just a stranger to these places with difficult pronunciations. Now, within me are places with a face, places with times and places that I can drink of all of it. Their sky is my sky; its weather is my weather. I feel small in this large country and I love its people that make me feel like I belong.*

*In Paris we walked all the Champs Elyses. We did some shows and also, we went to two museums with beautiful sculptures of the human body and incredible ancient artifacts from the*

*time of the Egyptians. In another place we saw many cannons lying around. The side of one had a woman's face with the French flag fluttering above. But the French can be very mean at tourists. I mean that they snap and bark when they find out you speak only English. I feel so free here, my mind is filled with so many beautiful pictures.*

*We went to the Picasso Museum. We saw radical art and I bought a couple of prints. Afterwards, we walked outside and lay on the peaceful grass lawn. I saw some kids playing ping-pong and I decided to join them. I played with them for many hours, lost in their laughter and happiness. I taught them the ping-pong rules I knew from Mexico.*

*Under the willow trees, the wind blowing gently and saw myself in it again, laughing as a golden child, blond hair swaying in the breeze. We went out that night and met some cute girls from North Carolina. I told great stories of Sidartha and Narcissus and Goldmund. While flirting with the girls I felt important, as if I had something important to say. Jeff and I have had many philosophical, scientific and literary conversations. Julie and I have been talking about possibly moving to Paris when we get older. Over her, there is a great connection amongst all people. I even saw some skateboarders in Paris, even though they wouldn't let me use their boards.*

*And I've learned so much about myself on this trip. I've learned that friends and family are really essentially the only thing that can save us from ourselves. They inspire us, reflect in us the beauty, which we can't see, and make us realize the simplicity and beauty of life.*

*While traveling from Paris to Amsterdam, Nick and I put our resources together and dragged behind us a groggy group of hung-over travelers. Nick spoke French with the train people while I read and organized the transactions. On the way to Amsterdam oceans of green vegetation, gleaming skies glazed with white clouds, and the phone poles passed by quickly. In Amsterdam, Jeff and I spent one night by ourselves in a comfy hostel. We walked around town; saw porno shops on every corner, coffee stores that sell marijuana, strangers who casually try to sell you cocaine, heroin and even crack. Even with all the filth and leniency of the city we were able to find culture and beauty. I started reading a lot in that city. I also played Nick's guitar and we all sang. Julie stayed in Amsterdam and Jeff and I continued our journey to Germany. Fourteen hours and we were there. We struggled to the hotel and went out to see some ancient towers and structures. We saw the technological museum in Munich, which had just about everything that dad and Freddy would love to see. It even brought on some nostalgic feeling from my M.I.T. days. We walked around the beer gardens and finally settled down for a refreshing beer and some home cooked German sausages.*

*I miss you guys tons and can't wait to see you in New York and how incomprehensible everything is and actually beautiful, although it is also sad. I feel as though I know all these things yet I know nothing. One lives and runs about the earth, rides through forests, and certain things seem so promising and challenging and nostalgic: green pines slipping away from Germany to Switzerland, bright grassy fields, or sun light creeping in through withered leaves of a dense forest.*

*Now only the life within me is real, the powerful beating of my heart, the nostalgic sting of longing, the joys and fears of my dreams. It is to them that I belong. It is to them that I have abandoned myself. I have only listened to the rivers and voices inside myself which draw me away*

*into beautiful countries where one can see a beautiful Swiss lake shimmering in the sunset while laughing with a new friend, sleep in a park after spending a fun filled night of skateboarding, laughing and talking with Swiss kids.*

*And looking back my last months of University feel like a roof that I was standing under the same way as a hesitant wanderer who is caught in the rain who stops under any roof, a tree, just to wait, for fear of the unknown.*

*Italy is so beautiful. It is so full of color, art, architecture; just everything. Venice has been kind to us. Jeff and I had a cherry red bottle of wine last night with our prawn pizza and red sauce lasagna. We ran around the river-infested city a little tipsy and talking with just about any stranger with a bit of sex appeal. I think I've given a pretty good summary although I've only scratched the surface.*

*In conclusion: At times it seems something never seen yet, long desired is about to happen, that a veil will drop before everything, that some great explosion or self realization will take place; but then it passes and nothing happens, and the riddle remains unsolved, the secret spell unbroken, and in the end grow old and look wise like dad, cunning like Freddy, or powerful and loving like mom and still know nothing and maybe are still waiting and listening.*

*Love,  
Mitchell*

*This is our last day in Venice. We are on our way to Florence. I will call when I get there.*

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## The Count of Valenciana speaks.

I am looking down La Boca del Infierno, as it is called by most that work here. The main shaft drops down into the bowels of the earth. You cannot see the bottom, just darkness. Truly, this could be the Mouth of Hell. It is La Valenciana, the biggest silver-producing mine ever.

I feel a certain amount of pride in the perfect roundness of the hole. About 50 meters wide, the mineshaft descends about 500 meters through a series of stairwells and ladders. We have been digging for the last 194 years, going back to 1558. When I say “we,” I mean my ancestors before me. Huge horizontal tunnels spread out from the main shaft at various levels. The ones closer to the surface have been exhausted. We have been digging deeper and deeper.

I still hold the title of Count of Valenciana. This means, among other things, that I am one of the richest men on earth. La Valenciana’s ore is the richest in silver content ever encountered. I have plans to go deeper still, as there seem to be indications of more silver further down, perhaps another 200 meters. Today, La Valenciana has produced more than half of all the silver of the world, but we are approaching the physical limits of what a man can carry up to the surface from those depths.

I have started plans to build one of the most ornate churches in the world as a small payment to God and Church for my wealth, but I still have to decide on the architect. Maybe my son can finish this project. I feel compelled to build something or at least to start something that will out-live me far into the future. I will name it in honor of San Cayetano.

But now, I have to worry about more ordinary problems. My slave labor has been dwindling and our production has been declining continuously for the last few years. I have instructed my assayers to get me all available young men. The miners and loaders are not the problem. The shortage is in the carriers. On average, if you feed them well, they might live about seven years. This is a small price to pay for the riches I send to Spain so they can expand Catholicism all over the world. Maybe when all are Catholics, there will be fewer problems everywhere.

When they could not find enough young men to slave in the mine, as an excuse my accountant told me, “Count, there are a few young men, but they are so sick and feeble that they would be of no good.”

“What about the son of the good looking Indian, the one with the green eyes?”

“The one that you joke could be your son? His name is Miguel. I believe he is just pretending to be sick. He lies on the floor and doesn’t move. But I cannot, for the life of me, determine what, if anything, is wrong with him. His family has to force feed him, but he doesn’t resist this. They say he has been like this forever, but his physical strength clearly indicates this is not the body of a sick man.”

“Bring him immediately! I need all the Indians you can get!” I yelled. “We’ll see how hard it is to get this young man to work.”

And so they carried him to my presence, and laid him on the floor at my feet. He lay staring at the ceiling with deep green eyes. I had never seen eyes like that in an Indian. His mother had refused me years ago, so I was pleased her son’s eyes were like mine. That is why I joked that he could be my son.

This young man had intrigued me since he was a baby. If I talked to him, if I threatened him, he was completely unresponsive. Just like the other day. How long could he continue with this façade?

A few days later, I came in and commanded him to stand up. As expected, he continued unresponsive. I put my whip to his back and this did it. He jumped up and stared at me. “Tell me your name,” I commanded him rising my whip.

“Miguel.”

I pushed him and he walked. I took him to the mine foreman and ordered the pit boss to give him all he needed to be a carrier.

He equipped him with a hat with a wide rim, a cloth knapsack that would hang from his forehead down his back, a lamp, a shirt and some sandals. The knapsack to carry the ore was attached to a wide strip of cloth that would support the bottom of the knapsack, come up his back, behind his arms and over the hat and press on his forehead. In this fashion he could carry about 75 kilograms of ore if he was loaded by an expert, ten to twelve rocks, each about the size of a human’s head. The lamp consisted of a stiff wire that could be attached to his hat and hold a small tray with a candle in front of his head or face to provide some illumination if necessary. The shirt protected slightly from the cold in the mine, but more his back from the rubbing of the ore in the knapsack as he made his ascent. His sandals were a cheap investment to protect his feet.

He seemed to move sluggishly as if it was painful to move, but slowly he made his descent into the mineshaft.

I recount this, because in the next few days I was to witness the most extraordinary display of brute strength.

Most men took more than one hour to climb the Mouth of Hell from the bottom of the mine to the surface; and this, when they were carrying nothing. A carrier, fully loaded, might on his first trip up, when fresh, make it in an hour and half. Each carrier was required to make at least seven ascents a day. The carriers worked twelve hours, and then rested twelve hours. We had two shifts. The men worked day and night.

In some sections of the Mouth of Hell the main steps, sometimes almost five meters wide, spiraled upwards. In other sections ladders were used. A team worked continuously, building steps, as the ladders proved to be bottlenecks, especially welcomed by the carriers on their arduous journey upwards.

Miguel was different. He made twelve journeys the first day, and sustained this pace for the next five days.

On the seventh day, a day of rest as required by the scriptures, I had him brought to me.

“Miguel, I have never witnessed anyone to be as strong as you.” I waited for an answer and none was forthcoming. Miguel just stood there looking into my eyes with a completely fearless gaze, his green eyes boring into me. “I need to understand where you get this strength. I could do so much more if I had more men like you. If you help me, maybe I can help you.”

Miguel spoke for the first time in days. “I see things that no one sees. No one can help me, I am mad. Walking up and down helps me.”

I waited for an elaboration, none came.

“It helps you? Walking up and down?”

No answer. It was obvious he didn’t care what I thought. “Why were you lying immobile when I met you? Did that help you?” I prodded.

“For weeks I had no desire for anything. I can’t explain it. Nothing seemed of any importance, not even eating, and I couldn’t sleep. I didn’t sleep for weeks.”

“Why did you get up when I whipped you?”

“Wouldn’t you?”

I had to agree and waited for more but it didn’t come. “Tell me more,” I prodded.

“Did you know that coming up the Mouth of Hell there are thirty three ladders with five-hundred and ninety-four steps?”

“No.”

“Why thirty-three? Jesus died at thirty-three.”

“We are working on making more steps; eventually there will be fewer ladders. Thirty-three is just a coincidence.”

“There are eighteen steps to a ladder. I am eighteen.”

“You will be nineteen in a year, and the ladders will still be eighteen steps. There is no significance in that either.”

“Did you know that there are 1752 steps carved in the rock of the Mouth of Hell?”

“No.”

“You do know that this is how many years ago Jesus died, don’t you?”

I was warmly intrigued by how the young man’s mind worked. “Yes, of course, but no, I didn’t know there were that many steps. But again, next year there will be more steps added, more than one, and that has no significance either.”

I waited for Miguel to speak again. He didn’t. “You still have not told me what the source of your strength is,” I pushed.

“I can sleep,” Miguel said.

“What do you mean you can sleep?”

“I couldn’t sleep before; now I can.”

“I don’t understand.”

“Neither do I.”

“I meant, why couldn’t you sleep before?”

“I just couldn’t. The days and nights became a continuous torment. It would never end.”

“But now you can sleep?”

“Yes.”

“Because of the hard work?”

“It makes me tired. I don’t think all day. I just concentrate on pushing one foot up and in front of the other. At the end of the day I can sleep. Thank you for helping me.”

After he left, I sat there, uncomprehending.

The next day, they called me. Miguel: he was not reacting, just lying there. I went to him. When I waved my hand in front of his eyes, he was unresponsive. I leaned close to him and whispered in his ear, “Miguel, do you want me to bring the whip?”

Miguel got up. “Do you want me to whip you?” he asked without looking at me.

I answered between clenched teeth, “I don’t need to be whipped to do my duty!”

“What is your duty, Count?”

“My duty is to preserve the great institutions of the Church and the Spanish Crown. My duty is to help extend the reaches of Catholicism. My duty is to make you all Catholics!”

“How can you be so sure?” he said calmly. “I have no idea what my duty is. However, since you have helped me, I will help you.” And with that he turned and went down the Mouth of Hell, leaving me thinking about what he had said. If indeed it was different than what I thought, what, I wondered, could be my duty?

For the next six days, Miguel carried a dozen loads of ore a day. A dozen trips in and out of the Mouth of Hell. At the end of the sixth day, as he unloaded the ore from his knapsack next to the huge hole in the ground, Miguel saw me. He calmly approached me.

“Your duty is to help me. Mine is to help you. I need no rest. I need to continue working.”

“Everyone must rest every seven days. It is a sin otherwise.”

“How do you know? It isn’t for me. I need to continue working,” Miguel insisted. “If I stop, I might die. I feel I need to help you and you need me to work. What is the problem?”

“It is a sin. I cannot allow it.”

I forced him to rest. The next day, Miguel would not budge.

“Miguel,” I said gently in his ear, “I am here to help you. Do I need to get the whip?”

Miguel stood up. "If you do not let me work whenever I want, I will lie down and I don't care if you bring your whip. I really couldn't care less if you killed me." This he said in a voice as cold as the ore at the bottom of La Valenciana.

"Miguel, I will help you. I will let you work under one condition: that you learn the Rosary and repeat it every journey up the Mouth of Hell. You need to atone for your sins."

"Hail Mary Mother of God, blessed is the fruit of thy womb . . ." I heard him repeating as he went down the Mouth of Hell. If he wanted to work seven days a week, I would let him work seven days a week. Miguel looked up at me as he kept coming up and I thought I saw him smile. At least his eyes shone with a smile.

Miguel's routine continued uninterrupted for months. Then, one day, again we met at the end of his dozen journeys. He saw me and came over. "How is your son doing? Do you love him?" Miguel asked.

"Of course, I love him. He is doing fine. Why do you ask?"

"Because I am doing better. Thank you." And with that he turned and left.

I talked to the people who worked in La Valenciana with him. Everyone could only speak in praise of Miguel. He always helped his fellow carriers, he helped the loaders. He helped carry other's loads sometimes as he was getting stronger every day, and still he managed his twelve journeys.

Juancho, who slept next to him, told me, "Miguel says that if he isn't working, he feels like collapsing and lying still, but if he lies still, then he can't get up. He says he has no strength to do so. Miguel says that if he works hard all day, sleep will come, and at least for the night he finds peace. If he lies still all day, he can't sleep and Miguel lives in a hell much worse than the Mouth of Hell all day and all night. He is thankful for your help because he gets peace at night. Miguel says that he knows in his heart that he must help you. It must be because you are helping him. He tells me that there is no pleasure in anything; there is no pleasure in thinking about his mother or his sisters, no solace in thinking about his childhood, what little he can remember. But he always helps me and I am grateful for that."

Miguel was now doing fourteen journeys up and down the Mouth of Hell. One day, I saw him unload his ore. He dropped his knapsack to the ground, took his hat off, his shirt off and stood there with his eyes closed with all his skin glistening with sweat. Every muscle could be discerned, and the contour of every vein showed through his tight skin. The sun was bright on his face. Suddenly, he opened his eyes. The light made those green eyes shimmer in such a way that I was transfixed staring into them. I walked away.

I heard someone following close behind me and I turned to see who it was. I was happily surprised it was Miguel. I turned and put my arm around him and lead him up the hill towards my house.

"I think it would be a good idea for us to talk," I said to him.

"I lied to you!" he cried out in a mixture of rage and despair, surprising me.

"I know," I said tenderly trying to calm him.

"What do you know?" he responded as he tried to wriggle away from under my arm. I could feel the supple muscles in his shoulders. He was not trying hard to separate himself from me. "I lied to you," he repeated, as if this was an explanation for trying to move away from me. I kept my arm around his shoulder, rubbing it, calming.

I pressed on, "Let's talk about your madness."

"I'm not mad," he said as he turned to look into my eyes.

"What about when you see things that others can't see?" I asked him softly.

"That hardly ever happens," he responded defensively.

"But it does happen." I answered firmly, as I tried to get him to talk.

As we walked along, we came across an iron frame wrapped with boards. Inside this frame were rocks, and broken tools, refuse of the kind that came out of La Valenciana. He absentmindedly walked into this container. I gently pulled him back out by the arm, and led him towards the house.

"Sometimes it is useful," he explained lamely.

"Like when?"

"Like when I'm working on . . . ." Suddenly he stopped. Looking into my eyes Miguel said as I continued to stare, "Do you love your wife? Is she doing well?"

"Why, yes. She is doing well, Miguel."

"And you?"

"I am fine."

"Are you sure?"

"Of course I'm sure."

"Then why do you stare at me?"

"I am not staring," I lied. "But tell me, how are you doing, Miguel?"

"I am good. Can't you see? Thank you for helping me. I will continue with my rosaries. I am now doing at least twenty-eight a day. That should buy me some place in Heaven, even if I don't rest."

"I wish I could understand how I'm helping you, Miguel."

"So do I. How are the Church and your King doing?"

"Oh, they are doing well. I am doing really well, even better than they. I know you don't understand how all this can be, but you are helping this be so."

"Oh, but I do," Miguel said. He stood there naked, except for his sandals, with his hat in his hand, facing the setting sun. The sun cast a light on him that made him shine as if he was made of gold, except for the green eyes and the black hair. In a strange way I felt a bond with this young man, certainly a bond stronger than the one I felt for my King.

"Sometimes, Miguel, I am not sure of why I am doing what I do, but still, it is my duty," I explained to myself more than to Miguel.

"Yes, I know. I repeat the rosary twice every journey into the Mouth of Hell; once going down and once coming up. Sometimes I wish that I were an explorer. I wish

that I could just walk all day to some far distant place that no man has trod. I imagine, sometimes, that I could walk up a mountain to see what was on the other side, only to find another mountain; and so I climb the next one until I am tired enough that sleep will give me peace. Sometimes I wish I could walk myself out of the living hell that is my life; sometimes I wish I could walk for eternity. That is why, sometimes, I wish I were an explorer. That way, I would never know what I would find after the next hill, over the next mountain, past the next plains; uncertainty would be part of the journey. Sometimes I wonder if I could be a leader and show the way. The way away from here; not just up and down, which if you think about it is also a way away from here, just in a different direction. I do know that I am here to help you, perhaps in a journey of discovery; perhaps down the Mouth of Hell.”

The sun had set. Miguel picked up his shirt and put it on. He looked at me with sad eyes. “Think about it. Think about what is your true duty.” He turned and left me standing there.

And so time passed. Once or twice a week I saw Miguel, and he asked about my family, about the Church and the King, and always made me wonder. Wonder what was my true duty. Why should I dig holes and enrich institutions? For peace? For betterment? For what?

A few months later, they called me to witness Miguel’s sixteenth journey up the Mouth of Hell. He emerged up the stairs, unloaded his ore. His eyes, I noted, were not quite green, they seemed grayer. I walked over to him. Miguel turned into the setting sun, and even though the light was shining in his eyes, his gaze was dull.

Before I could speak, Miguel said, “Do you now know what it is you are supposed to do?”

“What do you mean?”

“Look into my eyes! What do you see?”

“Nothing. I see nothing, Miguel.”

“That’s the point. There is nothing!”

At that moment he grabbed me by the shoulders and picked me up. His grip was so strong there was nothing I could do. I couldn’t move. I could scarcely breathe. He walked towards the edge of the Mouth of Hell. I realized he was going to kill me. At that moment, I clearly began to understand he was a human being, just like me; that he could suffer pain, just like me; and unlike me, Miguel had waited almost a year to do this. Had our situation been reversed, I would have killed him the first time his whip touched my back.

Our eyes were locked. I was in a deep embrace. Death, only a step away. At that exact moment of impotence, I realized neither the Church nor my King was coming to my rescue; neither cared for me.

Miguel held me over the abyss with a grip stronger than ten men. He continued looking into my eyes, and then slowly turned until his back was

facing the Mouth of Hell. He put me down, let go of my arms, and shoved me away from the menacing chasm. Then he leaned backwards and toppled into the hole. I crawled to the edge, and saw him falling, his face towards the sky, his hands neatly folded on his chest, as if he was sleeping, until he disappeared into the darkness of the Mouth of Hell.

I stood up. The sun had set on the horizon, the sky was red.

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## Laughter & OCD

*To understand mood disorders, one must have a rudimentary understanding of emotions. Each emotion is a particular chemical state of the brain. Emotions exert powerful influences on cognitive processing. Attention, perception, memory, decision making, thinking—all are modified by emotions. When an emotion is detected it is perceived as a feeling and the feeling intrudes on the attentional systems. Emotions in the wrong context can spell disaster.*

*Emotions intrude on attention. When a second stimulus is emotionally significant (another echo is matched by the thalamus), the thalamus overrides the attentional systems by sending a signal to shift attention to this new stimulus. In other words, when the amygdala receives a signal signifying an ECS, attention shifts to even an unattended event.*

*Each emotion has its own circuits and loops. Different studies of the brain, suggest, for example, the existence of a laughter circuit. When a region in the supplementary motor cortex, close to a region in the frontal lobes that receive input from the brain's emotional centers, is stimulated, patients laugh spontaneously. In cases where a person literally dies of laughter (she could not stop laughing until, exhausted, she died), subsequent autopsies have revealed damage to portions of the limbic system: the hypothalamus, mammillary bodies and the cingulate gyrus, all of which are involved in emotions. Given the well-known role of the limbic system in the fear circuit, it is not surprising that it is also involved in the aborting of a reaction in response to a false alarm—laughter. The feeling of merriment that accompanies laughter is a further indication that the limbic system is activated.*

*The main purpose of laughter could be to allow the individual to alert others in the social group (usually kin) that a detected anomaly is trivial, nothing to worry about. The laughing person in effect announces her discovery that there has been a false alarm; that the rest of the group need not waste precious energy and resources responding to a spurious threat. This would also explain why laughter is contagious, for the value of the signal would be amplified as it spread through the social group.*

*Normal laughter is triggered by a specific, usually mirthful stimulus accompanied by mood elevation and is a coordinated motor function involving facial and respiratory muscles.<sup>41</sup>*

*A discussion of Obsessive Compulsive Disorder and possible therapies helps to illustrate how complex emotional behaviors can arise.*

*As Dr. Jeffrey Schwartz explains in his book, *The Mind and the Brain*, one of the most striking aspects of Obsessive Compulsive Disorder (OCD) urges is that they seem apart*

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<sup>41</sup> V.S. Ramachandran, *Phantoms in the Brain*

*from, and at odds with, one's intrinsic sense of self. They seem to arise from a part of the mind that is not you, as if an impostor were inside your mind. OCD can manifest itself as obsessions about order or symmetry, as expressed in an irresistible need to line up the silverware or hoarding. Paradoxically, giving in to the urge to wash or check or count or sort, which is done in the vain hope of making the dreadful feeling recede, backfires. An OCD compulsion does not dissipate like a scratched itch. Instead, giving in to the urge exacerbates the sense that something is wrong.*

*OCD patients dread the arrival of the obsessive thought and are ashamed and embarrassed by the compulsive behavior. They carry out behaviors they are desperate to escape, either because they hope that doing so will prevent some imagined horror or because resisting the impulse leaves the mind unbearably ridden with anxiety and tortured by insistent, intrusive urges. Since the obsessions can't be silenced, the compulsions can't be resisted.*

*Intense and persistent firing in the orbital frontal cortex causes an intense visceral sensation that something is wrong, and that action of some kind—such as counting, or checking if appliances are on—is needed to make things right. The reason for the visceral sense of dread that OCD patients suffer is that the orbital frontal cortex and the anterior cingulate gyrus are wired directly into the gut control centers of the brain.*

*After signals from the sensory areas have been processed and are considered by the orbital frontal cortex through certain handshakes to be warnings about potential threats, a signal will be sent to the thalamus to initiate the sequence to release stress hormones, which are felt as anxiety. The difference between anxiety and fear is that fear is triggered before the signal is processed by the sensory areas in the cortex; anxiety is triggered after the signals are processed in the cortex. Anxiety deals with potential threats; fear with immediate danger.*

*Another overactive region in OCD patients was the striatum. The Striatum is composed of two major information receiving structures: the caudate nucleus and the putamen, which nestle beside each other deep in the core of the brain just in front of the ears. The putamen acts as a major relay and switching station for motor activity as well as integrating visual information with the body and the caudate nucleus acts as a switching for thought and emotion.*

*Cells in the caudate known as tonically active neurons (TANs) tend to be found between striosomes and matrisomes; small clusters where information from emotion processing parts of the brain, and clumps of axon terminals where information from the thinking, reasoning, cortex, reach the caudate, respectively.*

*By virtue of their position TANs can integrate emotion and thought. They are the neurons responsible for activating related thought to specific emotions and vice versa. They fire in characteristic patterns when the brain senses something with a positive or negative emotional meaning. TAN's respond dramatically to visual or auditory stimuli that are linked through behavioral conditioning, to reward or punishment.*

*It seems that distinct environmental cues, associated with different emotional meanings, elicit different behavioral and cognitive responses as TANs shift the output flow in the striatum. This is how thoughts associated to emotions are turned on. When a particular emotion is felt, the tan neurons look for matching echoes; when found, they close the connection and stimulate the relevant thoughts. Conversely, when thoughts are active, they intrude by sending stronger echoes to the*

*striatum and in turn make the tan neurons lock and send the appropriate signals to initiate an emotional response.*

*The striatum receives input from the entire cortex, with the caudate receiving specifically strong input from the prefrontal areas. Prefrontal inputs include those from the orbital frontal cortex and anterior cingulate error-detection circuitry. It is now often called the “OCD loop”. When this loop is working properly, the result is a finely tuned mechanism that can precisely modulate the orbital frontal cortex and anterior cingulate by adjusting the degree to which the thalamus drives these areas. When the modulation is faulty, the error detector circuit can be over-activated and thus locked into a pattern of repetitive firing. This triggers an overpowering feeling that something is wrong, accompanied by compulsive attempts to somehow make it right.*

*As a result the direct pathway seems to be stuck in the “on” position. This is what Jeffrey Schwartz calls Brain Lock: the brain can’t move to the next thought and its related behavior. The thalamus continuously receives a “something is wrong” signal.*

*Located behind and above the orbital cortex, the anterior cingulate gyrus also has connections to the vital brain centers that control the gut and heart. The anterior cingulate gyrus seems to amplify the gut-level feeling of anxiety.*

*With this, a picture of the brain abnormalities underlying OCD emerges. The malfunctions center on the circuitry within the orbital frontal cortex (the “error alarm” circuit) and the basal ganglia, which acts as a switching station. In OCD this error circuit is inappropriately and chronically activated, probably because a malfunction in the gating function of the TANs in the caudate nucleus allows the prefrontal cortex to be stimulated continuously. The result is a persistent feeling (which engenders thoughts) that something is wrong or excessively risky.*

*Any successful therapy for OCD would need to enhance the gating function of the caudate so that the worry circuit can quiet down and allow a patient to resist OCD urges. The first step is to become aware that the urge is a manifestation of a mental disorder by directing attention to the urge and becoming convinced that how one responds to the urge can change the brain’s circuitry. This process is called Relabeling. When done regularly, Relabeling stops the unpleasant feelings of OCD from being unpleasant; understanding their true nature gives a feeling of control. By Relabeling their thoughts as manifestations of a medical disorder, patients willfully make a cognitive shift away from self-identification with the experience into the stream of consciousness.*

*The second step is to make the patients conscious that there is a neuroanatomical basis of their symptoms, an overactive region in their brains, which is causing the OCD. This is called Reattributing. Having Relabeled an intrusive thought or insistent urge as a symptom of OCD, the patient then attributes it to aberrant messages generated by a brain disease and thus fortifies the awareness that it is not his true self.*

*Relabeling clarifies what is happening and Reattributing affirms why it’s happening. The accentuation of Relabeling and Reattributing tends to amplify attention and allows the patient to separate himself from the intrusive experience. The essence of paying attention during a bout of OCD is to recognize obsessive thoughts as soon as they arise and Refocus attention onto some adaptive behavior. Directed focusing of attention becomes the key action during treatment. The goal of this step is not to obliterate or banish the thought, but rather to initiate an adaptive behavior unrelated to the disturbing feeling even when the feeling is very much present.*

*Refocusing requires significant willpower. Even when the patient has Relabeled and Reattributed the obsession and compulsions, the anxiety and dread can still feel frighteningly real. Refocusing, therefore, has to center on a pleasant, familiar “good habit” kind of behavior. In essence the patient must substitute a “good” circuit for a “bad” one. In other words he must change the firing pattern of the TANs and slowly change a negative situation for a positive one.<sup>42</sup> Through repetition other competing positive echoes will dampen the effect of the negative echoes. The diversion can be anything, but a physical activity is especially effective, like shooting baskets or gardening. The most difficult part of treatment, Refocusing attention away from the intrusive thought rather than waiting passively for the feeling to go away requires will and courage.*

*Setting a finite length of time to resist giving in to an urge helps patients. The fifteen minutes should not be a passive waiting period; it must be an adaptive activity intended to activate a new brain loop. Refocusing alleviates the overwhelming sense of being “stuck in gear”. This is where Relabeling and Reattributing come in handy: they both help the patient keep a clear mind about who they are and what the disease process is. This mental clarity has tremendous therapeutic value, for it keeps the Refocusing process moving forward. It also reinforces the insight that active will is separable from passive brain processes. Attention is extremely important to help encode the newer, positive experiences and slowly overwhelm the negative ones.*

*The next step in therapy is to exploit the brain’s tendency to pick up on repetitive behaviors and make them automatic—that is, to form new habits. Patients change their focus from “I have to wash again” to “I’m going to the garden”. If done regularly, the urge to wash will produce a habitual association: the impulse to go work in the garden. Ideally, the anxiety felt as an urge to wash will be replaced by a new habit: an anxiety-free desire to go work in the garden.*

*The last step is Revaluing. Revaluing is a deep form of Relabeling. Relabeling is a superficial encoding which leads to no diminution or improved ability to cope. Revaluing means quickly recognizing the disturbing thoughts as senseless, as false, as errant brain signals not even worth the gray matter they rode in on, let alone worth acting on.*

*Done regularly, Refocusing strengthens a new automatic loop and weakens the old, pathological one—training the brain, in effect, to replace old bad habits programmed into the caudate nucleus and basal ganglia with healthy new ones. When the focus of attention shifts, so do patterns of brain activity. With regular use of frontal cortex, changes occur in the gating function of the caudate, and mental function improves. Relabeling and Refocusing attention begin to be automatic. In this way frontal cortex thought process begin to be wired directly to the caudate.<sup>43</sup>*

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<sup>42</sup> Jeffrey Schwartz, *The Mind and the Brain*.

<sup>43</sup> *Ibid.*

## Mitch's Last Letter

On October 28, 2002, my son Mitchell wrote the following on one of my office computers. At the time he was working part time in the family business, so it could be the normal ruminations of a young man with problems. But perhaps . . . it is a message. My wife and I had gone to Acapulco on October 26, just a couple of days before he wrote this. That week he saw a psychologist three times. Maybe this was part of a process. We returned on November 6 the same day that Mitch went to New York City. It is a brief recounting of his illness:

### *Mitchell's New Life*

*As far as I can remember the feelings of anxiety began in High School. Towards that final year I began to get fearful symptoms of panic. I felt that it was directly related to mathematical thought. I would do mathematics and physics and the analytical thought would send my mind into a whirlwind of fear and panic. That was when I first decided to seek out some professional help. I went and saw a few people and they prescribed some medication. This was around the time that I had gone through my first real breakup. There were many emotions at that time and many uncertainties. Many days would pass when I felt hopeless and with my mind in a dark state. I was able to get into UCSB and Cal Poly as a mechanical engineer. I worked as a salesman that summer and decided to travel to Costa Rica and Portland. I read many books and decided that I would change my path of wanting to become an engineer. That was around the time when I met Katie. She was wonderful because she made me see the world in a completely bright way. The first year away at school I took quite a heavy load the first quarter but most of my subjects were social sciences. I spoke with Katie often on the phone. We supported each other in our insecurities and drove each other forward. That second quarter I tried to take more mathematics and I did quite poorly but was able to do quite well in my other classes. The panic would come and I would try to fight it off in whatever manner possible. Usually reading and writing would get my mind going to the point where I could stop it from getting too bad. Toward the end of that year, I was having more trouble sleeping and the symptoms seemed to get worse. I had remembered the year previous and my travels; I felt that was the solution. So I packed up and went off to Europe. I seemed to have moments when I was all by myself and feeling very panicky and indecisive. There were other times when I felt strongly motivated to create and write and paint. It seemed as though the panic would come and I would write. There were many times when I would write for long periods of time and it would get my mind from getting to that point. There got to a point where the writing did not seem to help. When I would get like this I felt as though people could see right through me, and*

*I was afraid of people when I felt his way. When I got back I started building a lot of things. That seemed to be like writing but even better for my state of clarity. I would build lots of things—chairs, ramps, and tables—and then I decided to take a job in Construction. This seemed to be new and wonderful. All of those feelings seemed to disappear. When I went back to school that next year, I took a part time job in construction and continued my undergraduate studies. Katie moved to Santa Barbara and things seemed to start anew and I was in great shape. I would awake feeling strong and motivated and go out and face the day. We were great teammates, Katie and I, and we made it well through that year. Toward the end I had decided to major in Mathematics so I decided to take computer science and upper division mathematics. Most of this was motivated by my father having always pushed engineering on us boys because he felt that most of the wealth he had created was done so through his mathematical mind. And I was poor at school and felt that if I could only change my condition that I would be able to be financially independent. Those classes seemed too rigorous to continue working in construction so I decided to quit that job and focus on school full time. That was around the time that I had trouble focusing and my work started to fall behind. I finished the quarter poorly but I was realizing that my friendships at school could usually pull me through the tough times. And of course, Katie was still by my side. That summer I took a job in construction and I did that for a month until I felt completely defeated and like I was completely wasting my time. I decided to start working for my parents' company. I did data entry for a month and went off to Vegas for two weeks. That following year I found a place in Santa Barbara and continued with the mathematics but also taking some mechanical engineering classes. I did well that first quarter and my mind felt strong. The graphic design part of the engineering seemed to make my mind quite resolved. I spent a lot of time with Katie and a lot of time skateboarding. I was doing fine until after Christmas. The mathematics got to upper division and I started to get the attacks bad. I was fine for about a month. Each day wore away my mind a little more until it got to the point where I could not sleep or eat much of anything. I withdrew from two of my classes and changed my major to International Studies. I began working part time in a machine shop and I finished the year strong and was studying philosophy, music and international studies. That was when I started to see someone and I began taking the medication. It seemed to kick in when I was studying and it made me tired instead of panicky. That summer I tried to start my own dune buggy business and I took some time apart from Katie. I got myself a dog and felt that the problems between Katie and I could be solved by getting a dog. That next year I continued taking the medication and I continued in school and working at the machine shop. I decided to focus all of my attention on school and was able to pull it off this time. However most of my classes were social sciences. I took four classes that winter and five classes in the spring. Katie had gotten into graduate school after Christmas and she decided she would go to New York. I decided to apply to school in Spain and also look around for a real job. I was accepted to Spain and I got a job in Engineering. I felt that I was now able to cope with analytical subjects due to the medication. I felt that an income was much more important than school in Spain so I decided to take the job. I was living all alone with my dog and I was doing work in a cubicle with my computer and my work from 8:00AM until 5:00 PM. I started missing Katie unbearably. I tried dating for a while and was having little luck. I would go to work and feel like I was going to start crying in sadness of missing Katie. A*

*real sense of depression seemed to set in and I felt as though nothing really made it go away. That was not the worst part. I hardly had any friends in the area so I began to take trips to the Lake with a friend Chuck. The mathematics of the job started making me feel the panic and it was getting worse by the day. By about the fifth week on the job I was loosing sleep, starting to realize that I could not do the job, I did one more week and decided to call it quits. I came home and started working out and helping Marne in the office. If I felt panicky I would go for a walk or a run and it seemed to get better. Lately it seems as though I've been going through really heavy ups and downs. Some days I feel all right and as though I'm moving forward in my own strange way and other days I feel as though all I can do is wait until bedtime to save me from the agony that I am feeling. It seems to be an uncontrollable wave of emotions that is some days all right and other days really bad. I am taking the medication quite regularly and feel as though there is nothing for me to really do here on this property. All of a sudden I feel the panic set in and I feel like I need to lie down and just do nothing. It is quite silent out here in this valley and it leaves my thoughts to wander in my head. I busy myself down in the office but my mind seems to be worn down. I feel as though Katie lies at the bottom of many of my emotions and aspirations. She was my teammate and companion. From this information, I am trying to tie together a new plan, which would get me going in a positive direction.*

*My mind can put together ideas—words, thoughts, complete places, and groups, times, locations, classes, people, and images. My mind can process but causes panic state: Numbers, computations, thoughts which [lead to panic are] a computation to be processed.*

*Photons stimulate receptors in the eyes in the movement of ions across the membranes of those receptors. Impulses are transported along the optic nerve to the lateral geniculate, a way station to the journey of the occipital cortex. At this point, billions of other neurons come into play. Involving language, memory, imagination, curiosity, pleasure and so on.*

*Plan 1: Graduate school.*

*The following programs are available at the University of California in Santa Cruz:*

*Anthropology*

*Applied Economics and Finance*

*International Economics*

*Psychology*

*In order to attend graduate school, I must first take the GRE test.*

*I must also receive three letters of recommendation.*

*Plan 2: Teaching*

*I could finish the one English class that I need in order to receive my BA and enroll in getting my teaching credentials.*

*MPC Telephone: 831-645-1357—call them and get the info for taking an English class in the winter.*

*2 appointments tomorrow.*

In December the University of California at Santa Barbara sent my wife and me a letter telling us that the flag would be at half-mast in honor of Mitchell on December 16, 2002. A couple of months later we received from UCSB Mitchell's Diploma; they decided that he should graduate posthumously, even though he was missing one half-course. When we saw his name on the diploma my wife and I broke into tears. We are grateful for this gesture, but what are we to do with his diploma? What good is it to Mitch?

I still cry every time I think of what his future might have been.

~

According to the *DSM-IV-TR* Manual, depression usually develops over a period of days to weeks, and it can include anxiety symptoms and mild depressive symptoms. These can be present for months before the onset of a full Major Depression. If untreated, depression typically lasts about four months. In the majority of cases there is a complete remission of symptoms, and a person returns to "normal". In many cases, some depressive symptoms (but not enough to diagnose a Major Depressive Episode) may persist for months or years.

In hindsight, I can tell you that if you suspect a loved one is suffering from Depression, do not hesitate to seek proper treatment. My research shows that in general, the younger one is, and the more aggressive the treatment is, the greater the chances that the Depression will be completely eradicated. Do not be fooled by an apparent remission; treatment and supervision should be continued by a professional until it is safely established that supervision is not necessary, or the conditions to return to treatment are clearly explained to everyone with need to know. Treatment should be pharmacological, and as soon as the treatment improves the patient to a level that permits therapy, therapy should be initiated.

There are many types of drugs to treat depression. If the one that is prescribed is not working in a matter of weeks, find another doctor if necessary, to prescribe another drug. If therapy is not working after two or three months, look for another doctor and perhaps a different type of therapy. The goal of the therapy should be to eventually stop medication entirely. Do not hesitate to do all this. Keep in mind that one in five people that suffer depression commit suicide! One in six that suffer from manic depression commits suicide.

Do not rely on the personal reports of the person suffering depression, because in many cases they learn to conceal many of their symptoms quite well. In general, close observation will reveal when something is wrong. You can detect agitation, a lack of concentration, restlessness, problems sleeping or getting up and about in the morning, loss of appetite, lack of pleasure in activities that traditionally have been pleasurable, disorganized thought. Any one of these symptoms by itself doesn't necessarily mean anything, but combined can alert you to various mood disorders.

Share your observations with others. They might observe different symptoms than you, and when you add the information together, a clearer picture emerges. Do not be bashful, and try to make the person understand that he or she is sick and needs treatment.

~

The letter Mitch intended to fax us from Europe in the summer of 1999 indicated no problems. Sure, perhaps some lines could be construed as *he is trying to send a signal*, but to me, it was really just Mitchell being Mitchell. The eloquent Mitch trying to write as well as possible.

That summer life moved on in a normal way. At the end of August, we (Pat and I, and Mitch returning from Europe—with Freddy joining us a few days later) went to New York City, and from there, to my mother's family reunion in Southern New Jersey. The family reunion was being held as an excuse to have a birthday party for my Uncle Courtney's ninetieth birthday.

On route to New York City, Mitch started and later continued this letter to his friend, Luke, who went to Middle School with him:

*I'm sitting here on this airplane on my way to New York and can't help reminiscing about our friendship; everything we went through and are still going through, is difficult but I know we will manage.*

*Remember this: You and I hitch-hiking our way around Carmel Valley, staying young, true to our ambitions and beliefs. Skate-boarding until we were drenched with sweat and blood; when loyalty was not an option but a first priority.*

*Above all, we lost our innocence together and for that I will never forget you. You taught me to throw up my fists for what I believe in; that discomfort is the only path towards balance and happiness; that life will continue and to stay calm even when confronted by scary situations.*

*Don't let the fire die out—I know it sounds cheesy but you're made of steel and I'd hate to see your potential go to waste.*

*Love,  
Mitch*

While in New York, two of my sisters, Pelusa and Susana joined us. One of those afternoons we went to the U.S. Open in Flushing Meadows. Mitch wrote this in one of the notebooks he carried in a backpack most of the time, probably the beginning of a letter:

*I write this to you not out of an uncontrollable yearning for the past, but with an optimistic view into the future. This summer I went everywhere and saw and felt life in its craziest intensity. I snowboarded, skate boarded (even won a contest), and wake boarded in Portland. I went*

*camping with Katie up to Sykes in Big Sur; had the two wildest days of my life. I then flew to Mexico. In Acapulco I reacquainted myself with my family.*

*I tell you all this, not to sound like the overanxious, falsely happy pretentious prick, but to let you know I'm O.K. Guess what? I'm at the U.S. Open right now. I'm not even joking. A year ago, to this day, I felt like life was over, and now I feel like it just started. I'm hanging out on this wild little porch, like a civilized person, drinking my Heineken. It was 5:10 and I was watching Pete Sampras play against Paul Goldstein. The stadium held about 10,000 souls and it was full to the gills. After the second set a guy died in the crowd. They had him on the floor and CPR was being given. Five minutes went by and I could see his feet coming out from the assisting crowd. They rushed in the paramedics, but I suppose it was too late. The sirens were audible within five minutes! God, the public intercom wouldn't shut up. It kept yelling, "Will people going to court two switch seating the stadium is full!"*

*The tennis match was not even interrupted. That's New York.*

On the same trip, but on another occasion Mitch wrote in his notebook:

*A giant splash of light filtered through the skyscrapers in NYC at 3:50 PM late August and I could see thousands of people walking by.*

*It was pretty hot and I could see the Citibank across the street. Like herds of cattle or sheep, people migrated; some wore suits and neckties, others wore khaki pants with odd patterned cotton long sleeve shirts. I sat on this wonderfully dirty marble staircase next to an elegantly designed copper rail.*

*This is Fifth Avenue I'm talking about. I mean, the people just appeared out of nowhere. I wonder if there's ever been a study done on people who randomly roam the streets of New York. Some seem to be workers on a break, others tourists on vacation and others look like extras in a Tarantino movie.*

*Lots of people were wearing designer clothes, others wore torn up rags and begged for money or beer or sex. There was no possible way to look out of place. The stranger and more disabled one could be, the better the chances that earthling had of receiving importuned money. Now, the classier one dressed, the more intensely one was attacked by avid sales people.*

*It was almost hilarious that nobody even noticed me staring and writing. They were all so eager to look in a window, become anxious to buy, go in the store and purchase some item. Then, with little or no thought, go to work on Monday, look at the windows at night, and complain on Friday nights that he can't afford to pay the rent.*

*Lovers, freaks, businessmen, priests, and criminals strolled past me. Casting a gothic shade on half a city block was Saint Patrick's Cathedral. A yellow Porsche, golden as the sun and fresh picked bananas turned right on 52nd.*

~

After forty years of smoking, it was time for me to quit. My marriage, among other things, hung in the balance. Mark Twain said it nicely, "Quitting smoking is easy. I

have done it hundreds of times.” I started smoking when I was ten years old. Like Mark Twain, I quit many times. Sometimes for a few days, other times for a few months. Invariably I returned. I tried the patch, cold turkey, will power, slow withdrawal, nicotine gum, acupuncture and hypnosis. Nothing had really worked. How do you re-wire your brain?

I ran into a dear friend of mine at the Airport in Mexico City. I hadn’t seen him in a couple of years and he looked great. The last time I had seen him, we had made bets on how soon he would die. He was smoking close to three packs a day; his hands and teeth were yellow; his skin had a gray pallor to it; his voice was raspy and his coughing continuous. This day, however, his eyes were clear, his skin was rosy, his voice sonorous and clear. “You look great! What have you done to yourself?” I blurted out surprised at his appearance.

“I quit smoking about a year ago,” he said as if this would explain everything.

“You quit smoking?” I asked in disbelief. “How did you do that?”

“It was easy. It was even fun. Call me; I’ll give you the number of the doctor that helped me, if you’re interested.”

If this was true, I was definitely interested. I got all the information from my friend and signed up for this program. The program consisted of four consecutive daily sessions lasting between three and two hours each. I enrolled and showed up on a Monday for the first session.

The doctor quickly went over the dangers of smoking. “You’re lucky if you get cancer, so I’m not going to discuss it. I’m saying lucky, because you die quickly. And then, there is always a chance that you won’t get cancer.” He continued with more of the possible, but not necessarily evils of smoking, “When tobacco is stored to dry, rats can run over the leaves and piss on them. Rats are carriers of Ebola virus, so contracting Ebola virus is a possibility. Then again, perhaps you never get Ebola from smoking.” And so it went until he said, “What I want to make sure you know is not if but when you will get emphysema. We might not be able to ascertain when, but you will get it for sure if you continue smoking.” He then explained in detail the slow and gruesome death that ensues from emphysema—the coughing, choking, inevitable intravenous feeding. And lastly, because of the unpleasantness of others visiting with you in such a state, the prospect of dying alone.

He invited us to go visit some of the patients in the Pulmonary Center of Mexico City. He emphasized that whatever damage we had done to our lungs in all our years of smoking was irreversible. The good news—that by quitting now, our lungs would not deteriorate further. When he was finished with all the terrible things about smoking, he quickly reviewed the rewards of quitting.

He then explained that there is no physiological dependence on nicotine. “No one has ever reported a person dying from quitting smoking,” he interjected for dramatic effect. “There is a psychological-emotional dependence. Smoking is always associated with an emotion. We smoke more when we feel good. We smoke more when we feel bad. We smoke more at a party when we are with friends and family and

we smoke more when we are nervous or under pressure. We feel that our negative feelings are less negative, and our positive feelings are more positive. The reality is that when we smoke, we create a bad habit. What this program is going to do is help you substitute other habits for the bad habit of smoking, habits that are not dangerous to your health. Habits that you will eventually be able to abandon completely, because you will realize how stupid and irrational these habits really are. For reasons that are unknown, creating new habits or abandoning old habits is a process that takes twenty days.

“We are going to change all your usual habits for twenty days. For example, if you drink coffee in the morning, we are going to substitute it with tea. If we like to have a drink in the afternoon, we are going to change this drink for a drink we don’t like. For example if you like to have rum and coke and you hate gin, then you will order a gin and tonic.

“If you follow my program religiously, you will have all the tools at your disposal to lick the bad habit of smoking.

“You will now proceed to give me your cigarettes and lighter. I will give you in exchange a small kit. This kit contains the following: a pack of Delicados without filter. Why Delicados? Because it is one of the few cigarettes that is made with rice paper. This paper tastes different. Also the tobacco has fewer chemicals.”

He pulled a box of matches from the bag. “If you light up, you will use matches, no lighter. Also in the bag we have a pipe. I want you to put a little bit of cotton in it, and then apply a few drops of this liquid.” He held up a small plastic container that looked like eye drops.

He continued, “These drops have a little bit of a taste and aroma, different than cigarettes, but a taste and a smell. We want you to continue to enjoy the sensation of a taste and a smell. There is nothing wrong with that.”

I had already given up my cigarettes to a trashcan, so I gave up my lighter.

“When you leave here, I want you to buy some cinnamon sticks and some all spice.” The doctor continued, “if you are a guy, you will carry your cigarettes and matches in your sock. If you are a woman, you will carry them in your bra. We don’t want to change your habit of looking for your cigarettes; after all, once you have them with you, you feel good. We don’t want to change that good feeling. Also, whenever you become aware of your cigarettes, I want you to remind yourself why you are trying to quit smoking, and why you’re carrying your cigarettes in a different place.

“In the morning, when you wake up and it is time for your coffee, you will have your tea. Then, if you feel like smoking, you will refrain from smoking until fifteen minutes have passed. We don’t know why, but fifteen minutes is the least amount of time that we need to enforce to change our behavior. If after fifteen minutes you still feel like smoking, go ahead and light up. The most important thing is to follow the next steps.

“After each meal, you will immediately get up and go brush your teeth. You will not linger at the table. Then you will gargle with a mouthwash for a couple of minutes. Look at yourself in the mirror and inhale deeply and exhale slowly fifteen

times. We don't know why fifteen times, but we find that fifteen is again a minimum to change behavior.

"The reason we do this is because when you finish eating, your mouth is full of bacteria. If you smoke after the meal, the hot smoke helps the bacteria with its decaying process, which in turn helps break down the small pieces of food in your mouth. This is a pleasurable feeling. We don't want to change a true pleasurable feeling, so we'll sidestep it by brushing our teeth and gargling. We will quickly rid our mouths of the small bits of food.

"When you inhale deeply when you smoke, it pushes your diaphragm down." He showed us by taking a deep breath and expanding his chest. "This is a nice sensation; again we don't want you to forgo this positive sensation you are used to. That is why we inhale and exhale. After all this, then you can go back to the table. This is terribly important: No matter what, for the next fifteen minutes you will not smoke. If at the end of these fifteen minutes, you feel like smoking, you will breathe in and out deeply fifteen times, just like after gargling. When you have the urge to smoke again, you will pull out your pipe. You will pull air through it, chew on it, play with it with your hands, suck it, and do anything you want with the pipe for as long as you find it bearable. The longer the better. My experience shows me that the craving subsides in just a few minutes.

"Then, if later you feel an urge to smoke again, you will start chewing on one of your cinnamon sticks. The reason we do this is that you have become habituated to punish your mouth with hot smoke. In this case we will give your mouth a tickle with the cinnamon. Chew on the cinnamon as long as you can. Then when you feel like smoking again, you will chew on your all spice. This is the only thing we are using that will cause a physical calming effect. It is spicy, but it will give you a nice sensation of cleanliness in your mouth, a freshness of breath. Chew on it as long as you can.

"Now, if you still feel like smoking, pull one of your cigarettes out and smoke it. The only thing I am going to ask of you when you follow all this, is that you don't rush through it—don't rush your breathing, then chew on your pipe for two seconds, then the cinnamon stick for ten seconds, then the all spice for five seconds, and then light up. That is not the idea. After smoking, start all over with the procedure. Your breathing, followed by the pipe, then the cinnamon and lastly the all spice. If you can't finish all the steps between meals and it is again time to eat, when you finish your meal start with brushing your teeth, gargling, breathing, your fifteen minutes, then the pipe, then the cinnamon, then the all spice, and then smoke if you still feel like it."

He then answered all our questions. Many sat there in disbelief that you could smoke while you were trying to quit smoking. He explained, "The first day you will wait for fifteen minutes after your breathing after each meal, but every successive day we will add to that another fifteen minutes. So, the second day you will have to wait 30 minutes. The third day 45 minutes and the fourth day one hour. On the fifth

day you will not smoke. I guarantee you that. You then complete this for another fifteen days and you will be cured of the bad habit of smoking.”

He answered more questions. “After the nineteen days, you might find some of these new habits pleasurable; if so, continue one or any of them. I’m referring to the breathing, or the pipe, the cinnamon or the allspice. These new habits are not bad for your health; keep them up for as long as you want. I have had a few people come back and report to me that they started smoking after completing the nineteen days. I only have one response for that; “I have no cure for stupidity. If you smoke when you have no desire, it is only because you are stupid.”

The doctor then proceeded to hypnotize us to the accompaniment of music. The hypnosis was to increase and re-enforce our desire to be well. The music provided a calming or soothing effect. He encouraged us to listen to this music if we felt like smoking. He then wished us good luck and sent us off with, “We’ll see you tomorrow at the same time.”

I proceeded to do all that he had asked. I found I was too busy with all the routines to remember smoking between meals. Many times I found that I didn’t even have the time to complete a whole routine (brushing teeth, gargling, breathing, pipe, cinnamon chewing and all-spice combination) between meals! It seemed so stupid to be doing all this, and by extension so stupid to smoke. From that first day on I never smoked again.

It is a therapy very similar to Dr. Schwartz’s OCD therapy. Rewiring of the brain is possible with work and the appropriate exercises.

~

# Regulation of Emotions, The Isorropic Circuit, The Self

## *The Regulation of Emotions*

*Emotions are a direct expression of bio-regulation. Some of the structures or regions in the brain identified as emotion-triggering sites are the amygdala, the hypothalamus, the thalamus and in the cortex a part of the frontal lobe known as the ventromedial prefrontal cortex and the supplementary motor area, and the cingulate among others.<sup>44</sup>*

*The amygdala is an important interface between visual and auditory ECS and the triggering of emotions, in particular, but not exclusively, fear and anger. When the amygdala is damaged, fear and anger are not possible. Activation of the amygdala shows a linear relationship with decreasing intensity of happiness and increasing intensity of fear.*

*Emotionally competent stimuli are detected very quickly, ahead of selective attention. This is accomplished by setting up an echo signal with a tag that, when a stimulus is matched by the thalamus, will automatically trigger an emotional response even before the stimulus is processed cognitively.*

*Social emotions are triggered by complex and specific patterns of handshakes from the sensory and other cortex areas that, when presented together, are recognized by the frontal lobes as emotional competent stimuli (ECS) through genetic and learned responses in our childhood. When the echo signals of the orbital and prefrontal cortex representing the complicated patterns of the ECS is matched by the thalamus and the caudate nucleus, the appropriate social emotion is automatically triggered.*

*Social emotions differ slightly from primary emotions. In primary emotions, the thalamus detects an exact match between incoming sensory signals and the echoes from the cortex representing the primary ECS and the emotion is triggered automatically. In social emotions, the ventromedial and orbital frontal areas detect complicated patterns of handshakes representing the social ECS. Depending on the handshakes' qualities, echoes are sent to the limbic system and the thalamus and automatically signals are sent to initiate the appropriate chemical and neural responses without further matching with sensory signals, which result in the proper social emotion.*

*The brain attempts to maintain at all times a one-to-one internal emotional landscape according to the external conditions to produce the best response. This depends on the brain*

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<sup>44</sup> Joseph LeDoux, *The Emotional Brain*.

*creating and maintaining a dynamic model of the external environment and generating a new internal emotional representation in response.*

*Neurons in the ventromedial prefrontal region respond rapidly and differently to the pleasant or unpleasant emotional content of pictures. Unpleasant emotions activate the right side more.<sup>45</sup> This suggests a certain asymmetry in which the right side is more involved with negative emotions than the left. More likely, more activity on the right side, relative to the left, is perceived as a negative emotion.*

*The hippocampus is connected to the amygdala and provides it with information about the context of the present emotion. The amygdala sends signals to the hypothalamus, midbrain, pons and medulla, and thus helps control the emotion reactions according to the context. The amygdala also projects to the periaqueductal gray matter and, in this way, the extent of an emotional reaction (gestures and motor actions) can be carefully adjusted depending on the specifics of a particular situation.*

*The emotion-execution sites include the hypothalamus, the basal forebrain and some nuclei in the brain stem tegmentum. The hypothalamus is the master executor of many chemical responses that are part of our emotions. Directly or via the pituitary gland it releases into the bloodstream chemical molecules that alter the internal milieu, the function of viscera, and the function of the nervous system. Oxytocin and vasopressin, both peptides, are examples of molecules released under the control of the hypothalamic nucleus with the help of the posterior pituitary gland.<sup>46</sup>*

*Many emotional behaviors (like attachment and nurturing) depend on the timely availability of these hormones within the brain structures that command the execution of these behaviors. It is crucial to have the right responses at the right times. Attempting to have sex with a predator could be lethal under the best of conditions.*

*Likewise, the local availability of molecules, which modulate neural activity, like dopamine and serotonin, causes certain behaviors to occur. The sort of behaviors experienced as rewarding or pleasurable appear to depend on the release of dopamine from one particular area (the ventrosegmental area in the brain stem) and its availability in yet another area (the nucleus accumbens in the basal forebrain).*

*In short, various brain nuclei that control the movement of the face, tongue, pharynx and larynx are the ultimate executors of many behaviors, simple and complex, that define emotions, from gestures and body postures, to courting or fleeing, to laughing or crying and fighting. It makes sense that the controlled movements of vocalizations (screaming or shouting), or facial gestures (laughing or smiling), or body postures (leaning forwards or slumping) are intimately linked to communicating the different emotional responses. Facial expressions, vocalizations, body postures and specific patterns of behavior (e.g., running, freezing, parenting and so on) are thus enacted. Emotion is all about transition and commotion, sometimes real body upheaval. In a parallel set of commands the brain structures that support image-production and attention change as well. Depending on the chemistry of each emotion, some areas of the cortex become less active while others become particularly active.*

<sup>45</sup> Jeffrey M. Schwartz, *The Mind and the Brain*.

<sup>46</sup> *Ibid.*

*Emotions elicit particular memories to initiate certain behaviors in response to specific stimuli. They manage this in three ways: (1) the chemistry of the emotional state activates all memories related to the emotion, as this chemistry is specific to the memories; (2) they intrude on the attentional systems; and (3) they initiate certain behaviors (motivations or modes of thinking) like fleeing or approaching the stimulus. Motivation is used here as a term that refers to neural activity that guides us to a goal, outcomes that are desirable and for which we will exert effort, or to the opposite, an outcome that we dread and will exert effort to prevent, escape from or avoid.*

*Goals direct action. They can be a specific stimulus (food) or an abstract belief or idea (it is worth dying defending freedom). Some of our beliefs are obtained early in childhood by conditioning (families should or should not stay together) or by observational learning (we learn to parent as young children and we learn to hunt by playing games) or even by force of imagination (God is on my side).*

*Not all motivations are induced by emotions, but emotions are powerful motivators to action. Motivations can be modified by past experience. The purpose of these beliefs is to push the brain into a state that more likely will produce an instrumental response.*

*In the presence of an emotionally arousing stimulus, the brain is placed in a motive state, which leads to coordinated information processing within and across areas, and results in invigoration and guidance of behavior towards positive goals and away from aversive ones. The motor regions are strongly activated and movement is initiated. Behavior can be potentially invigorated by anything that activates certain cells and causes them to release dopamine. Novel stimuli are a prime example of invigorating stimuli. But invigoration alone is not enough; behavior also needs to be guided. The amygdala, when it detects a positive outcome increases the dopamine release and reinforces the signal.*

*Once an emotional habit is well learned, the brain system involved in expressing it becomes simpler. Once learned, the procedure might be transferred to the cortex and stored as an echo. The echo, then, can trigger that emotion. With an expanded cortex, more habits can be stored and enacted. This is similar to explicit learning: initially, both the hippocampus and cortex are involved, but once the hippocampus has slowly "taught" the cortex the memory, the memory persists without the aid of the hippocampus. The hippocampus may well be involved in the guidance of behavior on the basis of spatial and other kinds of relational cues in the environment. In order to find good things and avoid bad ones, you need to know where you are, where you need to go, and how to get there from here, as well as activating all the memories that might be useful to guide you on the way. The hippocampus contextualizes emotions, and if the context is appropriate, reinforces the emotion; conversely if the context is inappropriate, the hippocampus defuses the emotion.*

*Goal directed behavior is best thought of in functional terms. Normally we try to escape or avoid harmful stimuli, but in some cases, we have to actively engage something dangerous in order to achieve protection. Hunting is a good example. Sometimes, fighting is a better alternative to fleeing or the only alternative. Decision-making compresses trial and error learning experiences into an instantaneous mental evaluation about what the consequence of a particular action will be for a given situation. It requires integrating information from various sources: perceptual information, relevant facts and experiences, feedback from the emotional systems and the physiological consequences of the emotional arousal, expectations of results of various possible actions and so on.*

*We have to be careful not to fall into the illusion that all executive functions happen in the prefrontal cortex. For example, recent studies point to contributions from the parietal regions to the decision making process of what eye movements to control. The executive functions are a process that happens in many areas working in unison.*

*The thalamus, according to signals (produced by the echoes and handshakes corresponding to matches with external or internal stimuli) from the orbital cortex, will generate a degree of calmness or anxiety indicative of how positive or negative the event is. Through circuits that link the thalamus to the amygdala and then to the prefrontal and orbitofrontal cortical areas, the activity of the amygdala is regulated, reflecting the degree of anxiety or calmness. The levels of dopamine, in part, will then determine the degree of pleasure or desirability.*

*The brain communicates its internal emotional state to other brains using specific universally recognizable facial movements, gestures, body postures and the prosody of speech. In social animals this is of extreme importance.*

*The emotional displays reflect in very subtle ways the emotional states of the brain; and an emotional transfer is achieved when properly read. And more interestingly, producing the exact facial expression of an emotion generates the actual emotion. This has big therapeutic potential.*

*Interestingly, recreating an emotional facial expression generates the emotion. Raising the inner eyebrows, and raising the cheeks, and lowering of the corner of the lips, will be sufficient to create marked changes in the autonomic system. This generates sadness and anguish. If you lower the brows, and raise the upper eyelid, and narrow the eyelids, and press the lips together, you generate anger. The heartbeat will go up ten to twelve beats and the hands will get hot. By simply learning how to create the facial expressions that correspond to stressful emotions as anger, sadness and fear produce the corresponding physiological changes.<sup>47</sup>*

*The orbital prefrontal cortex is positioned as a convergence zone where the cortex and the subcortex meet. It is the only cortical structure with direct connections to the hypothalamus, the amygdala, and the reticular formation in the brain stem that regulates arousal.<sup>48</sup> Other areas of the cortex, through extensive handshakes to the orbital prefrontal regions activate neurons that process facial gestures and prosody. These handshake signals can also activate clusters capable of appraising changes in the social environment, especially social interactions.*

*Neurons in the parietal and frontal lobes, called mirror neurons, that fire when you move your hand as well as when you just watch someone else move their hand, also have counterparts that not only fire when you stick your tongue out or purse your lips, but also when you see someone else do it, even though you have never seen your own lips or tongue.<sup>49</sup> The mirror neurons guide imaginary replication of other's expressions, and through the association of emotion to motor commands linked to emotional expressions, trigger subtle emotional reactions.*

*Emotions do not only elicit specific, related memories and behaviors, but also, through the external expression of these emotions, communicate these emotional changes to others. What is*

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<sup>47</sup> Malcolm Gladwell, *Blink*.

<sup>48</sup> Allan Schore, *Affect Regulation*.

<sup>49</sup> V. S. Ramachandran, *A Brief Tour of Human Consciousness*.

known in psychotherapy as transference and countertransference is a continuous process of emotional information transfer between individuals. Species-specific, emotional, expressive displays in the sender activate the attentional systems of the receiver, thus becoming emotionally competent stimulus. As such, the expressive displays automatically trigger the same emotion in the receiver. When the brain of the receiver perceives the emotion, the meaning of the emotional display is felt directly. The attentional systems hover, shifting from the external sensory stimuli (the expressive displays) to the internal emerging bodily sensations (the emotions generated as an automatic response). Thus the emotional communication achieves a somatic transference.

When emotionally competent visual and auditory stimuli emanating from a face are detected (by matching facial and prosodic echoes), handshakes are sent to the orbitofrontal cortex. These handshakes are interpreted as particular ECSs by the orbitofrontal cortex. Due to its unique connections, concurrent changes in the emotional or body state can be enacted as a response to the external emotional information. This reciprocal process reflects the changes in internal states. This transfer of emotional information begins in early development between child and mother, and continues throughout life in social interactions.

The emotional information transfer between two or more people is achieved in a variety of ways. The transference of emotional information is based on recognizing the affective expressive qualities using various sensory signals (visual, auditory, tactile, kinesthetic and olfactory). Facial expressions are automatically mimicked. When we do so, our sequence of facial movements can trigger the same emotion that generated the facial expression. The emotional transfer is achieved by generating internally the same emotion, generally at a less intense level. We “recognize” emotions from visually presented facial expressions by reproducing internally the emotion that would generate the same facial expression. This non-verbal process allows us to feel what others are feeling.

A gaze between one individual and another also acts as a strong channel for transmission of emotional states. It has been observed that the pupil of the eye acts as a nonverbal communication device.<sup>50</sup>

Under normal conditions every transference of emotional information elicits a countertransference that confirms the emotional communication. These reactions are very fast, occurring in microseconds, reflecting the somatic emotional changes. Transference of emotional positive changes generates positive changes in the receiver, just as transference of negative emotional changes produce negative changes in the receiver. These transferences are very valuable in a social environment to: a) quickly spread information about how good or bad an event is; b) to ease coordination of actions among a group as a response to an outside threat or opportunity; and c) to facilitate adaptive behaviors such as attachment, bonding, fleeing or attacking. These are a bodily-based perception of meaning. The feelings are a viscerosensation that serves to evaluate if an event is “good” or “bad” in proportion to the feeling generated. Thus sensory inputs alter the internal environment to heighten or dull the perception of the external world and elicit a behavioral response.

<sup>50</sup> Hess, E.H., *The role of pupil size in communication.*

*Not surprisingly, since the memories to identify faces and prosody are on the right side, recent studies have shown that the right hemisphere is faster than the left hemisphere in processing emotional content from facial expressions and spoken language.*

*The right hemisphere is, more so than the left, deeply connected into not only the limbic system but also the sympathetic and parasympathetic branches of the autonomic nervous system that controls the somatic expressions of all emotional states. Because the hypothalamo-pituitary-adrenocortical axis and the sympathetic-adrenomedullary axis are both under the main control of the right cortex,<sup>51</sup> the right side is responsible to a greater degree to mediate adaptive functions by generating the appropriate emotions. Basic emotions—excitement, fear, elation, rage, disgust, and shame—produce differentiable autonomic activity. The intensity of the feelings, positive or negative, elicited by the emotional reactions, produces non-verbal evaluations of events; we “know in our guts” if it is good or bad. The automatic and fleeting emotional expressions produce an emotional reaction in the receiver. This resonating process is interactively regulated, amplified, and can be held in short term memory long enough to be felt and recognized. At this point the right-brain “gut” knowledge becomes available to the verbal (thinking) left hemisphere for further processing.*

*The ability to communicate to others and, read in others, these subtle emotional states, varies from individual to individual (and from species to species).*

*After the brain’s perception of the emotion, the non-verbal emotional experience in the right hemisphere must be transferred to the left hemisphere for linguistic expression of the feeling. The bodily sensations produced by the emotion are perceived as feelings and eventually the feeling can be verbally articulated. This allows for a linkage of the non-verbal implicit and verbal explicit memories through emotions.*

*When a stimulus generates an emotion, the emotion gives rise to a bodily felt sensation, which is the implicit knowledge. It is knowing without words. The explicit knowledge emerges at another level. It is formed from pre-conceptual, implicit, and incomplete information through the interaction of feelings and symbols (words or thoughts). The explicit knowledge is not a previously hidden one that now becomes clear, but one that is formed by putting feelings into words. This process, the verbalization of emotions, is not always possible.*

*There are several emotional regulation modes: one is an interactive regulation via two or more emotionally interacting individuals, the emotional information transfer; another, is an interactive regulation through the external changing conditions that change the internal emotional state; and lastly, is a self-regulatory process, based on feedback and automatic tendencies to reach a neutral state of calmness.*

### *The Isorropic Circuit*

*This elegant system, comprised of a few small structures buried deep in the middle of the brain (the habenula and the medial and lateral septal nuclei, including the diagonal band of Broca), receives its major inputs from the thalamus and the hippocampus and is continuously adjusting*

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<sup>51</sup> Allan Schore, *Affect Regulation*.

*the internal emotional state to the external, ever-changing environment, attempting to produce, at all times, the adequate emotional response. This system, through the signals it sends to the reticular formation, is an emotional arousal and, balancing and tuning system. It summarizes the activity of the entire brain, taking into account emotions, cognitive signals translated into contexts and meanings, and accordingly, fine-tunes the signals of all neurotransmitter systems in the brain stem.*

*This arousal system, in a slow gradation of excitability, from less to more, associated with negative and positive emotions, using asymmetries in the brain, detects and generates very fine emotional distinctions covering a whole range: from happy, changing slightly to blissful, playful, grateful, safe, relaxed, undecided, uneasy, frustrated, alert, tense, cautious, anxious, afraid, all the way to panicky; or conversely, starting from lonely, changing to bored, humble, bashful, ashamed, envious, determined, optimistic, joyous, all the way to loved.*

*The primary function of this circuit is to try to balance activity in both hemispheres, continuously attempting to restore neutral calmness, reflecting its evolutionary path when lateralization was less prevalent in more primitive brains. This habenula-septal circuit is important enough to deserve its own name, the isorropic circuit (from the Greek, isorropia=balance). It is worthwhile to see in detail how the isorropic circuit works.*

*I recommend reviewing the details of this important circuit. However, the reader may go to next chapter, *The Self*, where I present how this circuit is related to the generation of the self.*

*The convergence of signals from the cortex and the output of the basal ganglia (where the integration of external with internal space is accomplished by the basal ganglia loops through a continuous stream of echoes that activate implicit memories and trigger emotions automatically) to the thalamus as well as the extensive reciprocal connections of the cortex to the hippocampus are the circuits where a variety of cortical signals can be unified and the attentional systems controlled. This unification and control of attention permits the activation of explicit and episodic memories aided by the very subtle activation of the needed emotions.*

*If we add the connections to the hippocampus, the thalamus and the basal ganglia to the isorropic circuit, we can identify the center where all cortical activities are streamlined into a single unified perception. This perception has several components: a spatial/somatosensory (a body/external space integration); a sensory (from all senses); echoes from all cortical areas (implicit memories) as well as an emotional component, which in turn has the potential to activate handshakes (all explicit memories); and, an associated context (activating attention to focus on associative areas—more handshakes). The attentional systems, the somatosensory, the visual and the auditory, focus on one salient stimulus to extract the most possible information. This feeling is as close as possible to a technical definition of consciousness. Consciousness is what it feels like to be here.*

*Emotions can be labeled positive or negative. In general, situations and events conducive to positive emotions should be promoted; those leading to negative emotions, avoided. Such emotions should not be confused with motivations of approaching or withdrawing; both easily found behaviors within the context of experiencing a positive or negative emotion. Approaching or withdrawing behaviors depend on previous knowledge and/or a particular context.*

*The right hemisphere computes on a moment-by-moment basis the emotional salience of external stimuli. This is equivalent to sending out handshakes with a “valence tag,” in which perceptions are given a negative or positive affective value reflecting degrees of pleasure-unpleasure.*

*Positive emotions are associated with a very slight increase of neural activity in the whole brain, and activation of the left anterior cingulate cortex, relative to the right. Conversely, negative emotions are linked to a slight decrease in neural activity overall and activation of the right anterior cingulate cortex, relative to the left.*

*Emotions can produce asymmetrical activation, where, for example, anger produces more left frontal activation and fear more right frontal activation.<sup>52</sup> In this case we need to think of anger as a positive emotion and fear as a negative one.*

*There are circuits associated with positive and negative valenced emotions. Using the output of these circuits, the orbitofrontal circuits alter the brain’s basic rates of signaling: the positive states speeding up the rate of signaling and the negative states reducing the overall rates. The job of the isorropic circuit is to restore balance within certain ranges as soon as feasible.*

*As we have mentioned, the output of the TAN neurons in the caudate nucleus is directed to the basal ganglia, whose output in turn is mostly directed to the thalamus.<sup>53</sup> The caudate nucleus is the interface between emotions and memories. The thalami are connected contralaterally (in about 70 per cent of people, in women more than men, and in women more strongly than in men) through the massa intermedia.<sup>54</sup> Could there be some relation between the 30% that do not have a massa intermedia, making it harder to balance activity on both hemispheres, and a tendency to suffer unipolar or bipolar disorder?*

*The output of the isorropic circuit (through a series of circuits that connect the cortex to the hippocampus and the thalamus, other projections that connect both hemispheres of the brain, and feedback loops to the hippocampus, involving inhibitory and excitatory neurotransmitters) to the reticular formation, which controls release of all major neurotransmitters, can alter the functioning of the whole brain.*

*In a nutshell, the habenulas receive major information from the activity of the thalami, reflecting total cortical activity from each hemisphere, including information from the amygdala, mirroring the emotional state. As a minor input, the habenulas receive, through the medial septal nucleus, contextual information from the hippocampus. The habenula on each side connect to each other through the habenular commissure.*

*Thus the habenula has efferents from various structures involving different neurotransmitters: acetylcholine, serotonin and dopamine from the septal nucleus and primarily GABA (which can be affected by dopamine) from the thalamus’ stria medullaris. The hippocampal and the habenular commissures, more so than the massa intermedia that joins the thalami, assist in maintaining*

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<sup>52</sup> Jan Wacker, Marcus Heldmann, and Gerhard Stemmler, *Separating Emotion and Motivational Direction in Fear and Anger: Effects on Frontal Asymmetry*.

<sup>53</sup> Jeffrey M. Schwartz, *The Mind and the Brain*.

<sup>54</sup> John H Martin, *Neuroanatomy*.

*a balance between the activity of the two hemispheres by speeding up or slowing down one hemisphere with respect to the other.*

*This architecture suggests a strong emotional modulatory role for these circuits: when activity in the brain picks up (positive emotions), the GABAergic interneurons of the isorropic circuit slow it down; when activity slows down (negative emotions), the activity of GABAergic interneurons slows down, and brain activity increases. However, the increase or decrease of brain activity modulated by the habenula is not a linear function because GABAergic interneurons also slow down or speed up cholinergic activity inversely. Simultaneously, the cholinergic activity increases or decreases the inhibitory action of GABAergic projection neurons, but because the cholinergic excitation is through slow muscarinic receptors, there is a time lag. This time lag, allows the influence of dopamine and serotonin to change the functioning of the brain. However, at the level of serotonin or dopamine, any attempt to pharmacologically influence the functioning of this circuit is very slow, sometimes even up to two weeks.*

*Indirectly, through the thalamus and the hippocampus, when positive emotions are present the left habenula receives greater excitatory signals than the right habenula—the activity in the left anterior cingulate is greater compared to the right and activity of the cortex as a whole is increased—excitatory (more+) from the whole cortex and excitatory (more+) from the left anterior cingulate through the thalamus. Let's call it (more+)(more+) excitation. Whereas the effect on the right habenula under similar conditions is excitatory (more+) from the whole cortex but less from the right anterior cingulate (less-). Let's call this (more+)(less-) excitation. This will establish a net excitatory effect from the left to the right habenula, attempting to restore a balance in both hemispheres by making the signals from both habenulas (left and right) to the reticular formation more similar. This net excitatory effect from left to right through the habenular commissure is perceived by the brain as pleasant.*

*Adding to the excitatory (or inhibitory) effect is the action of the massa intermedia (when existent) and of the hippocampal commissure, stimulating (or inhibiting) each hippocampus to match each other's activity and through their many glutamate and cholinergic cortical connections increase or decrease each hemisphere's activity as well.*

*Similarly, when negative emotions are present the left habenula receives less excitatory signals than the right habenula—the activity in the right anterior cingulate is greater compared to the left and the activity of the cortex as a whole is decreased—less excitatory (less-) from the whole cortex and less excitatory (less-) from the left anterior cingulate. The excitation is (less-)(less-). Whereas the effect on the right habenula is less from the whole cortex (less-) but greater from the right anterior cingulate (more+); this produces (less-)(more+) excitation. This is not necessarily the same as (more+)(less-), because the degree of excitation from the whole cortex and the anterior cingulate are not equivalent. In this case, a net excitatory effect is produced from the right to the left habenula. This net excitatory effect from right to left is perceived by the brain as unpleasant.*

*The isorropic circuit's main activity is to return the whole brain to a desired neutral state, speeding up or slowing down the activity of each hemisphere or the entire cortex as needed. Dictated by the cytoarchitecture, the isorropic circuit can re-establish a neutral calmness at a faster rate when the emotion is positive than when it is negative.*

*The contralateral communication between the medial septal nuclei and the habenulas also helps regulate the output of each habenula to the interpeduncular nucleus and the reticular formation. Thus, GABAergic, cholinergic, dopaminergic and serotonergic systems excite a cholinergic output to the reticular formation. The actions of these circuits continuously attempt to establish a balance between the activities of each hemisphere. When the activity of both hemispheres is equal, a preferred state of neutral calmness is achieved.*

*Primarily, the isorropic circuit achieves five actions: 1) modulate the activity in each hemisphere by dampening or quickening activity as needed; 2) increase overall activity of the entire cortex; 3) determine the emotional state through the indirect connections from the amygdala; 4) determine the context of the emotion through the connections from the hippocampus; and 5) measure and compare the neural activity in each hemisphere to determine if a positive or negative emotion is present by comparing the activity of the left and right habenulas aided by the signals from the thalami, the amygdalae and the hippocampi. The overall net result of the actions of the isorropic circuit is to naturally drift, at varying rates, towards a neutral state.*

*When there is relatively more activity in the right cingulate cortex, the emotion is determined to be undesirable (negative, feels unpleasant, and proportionally, everything is done to lessen or rid the organism of it). When the reverse is true, the emotion is determined to be desirable (positive, feels pleasant, and proportionally, everything should be done to increase the outcome).*

*Slowly, depending on the changing external environment and internal conditions, which produce various responses and behaviors, the isorropic circuit will manage to restore calmness. This is one way of saying that positive and negative emotions are a transitory condition.*

*The output of the isorropic circuit depends on a comparison of the entire cortical echoes. The echoes, in turn, depend on the emotional state as well as all the feedback handshakes generated by the emotion and the context of the emotion. These continuous feedback circuits summarize the totality of brain activity in a compact way. They fine-tune the emotional landscape of the brain by regulating the reticular formation activities, including regulation of arousal, motor control and vegetative functions.*

*Thus, the outputs of the isorropic circuit (projections from the habenula, through the habenulointerpeduncular tract, to the interpeduncular nucleus in the reticular formation), affect most all the principal neurotransmitter systems:*

- a) Acetylcholine through the basal nucleus of Meynert (to the cortex) and the septal nuclei (to the hippocampal formation). Acetylcholine augments excitability of cortical neurons, especially in the association areas.*
- b) Dopamine through the substantia nigra pars compacta and ventral tegmental area, prepare the brain for action. This is an activation-excitatory circuit.*
- c) Serotonin through the Raphe nuclei. The actions of this system are diverse because there are many types of serotonin receptors.*

- d) *Noradrenaline through the locus ceruleus with projections to the thalamus, amygdala and hippocampal formations as well as medullary projections. This system plays an important role in reacting to stress, and particularly the activation of fear and anger.*

*Through the various projections mentioned, the isorropic circuit affects and regulates the output of other loops. The amygdala projects to the brain stem areas that are involved in the control of the heart rate and other autonomic nervous systems that will regulate the body's responses as emotions change.*

*The reticular formation is the core of the brain stem. Neurons of this region regulate the neuronal excitability of the entire cortex.*

*The right hemisphere evaluates emotions more than the left hemisphere. The right brain contains circuits involved in regulating intense emotional-homeostatic processes and modulates negative primary emotions such as fear and disgust and negative social emotions such as shame, as well as positive emotions such as excitement and joy.*

*When the brain perceives emotions it creates the illusion of feelings. These feelings serve to guide our responses to the ever-changing environment. The ability to adapt depends on the regulatory process to return smoothly to a neutral state of calmness.*

### *The Self*

*The cholinergic (acetylcholine) projections of the isorropic circuit act through muscarinic receptors. The muscarinic receptors are slow-acting, consequently their effects occur with a time lag. This time lag, in chaos-theory terms, allows the isorropic circuit to wander about a strange attractor, which under normal conditions represents the point of neutral calmness. Mathematically, think of small, variable circular trajectories moving about a point, but never settling on the point.*

*Under most conditions, this strange attractor is the state towards where the isorropic circuit's actions tend to modulate the cortex's activities (mathematically represented by a point). Let's call this attractor the isorropic attractor. The subtle wandering of the isorropic attractor permits the isorropic circuit to generate and regulate a wide spectrum of emotions. Potentially, this wandering permits the generation of myriad slightly differing emotions as a response to a vast array of changing internal and external stimuli.*

*When the isorropic attractor is close to neutral calmness a wider spectrum of potential emotional responses is available, positive and negative, and by activating memories associated with the emotions, allows for activation of a greater pool of memories. The speed at which small emotional changes can be generated also allows the search for the greatest potential number of contexts. Thus the brain achieves a state that can generate the maximum variety of behaviors in the quickest time possible as response to the ever-changing environment. This places the organism in a state of maximum adaptability. When the brain detects this healthy state of maximum adaptability it is felt as a sense of self.*

*Some philosophers have called this state “the center of the self.” Others have called it the “true essence.” Franz Kafka, the Austrian philosopher and poet, recommended, perhaps as a means to reach neutral calmness, “You need not leave your room. Remain sitting at your table and listen. You need not even listen, simply wait. You need not even wait, just learn to become quiet, and still, and solitary. The world will freely offer itself to you to be unmasked. It has no choice; it will roll in ecstasy at your feet.”<sup>55</sup>*

*The wider the spectrum of emotional responses that can be triggered, the more intense the sense of self is felt. Conversely, the narrower the spectrum, the less intense the sense of self is perceived. This translates into a nonverbal knowledge that many memories can be quickly activated because the brain can flutter, ever so slightly from emotion to emotion, changing from moment to moment the chemical milieu of the body and brain. Normally, the brain is changing, second by second, the emotional internal landscape in subtle ways that are almost imperceptible.*

*Again, in chaos theory terms, when the isorropic circuit’s attractor is wandering on the positive emotional side, the brain perceives this as a high degree of self-esteem. If it is wandering on the negative emotional side, the degree of self-esteem is low.*

*When the isorropic circuit is close to neutral calmness, autobiographical memories can be more easily activated because of the continuous wandering of the isorropic attractor; as a result, myriad emotions associated (through handshakes) with all the memories can be quickly triggered.*

*When the isorropic attractor is far from neutral calm, short term, working and explicit memories can be affected, primarily because thalamic control of the attentional systems can be disrupted.*

*In contrast, semantic, source and procedural memory, because of a low or in-existent relation to emotions can still be activated even when the isorropic attractor is far from neutral calmness. The hippocampus can detect a particular context, independent of an emotion, and send the appropriate signals and activate these types of memories because they are independent of the emotional state.*

*If environmental or internal stimuli push the isorropic attractor outside the chemical ranges that permit homeostatic balance, the sense of self becomes distorted; the spectrum of emotions that can be potentially generated, thus the memories that can be activated, are greatly diminished and the behavioral responses limited. The limited choice of behaviors, imposed by stressful conditions, under a wide array of circumstances, can still generate a correct response. But the longer the stressful conditions prevail, the smaller the number of responses that can be activated and the less the probability that the correct response will be generated.*

*In extreme cases, when the isorropic attractor is pushed far enough from the range of homeostatic balance, the brain will no longer be able to perceive a sense of self; the organism can no longer adapt.*

*The sense of self is an indirect measure of the organism’s capacity to adapt.*

*There are other aspects to the sense of self superimposed on the activity of the isorropic circuit. As we saw in detail at the tennis match, there is a constructive process of the present. Even when*

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<sup>55</sup> Deepak Chopra, *The Seven Spiritual Laws of Success*. 1994.

*there is a referral in time of sensory signals and backward masking, and these signals are processed faster than they can reach awareness, this constructive process creates a sense of continuity of our experience with an accompanying feeling of past (using different memory systems to remember events) and present (using attentional systems to create it).*

*When our attentional systems activate biographical memories, in spite of the diversity of sensory signals, memories, beliefs and thoughts, a coherent sense of self emerges. In this way the brain constructs continuity and a unity of the self.*

*But still, there is more to the self; there exists a sense of embodiment, a feeling that we are bonded to our bodies. The somatosensory attentional system, using all pain, pressure, temperature and proprioceptive signals creates this illusion and firmly roots us in our bodies. And beyond this, the self is empowered with a sense of agency or free will, even if it is generated outside awareness, that allows us to feel we can direct our bodies and our actions.*

*These different aspects of the self are embedded in an ever-changing emotional milieu, which as we have seen activates relevant memories. With the use of mirror neurons, through emotional expressions and emotional transfers, the brain perceives feelings and feelings in others. Ultimately, the activity of the attentional systems permits us to reflect, of becoming aware of our self with all its subtleties. The attentional systems, somatosensory, visual and auditory (perhaps olfactory and gustatory as well), along with their memory systems, are the circuits that generate the sense of self and our perception of consciousness.*

*The self has many sides to it and as a result any of these different aspects can be individually disturbed. However, given the predominant emotional nature of the self, which activates memories associated to the emotion according to a context, even in the extreme case of split-brain patients whose two hemispheres have been surgically disconnected, the patients don't exhibit split personalities or a double subjectivity.*

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# My Best Day With Mitch

This day was the best day I ever had with Mitch.

During spring break in 1999, my wife and I went to Acapulco to the Second Sanchez Open. We were staying as guests of my sister Minnie and my brother-in-law Pepe. Mitch's spring break coincided with Easter and he flew down from Santa Barbara to join us for the week.

Four days after Mitch's diagnosis of moderate depression with panic attacks, Pepe's sister and her husband Rafael invited us out to spend the day at their house by the Lagoon of Tres Palos. Rafael is into everything aquatic: motor boat, skis, slalom, wake board, banana. We were a group of six adults, two of my sisters and their husbands, my wife and me, and four of our children—Mitchell, Pepo, Francesca and Rogelio.

That morning, Mitch and I, over breakfast, discussed his relationship with his girl friend, his surfing, school and his future in general. The phantom of his last panic attack floated in the background of my mind. But he was obviously well, in good spirits and enjoying himself.

Rafael had invited other guests for the day, couples slightly younger than we with slightly younger children, probably ranging in ages from ten to seventeen. In all they were another six adults and nine children and teenagers. After introductions and greetings, Rafael asked, "Who wants to ski?"

There were surprisingly few takers. Rafael Jr., seventeen, was one of them. He, like his father, loves all things aquatic, including driving the motorboat. As it turned out, Rogelio, my other brother-in-law, and my wife Pat, the two Rafaels, and Mitch and I got on the boat. First Rafael Jr. skied, and dazzled us with his expert slalom; followed by Pat, who after a couple of falls managed to get up and do her usual ski-a-little-bit-but-good slalom routine.

Mitch turned to Rafael Jr. who was driving the boat and asked, "Do you have a wake board?"

"We sure do. Have you ever done it? It is not too difficult."

"I've done it a couple of times, but I'm a very good skateboarder and snow boarder. I think I'll be fine. It's pretty similar."

"Suit yourself. The wake board is in there," Rafael Jr. said, pointing to a seat in the middle of the boat that lifted up and served as storage space.

I was a little bit worried that Mitch might have some problems with the wake board, as this was something relatively new for him. I had seen him snowboarding, jumping

and turning, and even somersaulting through the air, but I wasn't sure how much this could translate to a wake board being pulled by a motorboat. He, however, confidently jumped into the water and gave us the signal that he was ready to be towed.

"Keep the board between you and the boat. Flex your legs slowly as you start to stand up. Don't let the boat pull you head over," Rafael Sr. yelled out as last minute instructions.

The boat roared to life. The wake board swiveled a little bit from side to side. I held my breath. Mitch stood up on the wake board, and proceeded to move up and down it, as if testing the stability of the board. I watched amused. He smiled. Then he turned the wake board, jumped the wake of the boat and made a complete 360-degree turn in mid air, landed fine, turned and jumped again. He was seven or eight feet up in the air. It was like watching a magician perform trick after trick: high jumps, 180 degree turns with backwards landings, backward jumps with forward landings, another 360.

Rogelio jokingly told me to close my mouth. I was speechless. Time seemed suspended. Then, Mitch attempted a somersault, and even though he landed standing on the wake board, he was unable to stay on it and fell with a big splash into the water.

We turned the boat around to go pick him up. He had made it all look so simple. I asked if I could try the wake board. At least, hopefully, I would be able to stand up, turn and make an ass of myself in my first jump. As it turned out, I couldn't even make a turn or get enough speed to jump the wake.

Later we decided to go in the boat to a restaurant at the end of the lagoon. There the lagoon normally breaches a sand bar and flows into the Pacific Ocean. Lunch at this place meant fresh fish and shrimp and occasionally baby shark.

The problem was that we were 17 grownups, if we considered our older children, and eight kids. Rafael determined that we would need at least three people to ride in a rubber raft pulled by the motorboat so we could all go. I thought that many of the kids would volunteer to ride in the raft, but none seemed willing. So Pepe, Mitch and I volunteered. Pepe filled two Tequila shot glasses for our boat ride. He packed his cigarettes and matches in his breast pocket, and motioned to Mitch and me to follow. We boarded the rubber dinghy and sat down with our feet hanging over the edge. Pepe passed me my tequila shot. Everyone else boarded the boat. As soon as the boat began to move, the dinghy started skipping and jumping over the water. My tequila glass filled with water before I could take my first sip, Mitch was sopping wet, and Pepe grinned madly as we bounced on the wake of the boat.

I can clearly remember my sisters Pelusa and Minnie waving at us and with Rafael, Rogelio and Cecilia, Pepe's sister, laughing at our antics. We laughed with each unexpected lurch. Over the noise of the engine, Mitch yelled at me, "How do you always manage to have such a good time?"

"It is just a question of having good friends," I replied at the top of my lungs.

"I want you to know that this day has been perfect. Thank you," he yelled back.

“Wait till you see the waves where we are going, there is still more to come.”

As we approached the sand bar, the boat slowed down, then stopped. “Just look at the beauty of this place,” Mitch said, “the vegetation, the ducks, and here I am with you and Uncle Pepe, your sisters and Uncle Rogelio. I can’t believe it. The three of us acting like little kids.”

As it was the end of the dry season, the lagoon was not emptying out into the Pacific. We jumped out of the boat and waded up the steep sand dune. We could hear the deafening roar of the waves pounding on the other side. When we reached the top of the dune, we could see the Pacific Ocean. The beach was steep and, in typical fashion for beaches just north of Acapulco, the waves were big, almost fifteen footers, and breaking thunderously very close to the shore.

As one wave broke and the white foam came pounding towards the beach, I timed my move, ran down the beach and dove into the oncoming surf. The surf was so powerful that, as I had planned, it easily stopped my forward dive and drove me backwards toward the beach. As the surf lost its power, I simply stood up. As I walked back up the beach, Mitch came running, and dove into the surf imitating my move perfectly. Then he walked up to me and gave me a high five. Together we both raced in and repeated our move.

Watching us, Pepe couldn’t resist running down the beach and diving into the surf. The only problem was his timing; he dove into the retreating surf, which sucked him in. The next wave broke on his back. I told Mitch to get ready; we might need to go in and get his uncle out.

We waited for Pepe to wave for assistance. I yelled at him to ride the next wave out. It pounded him into the sand. Mitch ran in to grab him; I followed close behind. Mitch managed to get a hold of Pepe’s hand, and helped him regain his footing as the water rushed back into the ocean. Mitch extended his hand and I grabbed it, and between the two of us we managed to pull Pepe out.

After lunch and a swim, Mitch sat with his two uncles, Pepe and Rogelio, and me in a shallow place in the lagoon. We drank tequila and talked through the afternoon. Eventually, it was time to head home. Fortunately, for the ride back we convinced a group of the teenagers to ride in the rubber dinghy. Mitch and I sat at the back with Rafael our host. Rafael Jr. piloted the boat.

At the dock. Mitch jumped out and yelled, “It’s zero hour. Run,” leading the way quickly up the hill, as swarms of mosquitoes came alive as the sun was setting. At Rafael’s house, attracted by the light inside, mosquitoes matted against the window screens. We sat inside looking out, as every window screen was carpeted with a thick, fluid, black layer of crawling mosquitoes, giving us a feeling of unreality.

# Delirium, Dementia, Amnesia and Other Cognitive Disorders

**A** Brief Explanation of Delirium, Dementia and Amnesic and other Cognitive Disorders. Knowledge of these Disorders serves as a building block to understand Depression, Manic Depression and Schizophrenia and suicide.

*Following the definitions in the Manual, the DSM-IV, the predominant disturbance with Delirium, Dementia and Amnesic and Other Cognitive Disorders, is a deficit in cognition.*

*The essential feature of Delirium is a reduced clarity of the awareness of the environment. The ability to focus, shift and sustain attentions is impaired.<sup>56</sup> This suggests problems in the thalamus's ability to engage, sustain or shift one or all attentional subsystems (the visual, hearing and somatosensory). The thalamus's shifting rhythms become too fast or too slow and uncoordinated. As a result the attentional systems become grossly unsynchronized. The thalamus's ability to tag sequentially the order of stimuli is also impaired. This is manifested in changes in cognition (that might include memory impairment, disorientation, or language disturbance) or development of a perceptual disturbance.*

*Memory impairment is noticeable mostly in recent memory. The ability to form new memories is greatly diminished when the hearing and visual attentional subsystems are not functioning properly. The person is easily distracted (attention shifting at wrong time) by any irrelevant stimulus. Disorientation is generally manifested in time or place (not knowing whether it is day or night or where one is), which is indicative of a loss of the sequential tagging quality (in time) of attention. In mild delirium, disorientation to time might be the first symptom to appear.*

*Different manifestations will be present, depending on which attentional system is disrupted. When the hearing attentional subsystem is affected, speech or language disturbances may be evident as dysarthria (impairment to articulate), dysnomia (inability to name objects), dysgraphia (impairment to write), or even aphasia. As the hearing attentional system is shifted improperly, speech can be rambling and irrelevant, or pressured and incoherent, with unpredictable switching from subject to subject. Perceptual impairment might be present as misinterpretations as when a knock on the door is confused with a gunshot. Misperceptions range from simple and uniform to highly complex, and can include other sensory modalities such as gustatory, olfactory, visual*

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<sup>56</sup> DSM-IV-TR

and tactile. When attention shifts incorrectly, it tends to confuse the handshakes to the relevant memories and activates the wrong memories.

When improper shifting impairs the visual attentional subsystem, perceptual disturbances may include illusions (confusing the folds in the bedclothes as animate objects) and hallucinations (seeing something that isn't there).<sup>57</sup> Illusions arise as a result of the visual attention shifting rapidly in an improper sequence and confusing some shapes or borders with wrong categories of memories. Hallucinations are produced when the visual attention cannot differentiate between reality and imagination.

The handshakes and tags that are normally used by attention to jump start relative memories quickly are disrupted and incorrect groups are activated in turn. As a result, the individual might have delusional convictions of the reality of his hallucinations, but exhibits emotional and behavioral responses consistent with their content.

The shifting of the attentional subsystems tends to fluctuate during the course of the day and the level of disturbance varies accordingly. The person can seem normal in the morning and change later in the day or night.<sup>58</sup>

When the sensorimotor attentional system is disrupted, disturbed psychomotor behavior ensues; these might include groping or picking at bedclothes, attempting to get out of bed when it is unsafe, and sudden movements. On the other hand, the person might have decreased psychomotor activity manifested as sluggishness and lethargy and even stupor. Psychomotor activity often shifts from one extreme to the other. In general, when one attentional system is perturbed by quicker or slower shifting, all attentional systems are perturbed in the same way. While hyperactive, the individual is more likely to have hallucinations, delusions, and agitation. Whereas the individual in the hypoactive state is less likely to show these symptoms.

All of these disturbances can bring on emotional disturbances also. Some are natural, like anxiety, fear, anger and depression. Other emotions are just the result of the caudate nucleus matching thoughts to feelings: apathy, irritability and euphoria, and rapid shifting of moods.

If fear is marked, the person might attack those that are perceived to be threatening, or sustain heavy injuries trying to escape from a falsely perceived threat. These emotions might bring on accompanying physical responses like calling out, screaming, muttering or moaning.

The essential feature of dementia is multiple cognitive deficits (including memory impairment), and at least one of the following: aphasia (deterioration of language function), apraxia (impairment of motor activities), agnosia (failure to recognize objects), or a diminution of executive functions. In dementia one or several of the attentional subsystems is impaired. When this happens there is a diminution in the storage and retrieval of certain types of memories.

If the hearing attentional system is affected, difficulty in accessing certain language related memories will be manifested as difficulty in producing the names of individuals or objects. The speech might become vague with long circumlocutory phrases. Comprehension of spoken or written language might be compromised. In extreme cases the individual might be mute or have a speech

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<sup>57</sup> Ibid.

<sup>58</sup> Ibid.

*pattern characterized by echolalia (echoing what is heard) or palilalia (repeating sounds or words over and over).<sup>59</sup>*

*If the somatosensory attentional system is affected, this will be manifested as reduced ability to execute motor activities despite intact motor abilities, sensory function and comprehension of the task required. The affected individuals might be impaired in their ability to pantomime the use of objects (like combing hair) or to execute a known motor act (like waving good-by). The deficit can be expressed in specific motor actions like cooking, dressing or drawing. Also, even though they might exhibit normal tactile sensations, they are unable to identify objects placed in their hands by touch alone.*

*In turn if the visual attentional system is impaired, individuals will exhibit agnosia; in spite of having normal vision they lose the ability to recognize categories of objects like chairs or pencils. In extreme cases they can't recognize members of their families or even their own reflection in the mirror. They might also be spatially disoriented and have difficulty with spatial tasks.<sup>60</sup>*

*Executive functions can also be impaired as one or more of the attentional subsystems can't be focused. Since the attentional systems are required to access various kinds of information, many planning functions are disrupted. Executive functions include the ability to think abstractly and to plan, initiate, sequence, monitor, and stop complex behavior. The individual having difficulty with novel tasks may manifest impairment of abstract thinking. Poor judgment and poor insight are also common. The affected individuals may make unrealistic assessments of their abilities; they may underestimate the risks involved in their activities; occasionally they may become violent; suicidal behavior may occur, particularly in the early stages as a result of distortion or loss of sense of self.<sup>61</sup>*

*To complicate things more, Delirium might be superimposed on Dementia: because the thalamus is unable to synchronize the attentional systems and simultaneously the attentional subsystems are impaired.*

*The main feature of Amnesic Disorders is the inability to learn new things, or make new memories, or recall previous events. The Amnesic Disorders are characterized by multiple cognitive deficits (primarily memory impairment). The ability to learn and recall new information is always affected, whereas remembering previously learned information occurs more variably. When the amnesic disorder is severe, the patient might lack insight into his or her memory deficits. Most cognitive functions remain unimpaired. With profound amnesia, occasionally there is disorientation to time and space, but rarely to self.<sup>62</sup>*

*In manifestations of memory loss, exactly what kind of past events or types of information can't be remembered? What kind of new information can't be encoded or learned? As we have seen, there are many different memory subsystems; when one or several of these are affected, different kinds or types of memory are inaccessible even if the relevant attentional subsystem is functioning*

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<sup>59</sup> Ibid

<sup>60</sup> Ibid.

<sup>61</sup> Ibid.

<sup>62</sup> Ibid.

*properly. Depending on where the cortex has been damaged or where the flow of the loop has been interrupted, the specific deficit or deficits will be manifested. Essentially the correct handshakes that are associated with other memories are disrupted, and this causes the memory to be inaccessible. Sometimes, accidentally, a different association handshake might be triggered and the memory will suddenly be available for recall.*

*To give an idea of the wide range of problems that have been observed through studying different kinds of lesions, here is some of the different types of memory proposed by some researchers:<sup>63</sup> short-term memory, working memory, intermediate and a long-term memory, explicit and implicit memory, flashbulb memory, source memory, episodic memory, semantic and procedural memory, and autobiographical memory, subdivided into three categories: a lifetime memory (e.g., I lived in Arizona), a general event memory (I vacationed in Arizona), and event specific memory (I visited the Grand Canyon).*

*The brain uses different strategies to encode and retrieve memories. Each memory category might use some or all of these strategies. To encode, we have deep, shallow and associative strategies. Perhaps there are more. By a repeat/rehearse mechanism we can strengthen these memories. By a leading/distortion mechanism we can change these memories. Retrieval uses various mechanisms: associative, strategic, implicit and explicit, priming, and cues. Some retrieval strategies can even be state dependent, that is one can access a memory when one is in the same state as when the event happened, i.e., under the influence of a drug or alcohol. And again, perhaps there are more.<sup>64</sup>*

*Studies of damage to certain regions of the brain, lead us to suspect that the hippocampus is involved in explicit memories. The frontal lobes have been identified with activity in strategic retrieval, the purposeful search for memories. The temporal lobes have to do with memories for specific skills, like speaking, reading and writing, recognizing faces and remembering names. Also certain regions of the temporal lobes have to do with memories of categories of objects, like furniture, living or inanimate, tools (which in turn seems to be connected to the motor cortex, which is used to manipulate the tools.), etc.*

*Impairment of any one or several of these memory systems can produce a wide range of conditions ranging from hardly noticeable to completely incapacitating behavior. Worse, inability to remember certain things or events might bring on, over time, a different psychiatric disorder.*

*Amnesic Disorders can be Transient (hours or days, up to a month) or Chronic (more than a month).<sup>65</sup>*

*There are many documented cases where one day, all of a sudden, for unknown reasons, a patient recovers much if not all of his or her lost memories.<sup>66</sup>*

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<sup>63</sup> Daniel L. Schacter, *Searching for Memory*.

<sup>64</sup> Ibid.

<sup>65</sup> *DSM-IV-TR*

<sup>66</sup> Daniel L. Schacter, *Searching For Memory*.

## Mitch's Sophomore & Junior Years

**K**atie, Mitch's girl friend moved to Santa Barbara in their sophomore year. Mitch was excited about school and having Katie near him. His sophomore year started uneventfully as far as his "episodes" were concerned, or at least, as far as we knew. He did suffer a panic attack in February and another in April. Later, after his death, when we talked with Katie, she confirmed that these panic attacks were the only ones she knew of; she would see him almost every single day, and she emphatically related to us that Mitch was not a depressed person. She could only remember one or two times when he was bummed out. To most people, being bummed out is an everyday part of life. At least for most of us, life presents a few obstacles that make it seem that life is a bummer. We get down and out on ourselves occasionally; this is not a big deal, it is normal.

When Mitch finished his sophomore year he worked in Santa Barbara part of the summer, then came home. Because he had taken so much math, he announced the easiest thing to do was to graduate as a math major. He acknowledged that English was getting pretty boring; all those literature courses, reading all those boring books, were simply not for him. I suggested that if he was really interested in writing perhaps he study journalism. There his studies would be more focused on how to write a story. He insisted that it should be math, so math it was. This was supposed to be the easiest route to graduation and a degree.

In the beginning of his junior year, for no reason that I can discern, Mitch sent me a big post card, letter size, and was found among his belongings in New York when he died:

*Dad: Alone, I spent three hours surfing in the cold gray ocean while it rained and the white washed sky radiated a faint stale light. I faced each wave with all of my will, letting the powerful white water pound my body and cheer my soul. I stopped and looked around and for a moment I saw the world through your eyes. Sometimes when I run through the campus late at night, I pass under the orange courtyards and imagine that I am a professional soccer player about to score a goal. Time escapes my presence and your soul is there with me. We shoot the ball together and win the game—I now understand and admire the complexities of your life and accomplishments. I owe everything to you. You taught me how to be a man, how to love one woman, how to have respect and prestige and elegance. You showed me how to see through super difficulties and discover truth, love, knowledge, life and happiness. You did everything right. You gave me so much space and liberty as a child and allowed me to have a perfect childhood, sheltered from the evils of the world. You gave me the direction and passion to fulfill my dreams. But most important*

*of all, you followed your heart and believed that it was all worth it: the hard work, dedication, self-sacrifice, giving up the good life in Mexico, everything. You are the smartest man I know. Anyone can learn facts and spit them out, but you have always had a genuine intuition about life; you're a goddamned comedian one second and an intense philosopher/engineer the next. Every day I strive to achieve something similar to you and I must admit that you weave a hard path to follow. I love you for passing cars on the freeway going to and from Acapulco, for telling me stories about the Aztecs, for keeping it real, for putting the world inside me, for losing your sense of self satisfaction and for wanting nothing but the best for me. You saved me, gave me life, told me truth. There are so many words, so many variations of time and colors, my love for you goes beyond the material world,*

*Mitchell*

It isn't until February of his junior year (2001) that Katie called telling us that Mitch was feeling pretty bad. She had made him visit the University's psychiatrist. Katie was so concerned she sent him home. When he arrived, he looked a little haggard from lack of sleep. I noticed that he started to get agitated as he got out of the car, but quickly got a grip on himself. I wondered if it was possible that the house, or a smell, or a plant, or something here, in his home environment, could be a trigger, a reminder of when he first suffered a panic attack a little over three years before. Could there be some connection to a partial memory or experience that even in a wrong context could start a panic attack?

Today I know that all the stimuli present at the time when any strong emotion is felt will be related. It's like the rabbit that went to get a drink and was ambushed by the bobcat. Not only does he remember the bobcat, but all the sounds, sights and smells associated with the event. The price of admission into the I-survived-the-bobcat club, includes everything that happened during that instant, the location of the ambush, the time of day, the plants that were growing next to the stream, even the colors of the flowers. All associated stimuli, now become associated to the real danger. In the future, any one of those stimuli, the time of day, the plants, or even the colors, can elicit the natural fear response of the bobcat.

Mitch relayed to us that indeed he had had another panic attack, a pretty bad one. He had talked to the doctor at UCSB who had prescribed Paxil and a sleeping pill to be taken as needed to help him sleep. He was a little on edge, slightly agitated, but a couple of days later he announced, "I have to get back to school." And he left, assuring us that with the new pills and the doctor's supervision he was fine. We believed him.

In retrospect, as we found out the truth, this was a terrible mistake. It is common that people suffering from mood disorders come to believe sincerely that there is nothing wrong with them. At times, they incorporate their mood disorder into the natural weave of their life and sense of self, an "I've always been like this" kind of attitude.

I now wonder if some things in the home environment, the place where Mitch suffered his first panic attack, were serving as continuous triggers to his fears and

anxieties, which he was able to suppress, perhaps at great effort, under the illusion that home is supposed to be a safe place. Could it be that being home the last few months of his life was only aggravating his condition? Or could it be that things slowly, unrelentingly spiraled out of control? Could a mad clock have taken over?

In the words of Dr. Robert Zupolsky, in his book *Why Zebras Don't Get Ulcers*, "In many cases stress and the onset of depression tend to go together. People that are undergoing a lot of significant life stressors are more likely to succumb to a major depression, and people sunk in their first major depression are more likely than average to have undergone a recent significant stressor. However, some people tend to have the great misfortune of suffering from repeated depressive episodes, ones that can take a rhythmic pattern stretching over years. When considering the case histories of those people, stressors emerge as triggers for only the first few depressions. Somewhere around the fourth depression or so, a mad clockwork takes over, and the depressive waves crash, regardless of what is going on in the outside world."

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The best neurochemical evidence suggests that depression involves abnormal levels of several neurotransmitters: norepinephrine, serotonin and dopamine. One class of antidepressants, called tricyclics (a reference to their biochemical structure), stops the recycling, or reuptake, of norepinephrine and serotonin into the axon terminals. The result is that the neurotransmitter remains in the synapse longer and mimics an increase of neurotransmitter.

Another class of drugs, called MAO inhibitors, blocks the degradation of norepinephrine and serotonin in the synapse by inhibiting the action of a crucial enzyme in that degradation called monoamine oxidase (MAO). The result is similar, in that the neurotransmitter remains longer in the synapse and increases the chances of stimulating the dendrite of the receiving neuron. However, the newer drugs that have been developed work only on the serotonin synapses. These are called selective serotonin reuptake inhibitors, or SSRIs, of which Prozac is the most famous. Some newer antidepressants seem to work only on norepinephrine synapses.

Serotonin is widespread throughout the brain and body. It acts in various ways: e.g., controls diameter of blood vessels, affects pain perception, influences the gut, has a role in the inflammatory responses, causes platelets to clump, and is also deeply implicated in depression, sleep regulation, aggression and suicide. It is well known that serotonin, dopamine and norepinephrine are intricately involved in mood disorders. The different antidepressants have a great range of failures; these medications, I believe, only occasionally affect neurotransmitters and accidentally help restore a proper balance in the brain chemistry.

To give you pause: consider that there are currently recognized fifteen different types of serotonin receptors, with differing functions, efficacies, and distributions

in the brain. Maybe there are a variety of different neurochemical roads to a depression, and different pathways are associated with different subtypes of depression (unipolar versus manic depressive, or triggered by outside events versus a depression running on a cyclical clock, or one dominated by psychomotor retardation versus one dominated by suicidalism . . .). Antidepressants act tangentially and do not address the root of the problem, which is the simple explanation of why sometimes they work, sometimes they don't.

The evidence is scant. Doctors simply don't know it all. The important thing is that the doctor must monitor closely what the medication is doing, so that he or she can increase or decrease the dosage or the type of medicine, or combine several of them. An improvement should be noticeable in a couple of weeks. As soon as practical (sometimes a person is so depressed that psychotherapy isn't possible), therapy should be brought to bear to assist the medication. Some people react to therapy better than to medication. The goal is to reestablish health without the use of medications.

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Shortly after Mitchell returned to UCSB that February, he announced that he was changing his major again. His explanation to me was that math, especially the upper division courses, were too boring. As an engineer, with a good knowledge of math, I agreed with him. For me, mathematics is a tool to solve problems; to study mathematics for mathematics sake is too abstract. As I belatedly realized, Mitch hadn't mentioned that he felt the cause of his recent panic attack had been the degree of difficulty with his math courses. Mitch now would be striving to graduate with a degree in International Studies.

In the normal course of life, emotional exchanges through facial expressions, body posture, tones of voice, serve to communicate to others our internal emotional state. We "understand" other's emotional states by re-creating in us the same emotion that their facial expression or tone of voice conveyed. Unfortunately, when our loved ones are feeling bad, are depressed, they strive to limit their emotional exchanges to spare us from generating internally the bad feelings they are experiencing. This limits our ability to empathize with them, or conversely, when we do "see" their bad feelings, occasionally we avoid re-generating their bad feelings, conveying the false idea that we don't want to be bothered with their problems. Mitch's limited emotional displays at this time, added to the physical separation because he was away in college, resulted in us being much less aware of the his real emotional make-up.

In an e-mail to R.B. (friend of my sons and fellow skateboarder) dated March 8, 2001, he barely makes a slanted reference to his state of mind. After he discusses a very rigorous, skateboarding practice routine, he goes on:

*I was just feeling it in this morbid fog I guess. I don't know . . . I still go to the underground parking lots by myself on a rainy day and skate it up. Anyway, you got to see the car we're building. It's almost done. I'm building the whole suspension system and the driver train. It's so*

*crazy to think of our boxcars compared to this thing. It's weird though; a lot of the mentality is the same. I got a job in a machine shop making medical parts and racecar components. Everything is computer controlled. All I do is push the start button and clean the parts when they come out of the machine. We could put my chopper together in that shop in about an hour if we wanted to. You'd like the suspension I built. It's got four arms on each side of the car that go to the bearing assembly, which connect to the shocks. The drive train has four universal joints and two splines, which allow the shaft to extend and contract . . .*

*Anyway it's been a dark old week, with all these kids snapping and killing people. I don't know if you heard of the kids that were killed at our school. It's out of control . . .*

*Then doing big old kick flips, or nollie flips or whatever off the stair or the ramp. I could put it at my parents' house in the back. I don't know. I get these fleeting visions and then they're gone.*

*Hope you're doing well, and hope to see you soon.*

*Mitchell.*

I checked with Mitch about his medication (Paxil), he responded, "It numbs me a little, I feel like I think slower, but I can feel its effects and it keeps the antsiness at bay. It allows me to do more analytical work without the feelings coming up and getting worse." When I pressed him about sleeping, he answered, "Generally I don't need to take the sleeping pill, but if for some reason I can't sleep, then it helps me relax and fall asleep." Essentially, Mitch said, "I need to take the Paxil, but slowly the dosage will be reduced and I should go off it. Not to worry; my doctor at school is supervising closely."

Here, in another E-mail, is the smallest indication that mathematics, or abstract thought in some way triggered his panic attacks. This one dated April 1, 2001:

*. . . what I mean is that some things are just bad and that's all there is to it. Luke is stuck in Carmel; he's given up on himself and is praying for cancer. He believes that trying to build something in life only leads to greed and that he never wants kids or a better job. I nearly tore him a new asshole last time I was in Carmel. I told him to get his act together . . . what I mean is that we have a foundation to build on. Things might get rough but we're not praying for cancer . . . it makes me sad. I mean, imagine if you were stuck in that quiet afternoon sky of Carmel for the rest of your life, no education—the whole nine yards. But then I think of my friend Aaron who broke his neck riding motorcycles and he's more positive about everything than just about anyone I know. And he can't even move his left arm.*

*This last quarter broke me. I thought that I could pull out the math degree but it shattered my mind in about a thousand pieces. For about two weeks I had trouble sleeping and was so mentally exhausted that it hurt. I changed my major to Global Studies with emphasis on socioeconomic politics. Hopefully I will manage that. I try to believe that it was all for a reason, me crumbling under the density of sixteen units of Euclidian Geometry . . . Anyway, one theory that I had been brewing in my mind is that we can only experience as much happiness as we can pain. That for every moment spent suffering—a cold shower, long day in the machine shop, stepping up to a pretty girl for the first time—only after those experiences can there be moments of rest and enjoyment . . .*

A few e-mails Mitch wrote just a few weeks later in April give us a glimpse that he is back to his usual self and show no trace of any mood disorders or panic attacks:

*That poem was fierce. You have to read Nabokov to get the sick words and phrases, like “like the wail of a crippled violin, avalanche of dull sound, a wild pale glitter was flying across the sky like a rapid reflection of colossal spoke” . . . Anyway, the car is in its final stages. We are welding the shit out of it right now. I keep getting in squabbles with this faggot engineer who thinks he knows it all . . . I wish it was us, you, Shariff and Freddy . . . drinking beers . . . No calculations, no “are you really an M.E. major” bullshit. Just riding it until it snapped and then making modifications . . .*

*. . . Sometimes I feel uncertain about having grease and dirt under my fingernails from the machine shop, but that’s the life style that I know I’ll excel at. I sometimes wish I could have a B.S. in Mechanical Engineering like Fred and my Dad and most of my friends. But I wouldn’t be happy . . . I sometimes feel I had to dig holes while those chumps sat at their desk doing calculus and thermodynamics and they’re the ones that are going to get all the gold. I try to remind myself that my experiences are much richer and humane and that the pay cut will be nothing compared to the richness in my life . . .*

*. . . there is the peaceful quiet Mexican that I work with . . . he told me he was into music and singing but he could not play any instruments. He began singing the most beautiful songs and poems about his time in Illinois away from his family, about regrets he had with his mother, deep insights into love and happiness . . .*

*. . . Like this computer programming shit I did for the helicopter. I was so into it, just for the helicopter and all. And now I found a job that pays 25/hr to do nothing but that program . . . It’s a fine line my friend, and I’m willing to live in a shack with my girl and a dog and have truth than to be bitter, ’cause nothing is worth that feeling (unless you got little ones running around and then anything is worth it . . .*

After his death we talked to his doctors at UCSB. His records indicated that Mitch had been in to see them three times in February 2001. He had been diagnosed with Moderate Depression with Panic Attacks; he was not considered suicidal. He was sent several written notices to report back to the doctors for his continued treatment as late as May. Mitchell never returned to see his doctors until over a year later in May 2002, when he needed to clarify his medical records as a requirement for his plans to go to Spain to start work in a master’s degree. His medical record shows that he convinced his doctors that he was fine; he was doing all right at the time and had no problems of any sort.

The last quarter (spring of 2001) of his junior year Mitchell was working on an off-road vehicle with a team of engineers at UCSB. This vehicle had to perform all kinds of different feats like going up a slope at a certain angle and going over a log or a rock of a certain diameter. The vehicle then would enter a competition against other entries from other Universities.

That summer he came home and he wanted to start a factory for off-road vehicles. He was an expert, Mitch informed me, the brightest guy on the UCSB team. He

presented a business plan to build several a week. He could, he felt, net half a million dollars a year.

I agreed to be his financial partner if he listened to me. I advised, "Build one and sell one. Then build two and sell two, and so on." He reluctantly agreed. We would start by building one, and then take it from there. Once we bought the equipment and tools and began work on the car, I realized he didn't know that much, but with my experience in designing and building machinery, this would be a "piece of cake."

I started by teaching him how to weld. As he asked all kinds of questions, he marveled that I could not only answer them but also open a book to where it was all explained in more detail and pass it his way. He asked such things as, "How can you determine the strength of the chassis? How can you determine the top speed of a car?" I suspected there was a little bit of regret that he hadn't pursued his engineering. When he didn't believe I could remember the answers, he would call his brother Freddy, also a mechanical engineer, and he would get pretty much the same reply.

Katie, his girl friend was also at home for the summer, a few miles away. The only thing I thought strange about Mitch that summer was his aloofness with Katie. She would call, and more often than not, he would not even return her calls. I told Mitch, "If you don't want to see her fine, but tell her so. You shouldn't keep people hanging around unnecessarily." I wondered to myself if he was just a normal twenty-one-year-old, being a little inexperienced and careless, or if it could be a shadow of his former behavior when he broke up with Meredith in his senior year in high school, because Meredith was "making him stress out". Could there be a mental explanation for his recurring depression that he had learned not to externalize? I watched him closely, but became convinced he was just simply being an inexperienced twenty-one-year-old. He insisted that he was too busy building this car to see Katie, and I could see that he was. However, if he loved her, I couldn't understand why he wouldn't make time for her, but Mitch just threw himself completely into this project. One thing I noticed was a little unnerving: he didn't pay attention to some small instructions I gave him, like always tighten all your bolts and nuts as much as you can, but if you knew his mother, this was a minor transgression.

One afternoon Mitch took the off-road vehicle for a test drive down our drive, a privately owned road that goes straight and flat for about 600 yards, then turns right. After the right turn, the road becomes very steep and ends at the top of a hill. There he could turn around in a cul-de-sac and come back down. A few minutes went by after Mitch made the turn, and I couldn't hear the sound of the engine. I thought probably the engine had stalled and Mitch was having a problem restarting it. Then, I saw him walking down the road towards the house. He was visibly shaken.

"I almost got killed, dude," he said. "I lost my brakes. They fell off and you don't need to rub it in. I know. I won't forget to tighten the screws from now on, so don't say anything. Just be quiet. I could've gotten killed I was coming down so fast . . ."

I chuckled.

“It isn’t funny, don’t laugh! I almost got killed; and don’t tell Freddy.”

We finished the off-road vehicle, thoroughly tested it on a track we traced out on our property, made some notes on improvements we would want for our next generation of off-road vehicles, and tried to sell it. A few people showed some interest, but no real buyers.

Eventually Mitch sold the off-road vehicle. He pocketed the money explaining, “If you take into account the number of hours I worked, it comes to about \$3.50 per hour. I hardly made any money!”

“What about all the hours that I worked, what about my investment?” I retorted.

“You worked for fun, and you can afford this loss,” he tried to convince me philosophically.

I was \$1,500 poorer. He had made \$1,300 for the summer.

Later, Freddy and I had a good laugh with Mitch about the brakes.

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## Sacagawea speaks:

My husband told me that Captain Meriwether Lewis was a dear friend of Jefferson, the white man's Great Chief; that he was a young man of thirty, but to me he seemed old. I was only seventeen. My husband, Toussaint Charbonneau, a French Canadian, also told me that this was the only chance I would have to travel back to the lands where I had come from. He acted as if he didn't really believe I came from lands to the west. I later found out, and this he didn't tell me, that he had been hired because he spoke many Indian languages. He spoke one, Hidatsa. I spoke two, Hidatsa and Shoshone.

The first time I saw Captain Clark, he had the gait of a man that knows he is at the top, a man with no natural enemies. He can see from the high perch that he stands on, and he knows that his strength comes from within; and that this strength allows challengers, but that they will submit easily once they test his will.

We had already been on the journey for a few days, but I knew. Captain Clark looked at me as I was carrying my recently born son. As was expected I walked behind my husband on his horse. I think I saw a glimpse of surprise in Captain Clark's eyes. I do know that he saw me the same way that I saw him. I wanted so badly to be with him, to help him, to support him, to be an ever-presence in his life. I was carrying my son and I could tell that he paid close attention to this fact. He then looked into my husband's eyes, scrutinizing, and I knew that he and I were one.

My husband spoke French and Captain Clark needed the services of Francois Labiche to communicate with my husband. I, in turn, needed the services of my husband to communicate with Labiche. This made it impossible, at first, to communicate with Captain Clark. I determined to learn English. He always looked and inquired as to my well being. He had numerous chores as the leader of this Great Exploration, as they called it. He had to make maps, resolve problems between the members of the expedition, decide about camping sites, and even about the menu that was to be served during the meals. He would come over and with sign language instruct the cooks to cook whatever I decided. Sometimes he went out of his way to ask me what kind of meat or berries we should prepare for the day's meal.

As much as I loved him, he always maintained a demeanor that allowed him to be the leader. He never invited me to be more than a friend. But he did make me feel that I was one of the most important people in the expedition at all times. He made all feel like that; I could see it in their eyes. Whatever he said was seen and interpreted by all as the sayings of Great Chiefs. Still, there was something in the way he looked

at me that made me feel special. I know he loved me. His eyes shone when he gazed at me. His smile warmed more than the sun.

When he walked, his simple walking mannerisms seemed those of a nervous colt. He would constantly turn to look my way. As soon as our eyes made contact, I would look into the ground as I had been taught to do as a sign of clear interest. However, when I looked up to meet his gaze, when he was supposed to be looking at me if he was interested, he would always be looking into the ground as if he was a woman. I felt such rejection on the one hand; on the other hand, I was a married woman with a son and a married woman's obligations. He always made a special point of checking into my son's health. He seemed to be proud of the fact that there was one woman and one child traveling with the expedition.

As far as I could tell, Captain Clark insisted that a woman and a child were signs of good luck and good will for a traveling group. Anybody who wanted to create problems for my baby and me had to contend with him, especially my husband. You must understand that I was only a seventeen-year-old girl, caught up in the whirlwind of the clash between the great white men and my people as well as the other lesser people that stole me from my rightful place as a very young girl. I was so excited to be there because I spoke two languages. But I had to help my husband keep appearances. I traveled behind him on his horse, helped him with the pretense that he spoke many languages, and he needed me to cook and take care of him in that perilous journey. I carried my baby and dreamt as I walked for miles.

But at the end of every day, Captain Lewis rode by, near me, he looked at me, into my eyes, and I knew that I was under his protection, and the day was good. I never knew what my connection to Captain Lewis was, but it was there. In his eyes I could see an awareness of everyone around him, but especially me. My son was doing well because of him. I wanted to help them succeed in all their endeavors; their endeavors were mine. We were like soul mates; we understood nature and the stars.

I quickly learned English. However, I kept this secret from my husband. I was hoping that this would allow me some communication with Captain Clark and even with Captain Lewis.

I clearly remember when Captain Clark shyly said in English, as he pointed with his thumb at his chest, "My name is William Clark," as if I didn't understand any English. And then, pointing with his index finger at me he asked, "What is your name?"

"My name is Sacagawea," I answered in Hidatsa. I pointed to a bird and added, "Sacaga." And then to myself and added proudly, "wea."

His eyes lit up. I could see his understanding. "You are the Bird Woman! I like that," he laughed as he repeated, "Sacagawea, Sacagawea."

Captain Clark would find excuses almost every day to play with my baby, Jean Babbiste, only a few months old. He affectionately called him "Pompy."

When I got sick, it was Captain Lewis who told my husband in no uncertain terms that he had to walk behind me, that it was I who would ride. I could tell by the tone

of voice and Captain Lewis' gestures that these were no idle threats if Toussant didn't follow his instructions. It was Captain Lewis who also made sure that I was eating properly and was given ample time to stop and rest so I could breast-feed Jean Babtiste. Of course there were many times when we were not constantly traveling, times when they gathered specimens, made maps, corroborated their position with the stars and made many writings that I could only wonder in amazement at. I felt I had a role to perform, but I never quite knew what it should be.

It was in the fall, around this time, that Captain Lewis shared with me an entry he had written in his journal at the beginning of this trip:

*We were now about to penetrate a country at least two thousand miles in width, on which the foot of civilized man had never trodden; the good or evil it had in store for us was for experiment yet to determine . . . However, as the state of mind in which we are, generally gives the colouring to events . . . I could but esteem this moment of my departure as among the most happy of my life.*<sup>67</sup>

I had gone scouting with them a few times, as I had recognized some of the landscape as part of where I had traveled with the Hidatsa Indians that had captured me, and later sold me to my husband. I was supposed to help them decide which way to go to advance towards the Great Ocean. I hadn't even heard of this Great Ocean, much less could I be of any help to find such a thing. I had heard repeatedly of huge Oceans or Great Lakes to the East of us. I told them, as best I could, but they didn't seem to believe me. They were endowed with a knowledge that was superior: the knowledge of Great Chiefs. They were looking for the Ocean to the west.

I was with them the day that I recognized the Snake River. My people, after all, were the Snake People, the Shoshones. I knew we were coming closer to my people's homeland. Its name comes from the slow winding across the flat lands that remind us of a snake's movement.

We had crossed the mountains at Lemhi Pass, and the next day met some of my people. I had been carefully instructed that we needed to purchase horses from the Shoshones to continue our westward journey. A couple of days later I was reunited with my brother Cameahwait. He was now none other than Chief of the Shoshones. We embraced and cried. I could have stayed with my people, but in a strange way, Captain Clark and Captain Lewis had made me feel more important than I had ever been. As a woman, I knew what my role would be if I stayed with my people. If I went with the expedition, I would have a chance to amount to something. I somehow knew that there was something very important that I needed to do. I felt a strange impulse, as if I had lived in another life, and it was predetermined that I should follow these men. Both Captains expressed openly their satisfaction at my

<sup>67</sup> Kay Redfield Jamison, *Night Falls Fast*.

performance as translator. Captain Lewis however seemed a little sad, for reasons I could not fathom.

A few days later, the expedition was following the Snake River trying to determine its origins. I had explained that there were several origins, but they didn't believe me. Yet I wasn't knowledgeable enough to explain clearly the histories of the Shoshone People and the Snake River that allude to various origins. One afternoon I was alone with them on a canoe as Captain Lewis and Clark were following one of the tributaries. We stopped at the bank of the river, and sat on the soft grass. I could make some sense of their conversation, and the fragments I remember hearing chilled me.

"What the devil is perturbing you?" Clark asked Lewis.

"You can tell? What is it that you are seeing? What do you mean?" responded Lewis.

"I mean that you don't show any enthusiasm about anything. I asked Sacagawea to join us, because she not only instills in me great happiness and satisfaction, but I have noticed that you also seem to brighten up around her. Does this sullen mood of yours have anything to do with the fact that she favors me?"

"Favor you? Why would you think that?"

"Is this, then, what this is all about?"

Captain Lewis turned to look at me. I pretended to be playing with my son. I know he knew that I was looking at Captain Clark, and he knew that I was listening. He looked at me again, then at my son, then at Clark.

"No. This is not about Sacagawea. On the contrary. I thought you knew. I thought Jefferson might have filled you in."

"You mean President Jefferson?"

"Yes, that Jefferson. He knows me well. He asked me to name someone to be second in command in case I died. I decided that instead of second in command, you would share the command. That way no one could doubt your authority in case something happened to me."

"I've heard all that before. But this is different, Meriwether. I am not talking about command, or the "historical" nature of our journey. I am talking about the man; about you, my friend. Would you care to throw more light on this and tell me exactly what you are talking about?"

After a long pause, Lewis spoke slowly, "I have what I call dark moods. Very dark. They come and go. The morbidity of my thoughts is recurring, and they are a constant companion when these moods engulf me. I see death everywhere, I see rotting bodies and limbs everywhere. Everything is a reminder that all ends in death. My meals remind me of the end of all life. My thoughts run from one tormented idea to another. Each thought worse than the previous one. The suffering seems to be worse each time, like a small pain that accompanies you and never leaves you, a pain that isn't more severe, it just seems so because it lasts so long. The pain is worse because it is back, not because of the pain itself. I know it will go away, eventually. It always does; but I dread the day

when it comes back. It always does. I can't convey it William, and there is nothing to be done. I just feel that my body is uninhabitable. It is raging and weeping and full of destruction and wild energy gone amok. I see a creature that I don't know but must live and share my mind with. It is an endless level of agony, all day and all night. It is a pain with no hope of relief, at least, no knowledge of when, if ever it will abate. I sometimes think of ending it all by taking my life. I feel it is all useless."

I was sitting quietly breast-feeding my son, listening to this banter of death. I couldn't believe what I was hearing as I nurtured my baby. I forced myself to continue hearing someone talk about his own death. I had been taken from my family as a young girl of fourteen; I had been abused and raped, I had been sold as a slave, as an object, and at the time, my enslavement, compared to what I had endured, seemed like a good thing. However, I had never considered ending my life. I felt that as proof I had been right, I was here, now, sitting in the sun, listening to the soft rustle of the slow moving waters and the leaves blowing in the summer breeze, with my son happily pressing my breast for more milk. As his eyelids closed, I pulled my breast from his mouth, and he smiled. He had fallen asleep. I stood up. I approached Meriwether and William; I looked at them and smiled and then sat down next to them. Clark smiled at me and sat in silence.

Meriwether smiled at me with sadness in his eyes. I understood the sadness; I had felt deep sadness and despair, but his seemed much greater. His eyes seemed to ask me, "Don't you see it, don't you see it?"

"The road back to life is cold and colder still, but with good weather, and the grace of God, I can make it. Don't worry, William. I confide in you, and you should know; I live in terror that someone might find out how fragile I am, but oddly and fortunately, the keen observations of my fellow travelers are not keeping track of me."

"Is this pain like losing a brother or a dear friend, Meriwether?"

"Grief is different than melancholia. Grief is sad, it is awful, but it is not without hope. Grief does not plunge me into unendurable darkness. My own death never crosses my mind. And there is a huge solace and comfort in the enormous kindness of friends, family and even strangers."

"I don't know what to say, Meriwether," Captain Clark said. He turned to me to check how Pompy was doing.

Captain Lewis turned to me and smiled. He then turned to Clark and continued, "My moods are intense and my temperament rather quick to boil, but I find that making plans into the far future gives me a certainty and control, and the periods of absolute blackness become fewer and less extreme. Sometimes I can only describe this feeling as despair within despair. It comes out of the cold night and gives me an anguish that I didn't think possible. Sometimes I feel that I have felt the wind of the wing of madness. Other times it feels as though I am imprisoned in a fiercely overheated room broken by despair, as if because there is no breeze there is no escape from this smothering confinement, as if it is entirely possible that the only solution is oblivion."

We sat in silence. The waters were very clear. As the river was shallow and wide, you could easily see the bottom. If my memory served me right, we were very near the headwaters. I stood up and handed Pompy over to Captain Lewis. He looked at me inquiringly. I nodded, encouraging him to hold my baby. As he did so, he understood and smiled. I leaned down and kissed him on the forehead. A new life is so sacred.

We could hear the men talking. They were catching up with us. Clark stood up, "We better get going."

I sat in the middle of the canoe, Clark in front and Lewis behind me. The current was very mild and with little effort it was possible to make some headway up the river. I looked back and waved at the approaching party behind us. They waved back. As we turned a bend, there, in the middle of the river was a huge moose. It turned to look at us, and calmly walked into the forest.

Lewis spoke softly, "Don't worry, Captain Clark, this black mood will pass soon. I won't let it interfere with my duties." Captain Clark nodded as he rowed. We turned another bend and came to the base of a small hill. You could see the water gushing out of the ground, as if it was a boiling cauldron of the cleanest water you have ever seen. There was nowhere else to go in the canoe, but back the way we came.

Captain Lewis seemed sad for a few more days and then I saw him flash his white teeth once again.

While we were slowly following the Columbia River, I clearly remember one afternoon when I discussed with Captain Clark the reasons for hiring my husband. He, after all, had lost much face since we had left Fort Mandan. His ineptness and ill treatment of me had been his downfall. Captain Clark said to me, "Sacagawea, your husband was hired because he claimed that he spoke Shoshone and Hidatsa. It was just a few weeks before our departure that I realized that it was you who spoke Shoshone. At that point, it didn't really matter to me, and for that matter to Captain Lewis, and what is more, we both agreed that we, he and I, would greatly enjoy the company of a lively woman like you."

"But what about my husband?"

"He would be someone else on the expedition, that is all. I knew that you would bring Pompy with you. And I promised myself, and made Captain Lewis promise also, that we would always look out for your child."

"Thank you, Captain Clark," I said, realizing that I cared more for the two captains than I did for my husband.

A few months later, after following the Columbia River, we finally came close to the Great Ocean. I had a big argument with Clark, the only argument I can recall. Captain Lewis found it all very funny and laughed a lot about this. This made me even more adamant that I should win the argument with Captain Clark.

The local Indians, the Clatsop, had reported that a whale had been beached where we would reach the Great Ocean. Captain Clark was assembling a group, which did not include me, to go see if it was possible to obtain some whale oil and blubber, which could be used to feed the men. "With all due respect, Captain Clark, I have carried my

load, just like any other man on this journey. I have taken care of my baby, I have asked no help. I have collected berries and fruits. I have cooked and fished. I have conducted transactions of great importance with the Shoshones. I demand," Captain Lewis interrupted me with his laughter. I realized he was not laughing at me, but at Captain Clark. "I demand," I continued, "that I be with the first group to go to see the Great Ocean. I demand that I be allowed to go and see this great fish. I deserve it, just like anyone else! I should get to see this marvel. I have traveled too far to be denied this!"

"Be reasonable, Captain Clark. She is right," interjected Captain Lewis.

"Please." I pleaded looking up into Captain Clark's brown eyes. He looked at Lewis and then broke into a smile.

"All right, you can march at the front of the column. As you know, according to the Clatsop Indians we have encountered the Great Lake, as you call it. The Ocean lies just over that hill. We will climb it this afternoon and see if it is true. You can be at the front. What do I care who sees the Ocean first."

I had never imagined a fish so huge. In my wildest dreams, I could never have seen waves so big. All the travails of the journey west were well worth what I saw that day.

We spent the winter there and rested from our long trip westward. During those cold months, my love for Captain Clark grew and my friendship with Captain Lewis blossomed. I slowly learned more and more about them. I learned of Lewis' great intelligence and how his knowledge of many things encompassed almost all fields. What he didn't know, Captain Clark knew. Together they made a wonderful pair. I loved talking to both. I felt my intelligence and knowledge expanding, and above all a warmth and equality I had never felt before.

Captain Lewis was a little frustrated that his drawing abilities were not better. He complained to me that if he had to do it over again, he would study and work harder to do better drawings. Captain Clark was always willing to talk about anything, even personal matters. I felt that I should get to understand the black moods that Captain Lewis had mentioned that summer, but he adamantly refused to discuss them, telling me that talking about them was a way to bring them back. He needed to avoid thinking about them and keep his mind planning the future. In this way the dark moods would recede to the back of his soul. The most he told me was that he had to fight to keep the blackness away.

Captain Lewis told me about how he had carefully planned the expedition with President Jefferson. He spoke of President Jefferson as if he were his father. His admiration for him was open to all to see.

On the return trip, as we neared the Shoshone areas of my childhood, I was able to guide the expedition through a gap in the mountains leading to the Yellowstone River. This place was magical. There were steaming hot baths, the colors of the waters varying with the minerals in them; some were blue, others yellow, and others still, red. Wildlife was everywhere; it was impossible to starve. There were deer and elk, moose and buffalo, wolves and foxes, porcupines and eagles and hawks. In the water there were fish

and ducks and geese and herons; there were beavers and brant. You could easily live off the buffaloes' placenta if you followed them around, making hunting unnecessary.

We found places where water exploded from underground caves in huge upside down waterfalls reaching into the sky. There were places where the heat of the water would kill all life. Every day was a new and mysterious experience. It was here I noticed Captain Lewis slipping into one of his dark moods. He felt no pleasure at the sight of all these animals. He had no admiration or awe for the flying waterfalls. He lost even his appetite; I had to force him to eat every night.

One night while we sat eating, I said, "Captain Lewis, I worry about you."

"Don't worry. I am fine. This will soon pass, Sacagawea. Just help me so the others don't notice my darkness. This way we can finish the trip successfully. It is very important to me that I finish as one of the leaders of the expedition." I promised him that I would help him and make sure that he finished the trip.

Captain Lewis made extensive entries in his journal, noting down animals, plants, geographical and meteorological information. He normally didn't share with me any of the details in his journals. However, he did read the following from one of his entries from the previous summer. He had written it about one year before, around the time we had gone looking for the origin of the Snake River when I first heard of his black moods. We were just a few days from returning to Fort Mandan in mid August. I remember it clearly:

*This day I completed my thirty first year, and conceived that I had in all human probability now existed about half the period which I am to remain in this Sublunary world. I reflected that I had as yet done but little, very little indeed, to further the happiness of the human race, or to advance the information of the succeeding generation. I viewed with regret the many hours I have spent in indolence, and now sourly feel the want of information, which those hours would have given me had they been judiciously expended. But since they are past and cannot be recalled, I dash from the gloomy thought, and resolved in the future, to redouble my exertions and at least endeavor to promote those two primary objects of human existence, by giving them the aid of that portion of talents which nature and fortune have bestowed on me; or in future, to live for mankind, as I have heretofore lived for myself.<sup>68</sup>*

More than a year after we started, the trip was over for Jean Babtiste and me. We returned to Fort Mandan and my husband was paid for his services. He also received 320 acres of land. I received a promise from Captain Clark that he would always look after my son. That to me was enough pay, but it served as a reminder that I was still a woman.

Captain Lewis said to me before parting, "I hope to see you in the future, Sacagawea, but I don't know what the future holds for me. However, I want you to know that I will

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<sup>68</sup> Ibid.

always carry you in my memories. I also promise you that I will be a better illustrator next time I see you.” This was the last time I saw him. I stayed with my husband.

Three years later I received a series of letters from Captain Clark.<sup>69</sup> The first one said in part:

*I have had a terrible time to get Lewis to work with me to finish preparing the journals of the expedition . . . President Jefferson wrote to Lewis, “I am very often applied to know when our work will appear . . . I have so long promised copies to my literary correspondents in France that I am almost bankrupt in their eyes. I shall be very happy to receive from yourself information of your expectations on this subject.” I find that there are big gaps in his writing and work. Most of them occurring in August and September; some extending into the late fall or early winter. You know what I mean; this can only be indicative of his dark moods.<sup>70</sup>*

In early October of 1809 I woke up in the night with the clear notion that something terrible had happened. At first I wasn’t sure what could have woken me up; what could have happened, and I went to check on Jean Babtiste to make sure that he was all right. As I stood in the darkness, a terrible sadness enveloped me. I knew that the dark moods and morbid thoughts had overwhelmed Captain Lewis. Meriwether Lewis was no longer.

That day I received a note by post. Captain Clark, in his clear handwriting:

*I have tried to help Lewis sort out his expense accounts . . . Several of his Bills to the government have been protested, and his Creditors all flocking in near the time of his Setting out distressed him much, which he expressed to me in Such term as to Cause a Cempathy which is not yet off—I do not believe there was ever a honester man in Louisiana nor one who had pureor motives than Governor Lewis. If his mind had been at ease I Should have parted Cherefully.<sup>71</sup>*

A couple of weeks later, another correspondence from Captain Clark arrived. I however, already knew in my heart what the message would say:

*A week after he left St. Louis he drew up a will. This in itself wouldn’t worry me too much, but a few days later, when he arrived at Fort Pickering, the commanding officer, Captain Gilbert Russell, has informed me that he heard from the crew on Lewis’s boat that Lewis had tried to kill himself twice. He also informed me that Lewis*

<sup>69</sup> I have taken the liberty of using some letters quoted in Kay Redfield Jamison’s book, *Night Falls Fast*, in a different context for literary purposes. Author’s note.

<sup>70</sup> Kay Redfield Jamison, *Night Falls Fast*.

<sup>71</sup> *Ibid.*

*had been drinking heavily and was mentally deranged. These are the words that Captain Russell used, he told me that he was afraid for Lewis's life, that he unloaded the boat so he could not escape and kept him under surveillance for several days. His condition continued without any material change for about five days, during which time the most proper and efficacious means that could be devised to restore him was administered, and on the sixth or seventh day all symptoms of derangement disappeared and he was completely in his senses and thus continued for ten or twelve days . . . In three or four days he was again affected with the same mental disease. He had no person with him who could manage or control him in his propensities and he daily grew worse until he arrived at the house of Mr. Grinder . . . where in the apprehension of being destroyed by enemies which had no existence but in his wild imagination, he destroyed himself in the most cool desperate Barbarian-like manner, having been left in the house entirely to himself.<sup>72</sup>*

A week later I received from Captain Clark a copy of a letter sent by James Neelly, the U.S. agent to the Chickasaw Nation that he had sent to President Jefferson. Captain Clark explained to me that Mr. Neelly had been with Lewis the last three weeks of his life:

*It is with extreme pain I have to inform you of the death of His Excellency Meriwether Lewis, Governor of Upper Louisiana who died on the morning of the 11th instant and I am sorry to say by suicide.<sup>73</sup>*

William Clark added this to the copy of Mr. Neelly's letter:

*I fear O! I fear the weight of his mind has overcome him.<sup>74</sup>*

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Governor Meriwether Lewis arrived at Grinder's Inn, close to sunset. It was a rough-hewn, poorly built log cabin. After inquiring if he could stay the night, he brought his saddle into the house. He was dressed in a loose gown, white with blue stripes.

"Did you come alone?" asked Mrs. Grinder.

"There are two servants riding behind me. They should be here shortly. Do you have some spirits? I would like some."

Shortly afterwards the spirits were presented to him. He had a little to drink in a small shot glass. When the servants arrived, he got up and inquired, "Where is my gunpowder?"

"I'm not sure there is any," Pernier, one of the servants answered.

"I'm sure there is some in a canister."

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<sup>72</sup> Ibid.

<sup>73</sup> Ibid.

<sup>74</sup> Ibid.

As they went to find it, Lewis walked back and forth talking to himself. "My heart is pounding wildly, the fear is growing. Breathe in deep; hold it. Out, slowly . . . In. Hold. Out, slowly." He repeated this litany in rhythm with his pacing. He would turn and walk towards Mrs. Grinder, and then suddenly he would wheel round, and walk back as fast as he could. "Who is coming after me? Why do they want me dead? Who? Why?" he repeated under his breath.

When supper was served, he sat down and started to eat, his face was flushed as if he had a fit. After just a few mouthfuls, he got up and went outside towards the kitchen in the neighboring building, yelling at himself violently. "This melancholia of mine! It is pushing me to insanity. The relief, I know is only temporary; greater pain will follow. It is the hopelessness more than the pain that crushes my soul. Why do they torment me?" He dropped to his knees, and wept. A few moments later, he came back in and smoked for some time. He went out and traversed the yard as before. He again came in and sat down to his pipe, making an effort to be composed. He looked towards the west and thought, "What a sweet evening it is."<sup>75</sup>

Mrs. Grinder, fearful of him, announced that his bed was ready, to which he answered, "I will sleep on the floor. Please tell my servant to bring in the bear skins and the buffalo robe."

"What happened to the powder?" Meriweather asked Pernier when he walked in.

"I couldn't find it," Pernier answered. "Here is what you requested."

After the skins and the robe were spread before him, the two servants retired to the barn, Mrs. Grinder to the kitchen. Lewis paced in his room, talking to himself in hushed tones, "To die were best. How then with honor die? Unseemly is the noose 'twixt earth and heaven: Even of thralls 'tis held a death of shame, noble the dagger is and honorable, and one short instant rids the flesh of life."<sup>76</sup>

Lewis continued pacing for several hours. He thought about Clark and what he told him not so long ago, "It is like falling into a deep black cave where as you are drawn down, the pinpoint of light that is the entrance of the dark pit grows smaller and smaller. Finally it flickers out and with it goes all feeling. Sometimes there is no despair as there is no meaning. It is a state of not being, of being emotionally dead. My compulsion to give it a name and describe it is very strong but the closest I can come is that of a living void; of being condemned to life. As the ability to live recedes, the most terrifying part of all is that it leaves certain serenity. At that point only the idea of death itself gives hope. Death."

He had a little bit of gunpowder with him. It was enough. He grabbed his pistol, loaded it, put it to his head, "How many times has the idea of ending it all, allowed me to endure a little longer? Not this time." He squeezed the trigger. Lewis fell to

<sup>75</sup> Stephen E. Ambrose, *Undaunted Courage*. I have tried to stick to the facts as known, but most of what Meriweather speaks, thinks and feels is my own imagination. Author's note.

<sup>76</sup> Nell Casey, Editor, *Unholy Ghost*.

the ground. He made a hole in his forehead and exposed his brains, but there was not much bleeding.

“O Lord!” he said aloud. He was still alive. He took his other pistol, put it to his chest and pulled the trigger again. The ball entered and passed downward through his body, to emerge low down on his backbone. He staggered to his feet and out of the room and yelled in the direction of the kitchen, “O madam! Give me some water and heal my wounds! I am so thirsty.”

Mrs. Grinder, afraid of him, locked herself in the kitchen. Lewis staggered back towards his room, falling against a stump. He crawled a short distance, then raised himself to his feet by the side of a tree. He stood there for a minute, wondering how to end it, but he couldn’t think. Then he went back to the room. Thirsty, he walked back to the kitchen door, found the water bucket. It was empty. He returned to his room and sat in bed. He stared at his portfolio, which contained his razors. Lewis sat staring at it, trying to muster the strength to go get his razors.

As soon as there was enough light, Mrs. Grinder went to seek the two servants in the barn. They came running and found Lewis trying to cut himself in any place he could.

“I have done the business my good servant give me some water.”

Pernier helped him drink.

Lewis uncovered his side and showed them his second wound. Lewis looked up at them and implored, “Please get my rifle and blow out my brains. I’ll give you all the money I have in my trunk.” The servants did not move. “I am no coward; but I am so strong, so hard to die. Please don’t be afraid of me. I will not hurt you. Please get my rifle and kill me.” The servants still didn’t move. “Death is the only hope, death,” he thought. Lewis continued to make little small cuts wherever he could until he collapsed. His eyes closed. He died shortly after.

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I was at Fort Mandan a few weeks after Captain Lewis’s death. Captain Clark sent me a copy of President Jefferson’s memoir of Captain Lewis:

*Governor Lewis had, from early life, been subject to hypochondriac (melancholic) affectations. It was a constitutional disposition in all the nearer branches of the family of his name, and was more immediately inherited by him from his father. They had not, however, been so strong as to give uneasiness to his family. While he lived with me in Washington I observed at times sensible depressions of mind: but knowing their constitutional source, I estimated their course by what I had seen in the family. During his western expedition, the constant exertion, which that required of all the faculties of the body and mind, suspended these distressing affectations; but after his establishment at St. Louis in sedentary occupations, they returned to him with redoubled vigor, and began seriously to alarm his friends. He was in a paroxysm of one of these, when his affairs rendered it necessary for him to go to Washington . . .*

*About three o'clock at night he did the deed which plunged his friends into affliction, and deprived his country of one of her most valued citizens . . . It lost too to the nation the benefit of receiving from his own hand the narrative . . . of his sufferings and successes, in endeavoring to extend for them the boundaries of science, and to present to their knowledge that vast and fertile country, which their sons are destined to fill with arts, science, with freedom and happiness.<sup>77</sup>*

This was one of the most important moments in my life. I had received a copy of a memoir of someone dear to me, written by the Great Chief of the white people. I sat and cried for my friend Meriwether Lewis. I knew that he had found the peace that eluded him. I felt in my heart that I would soon see him.

Three years later I wrote to Captain Clark informing him that I was pregnant. However, I had not been feeling good for the last few years and I feared that the strain of producing a baby might prove too great for my body. I asked him to remember his promise to take care of my child, and that if things worked out it would be children. Jean Babtiste was now seven years old. Shortly before I gave birth to my new child I received Captain Clark's answer:

*I have arranged for the adoption of your children in case of your death. Please have your husband Toussaint and you sign the attached documents and send them back to me at your earliest convenience. A promise is a promise.*

*Love always,  
Capt. William Clark*

A few days later I went into labor and produced a beautiful baby girl. I named her Lisette. My husband passed me my baby girl and put her in between my breast and my arm. He smiled at me. I smiled at him and felt very tired. I closed my eyes and slept. I felt a strong hand take a hold of mine. I felt renewed and full of life. I seemed to float up and I opened my eyes into the bright light. Captain Meriwether Lewis was there smiling and holding my hand. I felt very peaceful and relaxed. He said to me, "I have improved my drawing. I am actually getting quite good at it." And this also filled me with peace.

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<sup>77</sup> Kay Redfield Jamison, *Night Falls Fast*. The letter is taken out of context for my own purposes. Author's note.

# Depression & Manic Depression

## *A New Approach to Depression and Manic-Depression.*

*In the discussion of the brain we mostly looked at circuits. We took for granted they worked properly, although loops could lock and be unable to disengage. In the case of mania and depression many circuits are involved. Essentially, mania triggers many positive emotions concurrently and depression triggers many negative emotions simultaneously. Exactly which combination of emotions, and which memories are related to these emotions, determines how differently, from individual to individual these mood disorders can express themselves. In my opinion Mania and Depression are both a Thought Disorder and not a Mood Disorder. Manic-depressive patients may have subtle deficits in short- and long-term memory, attention, and executive functions.*

*In mania and hypomania, it is necessary to explore at the level of neurotransmitters. If there is a very minor increase of glutamate, a small rate of excitation of (projection) neurons ensues, and everything will speed up slightly in the cortex. This probably happens because of a genetic predisposition, as relatives of manic-depressives tend to be more likely to also be manic-depressive, unipolar depressive or schizophrenic. Glutamate is not only a major excitatory neurotransmitter but also an essential metabolite; it is also a building block of GABA, an inhibitory neurotransmitter.*

*The endocrine system, to complicate matters more, might also be involved. Many aspects of the endocrine system are regulated by the hypothalamus: regulation of sleep, appetite, and sexual drive. In addition, the secretion of hormones by the hypothalamus depends on levels of hormones secreted by the pituitary, thyroid, adrenal and sex glands (testes and ovaries). This complex feedback system could be affected at any one of several levels.*

*In manic-depressive patients, and even more so in unipolar depressive cases, abnormalities from all three parts of the endocrine system have been observed. In patients with rapid cycling, low thyroid functioning has been detected.*

*Ultimately, stress has been linked in many cases to the onset of unipolar depression and manic-depression. The stress response also fits nicely with the hypothalamic-pituitary-adrenal axis. This would also be compatible with a genetic predisposition. I believe that stress is a normal reaction to prolonged depression, but stress can be responsible for the onset of depression.*

*When neurons signal each other faster, thoughts and speech become accelerated, accompanied by increased physical activity, decreased need for sleep, increased sexual activity and a possible enhancement of the senses. Prior to the availability of medication, the increased activity could lead to exhaustion and even death. Studies show normal individuals change their thoughts every five to six seconds, compared to less than two seconds for manic patients. The number of syllables spoken in a minute by a manic patient is between 180 and 200; a normal person's 120*

to 155. This acceleration will interfere with attention as the individual will be more easily distracted and have greater difficulty concentrating.

The changed speed and patterns of thought excite the associated emotions by signaling the thalamus and tricking it, triggering a feeling of joy or even euphoria, sometimes with inappropriate spontaneous laughter. Self-esteem grows disproportionately with decreased inhibitions and a greater sense of importance. As a result of the increased self esteem, risky and bizarre behavior is common; grandiose delusions or paranoid delusions are also quite possible; increases in use of alcohol and drugs are frequent. The increased speed of thoughts activates associated positive emotions and activates the pleasure centers. It is also known that some agents that increase dopamine (e.g., L-dopa, bromocriptine, cocaine) may induce mania or mania-like behaviors and feelings; the good feelings induce a faster mode of thinking. Also, it is known that some agents that block dopamine (e.g., haloperidol) may decrease mania.

As a result of the increased self-esteem and speed of thought, all these changes in activities seem perfectly logical to the person in a manic phase. Sensuality is pervasive and the desire to seduce and be seduced irresistible. The manic-depressive's erratic behavior may seed social violence or sometimes self-destructive behavior. In a few cases, as a result of their actions, they might provoke others to try to kill them, or they may even try to kill themselves.

The symptoms of mania (or depression) mix with each individual's personality and thoughts to create a unique medley that differs from person to person and even from day to day. Since each person has a different stream of memories, these memories will bring on their associated emotions. In the manic phase, irritable and quickly shifting moods are common; shifting rhythms of thinking trigger different emotions. Just as emotions activate associated memories and ways of thinking, speeded-up thinking and certain memories will elicit a sense of elevated mood. The euphoric state in turn will feed back and activate positive thoughts and make bad memories inaccessible. The result: an inflated sense of self, leading to grandiose plans and extremely dangerous behavior to self and others

When manic symptoms are somewhat lesser, the condition is called hypomania. The symptoms last less than four days; delusions and hallucinations are not present; and, in contrast to mania, hypomania is not severe enough to cause marked impairment in functioning. In some individuals the change in functioning may even take the form of a marked increase in efficiency, accomplishments, or creativity.

This period of excitation can last for as little as one day or as long as several weeks. Varying from person to person, the excess excitation will eventually produce a slight deficit of other neurotransmitters as their normal replacement rate can't keep up with the speeded up consumption rate. Levels of serotonin, norepinephrine, dopamine and acetylcholine eventually drop slightly below normal. When this happens, a change in the speed of thinking is the end result. Now, the cortex's signaling rates slow to rates that are less than normal. As the neurons decrease their firing, glutamate is restored to a normal level and made available for GABA synthesis. This brings GABA levels back to their normal balance with glutamate and momentarily also slows down the brain. The slower thinking will be associated with negative emotions, and activate them as the brain is locked into a slower mode. Some of these possible emotions are sadness, emptiness, fear, anxiety, diminished pleasure, worthlessness, and excessive or inappropriate guilt.

*There can be persistent anger and increased irritability, even an exaggerated sense of frustration as negative moods shift quickly.*

*This slowed-down brain produces physical symptoms as well: facial expressions and demeanor associated with sadness; decrease or increase in appetite, psychomotor agitation (inability to sit still, pacing, hand-wringing, rubbing or pulling of the skin, clothing or other objects) or retardation (slowed speech and body movements; increased pauses before answering; speech that is decreased in volume, inflection, amount or variety of content and even muteness), insomnia or hypersomnia and fatigue or loss of energy. A significant reduction in sexual desire is present occasionally. The slower brain also exhibits diminished ability to think, to remember (mostly the positive), and to concentrate.*

*However, there is one area (the ventromedial prefrontal cortex) with marked hyperactivity during depression. This area of the brain is responsible for planning and detecting possible future threats as well as participating in other higher mental functions. This area is heavily involved in executive functions and voluntary actions. The hyperactivity results when the brain sends out handshakes to try to determine what is wrong, and, unable to find an answer, locks into this state. This explains the general feeling of anxiety that is commonly reported.*

*All the present negative emotions mixed up and coupled with the inability to remember and to think produce a feeling of indescribable blackness, of unfathomable emptiness, of interior doom, which adds to a greatly diminished sense of self. In severe depression, this in turn will produce a feeling that is worse than terrible grief. As a result of these feelings of worthlessness and guilt, associated thoughts are triggered that may include negative evaluations of one's worth or guilty preoccupations over minor past failings.*

*The survival impulses of the organism are diminished in proportion to the loss of self. This greatly diminished or even lost sense of self, in some cases, will produce recurrent thoughts of death, recurring suicidal ideation without a specific plan, or worse, a suicide attempt or a specific plan for committing suicide. These thoughts might range from a belief that others are better off if the person were dead to actually carrying out a specific plan to commit suicide. The frequency, intensity and lethality of these thoughts vary tremendously from person to person, from day to day. Motivations for suicide may include a desire to give up in the face of perceived insurmountable obstacles or an intense wish to end an excruciatingly painful emotional state that is perceived as having no end.*

*Again, the thoughts and memories of each person will be uniquely linked to individually varying negative emotions; as a consequence, each person will express a depressed state differently. Our emotions lie at the center of the experience that most of us take for granted, the presence of a well defined, predictable and unique subjective entity we call the "self". When our emotions become disordered, our sense of self comes into doubt; we have great difficulty perceiving the difference between health and illness.*

*Depression might be mild, moderate or severe. In cases of mild and moderate depression, the person might seem to be operating normally, but this appearance is only through great effort.*

*In contrast to the depressive phase of bipolar disorder, the onset of unipolar depression is produced independently of a manic episode. The difference is that the balance between GABA and glutamate has gone in the opposite direction. There is a slight decrease in glutamate*

*excitatory action. This decrease will eventually lower the levels of norepinephrine, serotonin and dopamine, but probably not acetylcholine. This might explain the difference in psychomotor agitation (unipolar) and psychomotor retardation (bipolar). It also explains why antidepressants might produce mania in bipolar patients, since a slight increase in activity by any of the neurotransmitters (serotonin, norepinephrine and dopamine) might increase the activity of glutamate, which is present in almost normal amounts. In the case of unipolar depression, glutamate might be at lower than normal levels and a slight indirect increase of it by an antidepressant will help restore its normal level.*

*The difference between the depressive phase of manic depression and unipolar depression is a small but subtle one. In the former case, depression was brought by a slight lowering of the normal levels of various neurotransmitters through the excessive action of glutamate. In other words the brain crashed. In the latter case, depression (unipolar) was brought by a lowering of levels of some neurotransmitters because of a slight decrease of glutamate excitation; a slowing down of the brain. A small, but important difference: originally, levels of neurotransmitters, primarily glutamate and GABA, will be slightly different. As a consequence, not surprisingly, the pharmacology of these two illnesses should be different. The neurochemical levels and similarities between the two, manic-depression and unipolar depression, in some individuals might be almost indistinguishable at a given time, but for the most part there are going to be important differences between these two. Given the fact that there are many receptors for each neurotransmitter, it should not be surprising that from person to person, the pharmacology would vary accordingly. Much more needs to be done in this important area.*

*Under normal conditions emotional transference is routinely achieved. Positive affects facilitate the interactive generation of higher and more enduring levels of positive emotions. Particularly in a depressed state, negative affects generate higher and more enduring negative emotional levels. This in turn leads most people to avoid being around depressed persons. This exacerbates the depression as the person participates less, or not at all, in positive emotional transferences.*

*In cases of mild and moderate depression, the person might seem to be operating normally, but this appearance is only through great effort. The effort to diminish the negative emotional transfer, particularly with close, loved ones in order to spare the internal generation of awful feelings in them, leads to isolation. The isolation leads to a worsening of depression.*

*Great effort should be expended to lift the depression. The continued depression, inexorably, almost always, slowly leads to intolerable conditions.*

*When people suffer a depressed mood for most of the day more days than not, it is called Dysthymic Disorder. Dysthymic Disorder is to Unipolar Depressive Disorder like hypomania is to mania—a less severe form. If mania or hypomania occurs, then the diagnosis would be for Manic Episode or Hypomanic Episode, not Dysthymic Disorder. The diagnosis for Cyclothymic Disorder is used if the manic and depressed moods alternate more than four times in one year.*

*Dysthymic disorder is probably brought on by the lowering of just one or two of the neurotransmitters associated with depression: serotonin, norepinephrine and dopamine.*

A few weeks before Mitch died, he and I were in the office where we run our business. His face was covered with pimples, it wasn't terrible, but I had never seen it so bad. He was fidgety and seemed unable to finish tasks assigned to him. He answered the phone, talked to a customer. He said to me as he covered the mouthpiece, "Someone wants to order a belt."

"Take the order and get a credit card number and expiration date."

He proceeded to do so. When he finished, I said, "Fill in the order and invoice it and run the credit card through." Although he had finished packing the belt, he seemed confused, as he couldn't find the piece of paper where he had written down the order and credit card number. I couldn't find it either. We turned the office upside down. Eventually, we found it under another box that had also been prepared for shipping. He said to me matter of factly, "I can't concentrate, there are certain types of jobs that I won't be able to do. I'll just have to look for a job that doesn't require thinking."

"Mitch, you can't go through life losing things like that. You need to discipline yourself to be more organized," I admonished. He seemed to grin back at me. "I am serious, Mitch. Do you like to be losing things all the time?"

"I feel very anxious while I am looking for things, but I feel good when I find them. Sometimes I wonder if I lose things so that I can recover them, this is the only time I am happy," he said matter of fact, even mildly surprised that I didn't see this.

"Mitchell, you need therapy. You are not well. I can't be employed today as a bird watcher because I can't look up," I said in reference to the damaged disk in my neck that was forcing me to hold my head down and to the left to avoid pain. "I need to work on getting myself well, not on just giving up and looking for a job where I can hold my head down all day. It's the same with you."

"I don't know, dad. I've gone over this with you before. Those guys are always looking for some trauma. There is none. I think its all chemical."

"To quit smoking, I had to work for twenty days. It wasn't easy. It takes time to change your brain. I still feel like smoking occasionally. That is how therapy works; little by little it will affect small changes. Have you been taking your medicine?"

"Yes. That is helping. I'm okay. Some days are worse than others. Today is just a bad day."

"I wish I could convince you to try some therapy. Remember the doctor in Mexico told us that therapy and medication combined is the best way to do this," I said. I felt that eventually he would decide voluntarily to seek therapy.

"I'm okay. Don't worry," Mitch said with a smile. I looked at him and despite his words and smile, I still worried. I hoped that he would be better tomorrow morning, as had happened before.

I didn't know better.

## Vincent

**I**n Paris with my wife in September 2002, we visited the D'orsay museum. I reached the section with a self-portrait by Van Gogh, the one in which the artist is wearing a jacket and vest of almost the same color as the wavy greenish-blue background. I was immediately struck by the resemblance of Van Gogh to my brother-in-law Mitchell. I stood there fascinated, looking into the eyes of Van Gogh. If Mitchell had lived another ten years, he might have looked very much like Van Gogh in his later years. I didn't mention anything to my wife, as sometimes she becomes sad at the memory of her lost brother.

At lunchtime we went to one of the museum's restaurants. We sat down and shortly found ourselves engaged in conversation with an older American couple sitting at the table next to us. They were celebrating their fiftieth wedding anniversary. They told us they had spent their honeymoon at this place when it was the D'orsay Train Station-Hotel. When they found out that we lived in Carmel they asked, "Have you heard that Van Gogh's table is going to Carmel?"

"Van Gogh's table?"

"Some people bought the house, the café Ravoux, where Van Gogh died, and they turned it into a restaurant. The table that Van Gogh used to sit at and have his dinner was still there. The owners of this new restaurant decided to train a chef to make the country French cuisine that Van Gogh ate and charge extra for sitting at Van Gogh's table to have dinner. Eventually this table along with the chef was sent to visit other cities. I think the table has gone to New York and Miami. I just read in the papers that it is going to Carmel!"

"We haven't heard anything about this. It sounds very interesting, we'll look into it." I have to admit that we promptly forgot about it until months later.

One month exactly after my son Mitch died, on December 12 and 13, I had very vivid images of my brother-in-law Mitchell. Although I had not seen my brother-in-law in twenty-three years, in my mind's eye it was as if I had seen him a few hours before. For two days, these very clear images of Mitchell continuously intruded into my consciousness. I could see my brother-in-law more clearly than I could my son. The next day, a Saturday, I received a phone call from Sheila, a dear friend of ours.

"Fred, how are you? I was calling to see if you and Pat would like to join us this afternoon for some wine tasting in the Village."

"Sure. We'll see you in a couple of hours." I replied.

A few hours later, after a short drive through Carmel Valley, I found myself watching Sheila's husband Gaston animatedly speaking French with a couple of men. As I approached them, Gaston saw me and smiled, "Fred, let me introduce you to the Chefs of Van Gogh's Table. They are going to be working here in Carmel for the next couple of months." He then proceeded to explain to me what I already knew. "Why don't you join us tomorrow at Casanova's where we are having an open house to introduce Van Gogh's Table to our friends." And so it was that the very next day I came to be sitting at Van Gogh's Table.

After eating at Van Gogh's table, when I got home, I opened one of my Van Gogh books, looking for the self-portrait that I had seen a few months before at the D'orsay. When I randomly opened the book this is what I read:

In a letter from Vincent to Theo his brother, ". . . *There is a figure in it, the figure of the flag bearer, in the extreme left corner, right against the frame—that figure is in grey, from top to toe, I shall call it pearl-grey—of a peculiar neutral tone, probably the result of orange and blue mixed in such a way that they neutralize each other—by varying that keynote, making it somewhat lighter here, somewhat darker there, the whole figure is as if it were painted with one same grey. But the leather boots are of a different material than the leggings, which differ from the folds of the trousers, which differ from the waistcoat—expressing a different material, differing in relation to colour—but all one family of grey. But just wait a moment!*

*Now into that grey he brings blue and orange—and some white; the waistcoat has satin bows of a divine soft blue, sash and flag orange—a white collar.*

*. . . But that orange blanc blue fellow in the left corner . . . I seldom saw a more divinely beautiful figure. It is unique.*

*. . . "The Syndics" is perfect, is the most beautiful Rembrandt; but "The Jewish Bride"—not ranked so high, what an intimate, what an infinitely sympathetic figure it is, painted d'une main de feu. You see, in "The Syndics" Rembrandt is true to nature, though even there, and always, he soars aloft, to the very highest height, the infinite. But Rembrandt could do more than that—if he did not have to be literally true, as in a portrait, when he was free to idealize, to be a poet, that means Creator. That's what he is in "The Jewish Bride". How Delacroix would have understood that picture. What a noble sentiment, infinitely deep.*

*One must have died several times to paint like that, how true it is here. As to the pictures by Frans Hals—he always remains on earth—one can speak about them. Rembrandt is so deeply mysterious that he says things for which there are no words in any language. Rembrandt is truly called magician . . . that's not an easy calling . . .*

The words, "One must have died several times to paint like that", and "is truly called magician . . . that's not an easy calling . . ." kept reverberating in my head.

I thought about how happy Mitch was last Christmas when he came home. He made some pastels to give one each to his mother, his brother, his girl friend, and me. Each one is interesting, because they all have a poem inscribed on it. Part of the poem in his mother's pastel read:

*Imagine a distant past,  
Learn to live it and not to perish  
Under its burden.  
Far away, a bright twinkle  
Promises safety.*

Pat wanted to have copies made of Katie's pastel and another painting of two cats Mitch had given her, so she called our friend Andre Balyon. A Dutch master painter, Andre paints realistic landscapes.

Having volunteered to help us make the reproductions we wanted, Andre came to our house for dinner to pick up the paintings. When I told him of my recent experiences with Van Gogh, Andre informed me that he and his seven brothers, all painters, were all born practically in the same place as Van Gogh, at Groot Zundert, a small village near the *Belgian* border. He went out of his way to tell me how much he dislikes Van Gogh.

Andre also recalled when he first met Mitch as a ten-year old. When we moved to Carmel, Andre was our neighbor. "Mitch walked up to my house and without any preamble asked me, 'Are you the famous painter my mother knows?' It seemed he was perfectly at ease talking to me, like we had met before and were good friends."

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Many have argued that great artists generally suffer from mood disorders. A direct consequence of this suffering is the need of the artists to find, through their art, expression for their manias and depressions. The link between madness and genius, an old cultural notion, is controversial. Lord Byron, almost a century before Van Gogh, remarking about himself and fellow poets said, "We of the craft are all crazy. Some are affected by gaiety, others by melancholy, but all are more or less touched." Kay Redfield Jamison, in her book, *Touched with Fire*, makes a good case for this link.

Some studies show that suicide rates among artists are five to eighteen times higher than in the general population. Vincent Van Gogh has been diagnosed, variously, with many illnesses, such as epilepsy, schizophrenia, absinthe poisoning, porphyria and Meniere's disease. Kay Jamison feels strongly that there is compelling evidence for a diagnosis of manic depressive. She argues that profound changes in mood, thinking, personality and behavior can occur during all phases of manic-depressive illness. Likewise, I have tried to show the intricate relationship between emotions and memories, the effects that a speeded up brain has during mania, and the manifestations of a slowed down brain during depression. Jamison also adds that some occasional episodes of psychosis are common in some individuals with manic depression.

Jamison notes that Vincent's brother Theo suffered from recurrent depressions and became psychotic at the end of his life; their sister Wilhelmina spent forty years in an asylum with a "chronic psychosis;" and their younger brother Cornelius committed suicide. The age of onset of Cornelius's symptoms was late adolescence or early twenties—cyclic attacks interspersed with long periods of highly lucid functioning.

As we can see from his letters, Vincent clearly suffered extreme mood changes, with long periods of depression and extended episodes of active, volatile and excited states. It is possible he suffered hypomanic depression, as his exalted states don't seem so extreme, but his condition was aggravated by psychotic episodes. Since Theo saved all the correspondence from Vincent, we can find ample evidence of Vincent's psychological state.<sup>78</sup> In one letter, Vincent writes:

"Do not imagine that I think myself perfect or that I think that many people's taking me for a disagreeable character is no fault of mine. I am often terribly melancholy, irritable, hungering and thirsting, as it were, for sympathy; and when I do not get it, I try to act indifferently, speak sharply, and often even pour oil on the fire. I do not like to be in company, and often find it painful and difficult to mingle with people, to speak to them. But do you know what the cause is—if not of all, of a great deal of this? Simply nervousness; I am terribly sensitive, physically as well as morally, the nervousness having developed during those miserable years which drained my health."

Vincent continues to discuss his mental state in other letters, ". . . But at times it is not easy for me to take up living again, for there remain inner seizures of despair of a pretty large caliber.

"My god, those anxieties—who can live in the modern world without catching his share of them? The best consolation, if not the best remedy, is to be found in deep friendships, even though they have the disadvantage of anchoring us more firmly in life than would seem desirable in the days of our great sufferings . . ."

Vincent was one of the most prolific artists ever. At his peak, he painted a new canvas every thirty-six hours. "Sometimes I draw sketches almost against my will. Is it not emotion, the sincerity of one's feeling for nature, that draws us? . . . The emotions are sometimes so strong that one works without knowing one works, when sometimes the strokes come with a continuity and coherence like words in a speech or a letter."

His drive to express himself was not restricted to painting; his writings to his brother, sometimes as many as two or three six-page letters a day, shows a compulsion to write.

Vincent's depressed moods alternated with exalted states: "What I think of my own art is this—that the picture I did at Nuenen of those peasants eating potatoes is the best one after all . . ."

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<sup>78</sup> Quoted from letters in the book edited by Bruce Bernard, *Vincent by Himself*, 1985, 1987

He dreamt of leading the new wave of artists: “. . . If Gauguin were willing to join me, I think it would be a step forward for us. It would establish us squarely as the explorers of the South, and nobody could complain of that.”

On occasion, he soared intellectually: “. . . Christ alone—of all the philosophers, Magi, etc.—has affirmed, as a principal certainty, eternal life, the infinity of time, the nothingness of death, the necessity and the *raison d’être* of serenity and devotion. He lived serenely, *as a greater artist than all other artists*, despising marble and clay as well as colour, working in living flesh. That is to say, this matchless artist, hardly to be conceived of by the obtuse instrument of our modern, nervous, stupefied brains, made neither statues nor pictures nor books; he loudly proclaimed that he made . . . *living men*, immortals.”

Vincent went through periods of hyper-religiosity, which is symptomatic of manic-depression: “Theo, your brother has preached for the first time, last Sunday, in God’s dwelling . . .

“And in my opinion I am quite right in this, because I tell myself that in the years gone by, when I should have been in love, I gave myself up to religious and socialistic devotions, and considered art a holier thing than I do now.

“Why is religion or justice or art so very holy?”

Also, he showed extreme irritability: “. . . Involuntarily, I have become more or less a kind of impossible and suspect personage in the family, at least somebody whom they do not trust, so how could I in any way be of any use to anybody? Therefore, above all, I think the best and most reasonable thing for me to do is to go away and keep a convenient distance, so that I cease to exist for you all.”

And emotional violence: “. . . On Christmas day I had a violent scene with Father, and it went so far that Father told me I had better leave the house. Well, he said it so decidedly that I actually left the same day.

“Was I *too* angry, *too* violent? Maybe—but even so, it is settled now, once and for all . . .”

And agitation: “I do not remember ever having been in such a rage in my life. I frankly said that I thought their whole system of religion horrible, and just because I had gone too deeply into those questions during a miserable period of my life, I did not want to think of them any more, and must keep clear of them as of something fatal.

“. . . What am I in most people’s eyes? A nonentity, or an eccentric and disagreeable man—somebody who has no position in society and never will have, in short, the lowest of the low. Very well, even if this were true, then I should want my work to show what is in the heart of such an eccentric, of such a nobody.

“For the last three weeks already I have not felt quite so well—all kinds of little troubles arising from having caught a cold, and also from nervousness.

“One must try to conquer such a thing, and I felt it would get worse if I did not get a change.”

And alcohol abuse: “. . . Every day I take the remedy, which the incomparable Dickens prescribes against suicide. It consists of a glass of wine, a piece of bread

with cheese and a pipe of tobacco . . . I try to avoid everything that has any connection with heroism or martyrdom; in short, I do my best not to take the lugubrious things lugubriously . . .”

The letters to Theo reveal that Vincent’s intellectual capabilities did not deteriorate over time, which is also suggestive of manic-depression. And he definitely had long periods of highly lucid functioning: “There are two ways of thinking about painting, how not to do it and how to do it; *how to do it*—with much drawing and little colour; *how not to do it*—with much colour and little drawing.

“And my aim in life is to make pictures and drawings, as many as I can.

“ . . . What is called Black and White is in fact *painting in black*, meaning that one gives the same depth of effect, the same richness of tone value in a drawing that ought to be in a painting.

“ . . . What struck me most on seeing the old Dutch pictures again is that most of them *were painted quickly*, that these great masters, such as Frans Hals, a Rembrandt, a Ruydasel and so many others—dashed off a thing from the first stroke and did not retouch it very much.”

Vincent probably pursued his painting as a form of therapy, aiding him to stay balanced, “. . . Of course my moods change, but the average is serenity. I have a firm *faith* in art, a firm confidence in its being a powerful stream which carries a man to a harbor, though he himself must do his bit too; at all events, I think it such a great blessing when a man has found his work that I cannot count myself among the unfortunate . . .

“ . . . When I am at work, I have unlimited faith in art and the conviction that I shall succeed; but in days of physical prostration or when there are financial obstacles, I feel that faith diminishing, and a doubt overwhelms me, which I try to conquer by setting to work again at once.

“ . . . So I go on like an ignoramus who knows only this thing: ‘*In a few years I must finish a certain work.*’ I need not rush myself too much—there is no good in that, but I must work on in complete calmness and serenity, as regularly and fixedly as possible. The world concerns me only insofar as I feel a certain indebtedness and duty toward it because I have walked this earth for thirty years, and, out of gratitude, want to leave some souvenir in the shape of drawings or pictures—not made to please a certain taste in art, but to express a sincere human feeling.

“I do not feel faint as long as I am painting, but in the long run those intervals are rather too melancholy, and it grieves me when I don’t get on, and I am always in a bad fix.

And visual hallucinations or enhancement of colors: “*Much, everything* depends on my perception of the infinite variety of tones of one *same family*.

“ . . . The sky clear, luminous, not white, but lilac which can hardly be deciphered, white shimmering with red, blue and yellow in which everything is reflected and which one feels everywhere above one, which is vaporous and merges into the thin mist below—harmonizing everything in a gamut of delicate gray.

“ . . . the unbearable hallucinations have ceased, and are now getting reduced to a simple nightmare, in consequence of my taking bromide of potassium, I think.

He painfully accepted searching for remedies: “. . . I think Dr. Gruby is right about such cases—to eat well, to live well, to see little of women, in short to arrange one’s life in advance exactly as if one is already suffering from a disease of the brain and spine, without counting the neurosis which is actually there. Certainly that is taking the bull by the horns, which is never bad policy. And Degas did it, and succeeded. All the same, don’t you feel, as I do, that it is frightfully hard?

Vincent slowly deteriorated while he fought with his internal demons and sought help: “As for myself, I am going to an asylum in St Remy, not far from here, for three months. I have had in all four great crises, during which I didn’t in the least know what I said, what I wanted and what I did . . .

“ . . . I have been “in a hole” all my life, and my mental condition is not only vague *now*, but *has always been so*, so that whatever is done for me, I *cannot* think things out so as to balance my life. Where I *have* to follow a rule, as here in the hospital, I feel at peace . . .”

In a losing battle he felt he was losing himself—becoming disconnected. Hopelessly he would fall back into a black hole: “. . . It is just in learning to suffer without complaint, in learning to look on pain without repugnance, that you risk vertigo, and yet it is possible, yet you may even catch glimpse of a vague likelihood that on the other side of life we shall see some good reason for the existence of pain, which seen from here sometimes so fills the whole horizon that it takes on the proportions of a hopeless deluge. We know very little about this, about its proportions, and it is better to look at a wheat field, even in the form of a picture . . .

“ . . . I have given up the hope that it will not come back—on the contrary, we must expect that from time to time I shall have an attack. But then at those times it would be possible to go to a nursing home or even into the town prison, where there is generally a cell.”

And perhaps he shows some delusional signs or psychosis: “. . . Yet even then I do not think that my madness could take the form of persecution mania, since when in a state of excitement my feelings lead me rather to the contemplation of eternity, and eternal life.

“But in any case I must beware of my nerves, etc . . .”

To Theo he also chronicles his recoveries: “. . . It astonishes me already when I compare my condition today with what it was a month ago. Before that I knew well enough that one could fracture one’s legs and arms and recover afterward, but I did not know that you could fracture the brain in your head and recover from that too.”

Some of his statements are suggestive of schizophrenia: “. . . These last three months do seem strange to me. Sometimes moods of indescribable mental anguish, sometimes moments when the veil of time and the fatality of circumstances seem to be torn apart for an instant.

“I still have a sort of ‘what is the good of getting better?’ feeling about me, even in the astonishment aroused in me by my getting well, which I hadn’t hoped for.”

Shortly after slicing off his left ear, Vincent was diagnosed with epilepsy. The doctor who diagnosed him was probably influenced by another patient who had recently cut off his own ear. Vincent amputated his ear after a violent fight with Gauguin. He thought he heard a voice through that ear telling him to kill Gauguin. He commented. “If thine eye offend thee, pluck it out!”<sup>79</sup>

He could not remember what he had done, but still, he tried to reach out, “. . . I write to you in full possession of my faculties and not as a madman, but as the brother you know. This is the truth. A certain number of people here (there were more than 80 signatures) addressed a petition to the Mayor, describing me as a man not fit to be at liberty, or something like that.

“The commissioner of police or the chief commissioner then gave the order to shut me up again.

“Anyhow, here I am. Shut up in a cell all the livelong day, under lock and key and with keepers, without my guilt proved or even open to proof.

Finally, Vincent headed north to Auvers hoping to find a peace that eluded him and which would allow him to paint. “. . . I have found a true friend in Dr. Gachet, something like another brother, so much do we resemble each other physically and also mentally. He is a very nervous man himself and very queer in his behavior . . . I painted his portrait the other day, and I am also going to paint a portrait of his daughter, who is nineteen years old. He lost his wife some years ago, which greatly contributed to his becoming a broken man.”

In one of his last letters to Theo a few days later, “. . . They are vast fields of wheat under troubled skies, and I did not need to go out of my way to express sadness and extreme loneliness.”

~

A few days later, Vincent is sitting at Dr. Gachet’s table with his daughter Marguerite. They are in the middle of lunch. He is aware that it is Sunday, July 27, and he is concentrating on this fact with all his will power. He finds this exercise helpful to hide from others the terrible darkness that has descended upon his soul. But as hard as he tries not to remember his hallucination of the morning, it keeps creeping into his vision, obliterating everything else. He can see his face in the mirror, his skin in patches of pink and red, a circle of small pimples on his cheek, shining, ready to explode, yellow puss on the tip of each. He watches fascinated as his beard turns to leather, as the patches on his face become a tough mask of thick,

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<sup>79</sup> Alice W. Flaherty, *The Midnight Disease*.

dried leather patches alternating white and red, sown together with a thick, black, course thread. His face frozen into this bizarre mask.

The pimples are bright yellow, spilling green puss. His eyes, his only means of expression, dart from side to side, up and down in terror. His green eyes stare back at him and reflect the blackness of his madness. His stare fixes on his own pupils—he tries to see into himself, into the darkness of his soul.

Then the blood, a deep wine color, starts to emanate right above his left eyebrow, oozing through the dry leather patch that is now his skin. He takes a hand up to his eyebrow to catch the blood so it doesn't drip into his eye. His skin feels like tough dried leather; the blood thick and sticky. More blood oozes from his forehead and then through all his face, the blood seeping through the leather patches, staining the white and the red. He tries to catch the blood in both hands. It spills over; he can't stop the flow!

"If you will excuse me, I have to get back to work," Vincent addresses the Gachets calmly, stands up, and pushes his chair away from the table. He turns and leaves the dining room. Marguerite stands up, but her father restrains her by placing a hand on her arm.

"Vincent!" Marguerite calls after him, but there is only the response of the door closing behind him.

Vincent walks quickly to his room at the café nearby. "It is back. The madness is back! Not again, not again, not again. I must act quickly before it is too late." He goes to his room, lifts his mattress and pulls out the gun. He checks that it is loaded. He hides the gun in his jacket.

Vincent grabs a yellow towel and tries to clean the blood oozing from his face. He can feel the blood dripping down his forehead and cheeks, but the towel remains yellow. He rubs his face frantically with the towel as he feels more blood running down his face. He starts running towards the wheat field he has been painting of late.

He breathes deeply. His forehead feels on fire. "Don't think too much," he repeats to himself. "Just do it. Quickly. It will stop the blood." The fear grows until it is too much to bear, then, just as suddenly dissolves. In its place is a steely determination. "Bluish-gray, silvery cold," comes to his mind. He slowly pulls the gun from his jacket, puts it to his breast, takes a deep breath. As his chest expands, the barrel of the gun, unnoticed by Vincent, points slightly above the heart. He grits his teeth and pulls the trigger. He falls back and loses consciousness. The bullet has missed the heart but is lodged critically close.

He opens his eyes. He can tell by the sunlight it is late afternoon. He sits up, looks at his chest and slowly staggers to his feet. "I must get to my bed. This is ridiculous. I botched it. I can't do anything right. I must go and lie down." Mme. Ravoux watches him through the window as he approaches the café walking drunkenly. As he comes in and side steps around her, Mme. Ravoux asks solicitously, "We were waiting for you for dinner. Can I do anything for you? Are you all right?"

“Oh, it’s nothing, I am wounded,” Vincent replies, staggering up the stairs to his room. Mr. Ravoux immediately goes to see Vincent.

Vincent lies in bed and shows him the gunshot wound. “I shot myself . . . I only hope I haven’t botched it.” Mr. Ravoux runs out to get Dr. Gatchet.

When doctor Gatchet arrives, Vincent is lying on his bed, calmly smoking his pipe. “Don’t worry Vincent, you’ll be fine. I’ll take care of you.” Dr. Gatchet examines the chest wound. “It’s not bleeding much.”

“I will do it all over again, so don’t bother.” Vincent smiles and continues smoking calmly. “Don’t call my family, I don’t want them involved.” Dr. Gatchet doesn’t argue. “It is just as good that I die. I am no good.”

Dr. Gatchet makes him as comfortable as possible. He knows that trying to dislodge the bullet could start a massive hemorrhaging which would mean a quick death. “Whatever you say, Vincent. I am just going to make you more comfortable.”

The next day, Theo is located in Paris. He comes to see his dying brother. Vincent tries to console him, “Don’t cry. I did it for the good of us all.”

“Don’t say that. You’re going to be fine, you’ll see. You have a good chance of recovering.”

Vincent shakes his head slowly, “La tristesse durera (the endless sadness).” The two brothers sit in silence, holding hands. Later that night Vincent speaks out, “Theo, forgive me for all the troubles and all the expenses I have caused you. Hopefully my paintings will be worth a little more now.”

He starts moving in and out of consciousness. He smiles at the thought, “I want to be a writer, a great writer. Why did I waste so much time painting? Writing should be easier . . .” Vincent wants to laugh, but he lacks the strength.

“What is it, Vincent?”

Vincent smiles, closes his eyes, the thought, “to write, it should be easier . . .” slowly vanishing.

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When Mitch was home in Carmel or at Santa Barbara, he went surfing every time he could. He told me the cold water had a soothing effect on him. When I was young, whenever my parents took me to Acapulco, I loved to body surf. There the water was forever warm. I never learned to surf on a board, even though I always wanted, and was glad that Mitch liked it so much. For me, the Californian waters were too cold.

As a young boy, I studied the wave patterns in most of the beaches in Acapulco, and I came to know intimately how the contours of each beach affected the rise and fall of the waves. I discussed with Mitch the different types of waves. Inside the bay, for the most part, the waves are very small, from one or two feet to perhaps five or six feet in height. There was only one beach inside the bay where, when conditions were right, the size of the waves would be close to the size that you normally would encounter on the beaches outside the bay facing the open ocean.

The beaches facing the ocean have much bigger waves, because the waves are undisturbed on their long journey across the Pacific Ocean. Occasionally, I have seen waves twenty-two feet high; more common are waves in the range of thirteen to seventeen feet.

When I was about nine years old, two brothers, Danny and Ricky, who lived nearby in Mexico City and were my best friends, would invite me to go to Acapulco with their family. They would generally go twice a year. Back in those days, we had two weeks vacation in Easter and two weeks vacation in September. School would be in session all summer, but we had December and January off between school years.

Their parents rented a four-bedroom house above Mimosa beach, a private beach. This beach faces the open sea, and its waves are very similar to the ones at the Pie de la Cuesta, a well-known beach north of Acapulco, famous for the sunsets and the big surf. Because the terrain under the ocean rises quickly, the waves approach the beach, suddenly lift up, then break. The orientation of the waves in relation to the beach causes each wave to approach in a continuous front and to break practically in one movement. This kind of wave isn't good for surfing, because there isn't any time to get going on the wave before it crashes overhead. With enough practice, however, you can do some body surfing. For the most part, it is just plain fun to navigate and survive the pounding of the waves.

As I look back, I don't know how we were allowed to swim in the ocean unsupervised so many hours daily. We would go down about one hour after breakfast, and more often than not, we would swim until it was dinnertime.

As we got better over the years, we would invent different games to play in the ocean. One of them consisted in sitting in old inflated inner tubes, holding on to each other, and letting the currents of the waves take us wherever. It was a type of chicken game. The winner would be the last one not to jump off the inner tubes and dive to avoid being mangled by the breaking waves. If we all stayed on our inner tubes and got mangled together, the first one to get to an inner tube would jump on it, and the others had to get a tube, bring it close to the first one, and jump on it and start again.

We had timed the pounding surf after it broke to last about fifty seconds. We all could hold our breaths at least one minute, so as long as we weren't caught by surprise, we would all surface from the rough rides among the foam. We were always careful to count heads when we came up, and occasionally when someone didn't come up with the rest of us, we'd all dive and start looking for the missing person. But normally, just a few seconds after we all came up, the missing head would pop up laughing among the foam in some unexpected place, reflecting the fact that the underwater ride had been longer than expected.

On Easter week, 1964, when I was twelve, Danny and I were in Playa Mimosa alone, playing in the waves with our inner tubes. There were some rocks sticking out of the ocean, about 600 yards from the beach. We used them to estimate the size of the wave, as well as how far out it was going to break, by observing how high on the

rocks the waves would rise. This time, we both saw a wave rising far behind the rocks, probably about a mile out. This one was going to be very big!

I turned and looked at Danny; he was about ten yards behind me, closer to the beach. I said urgently, "Hurry, we have to get in!" I wasn't sure if he could make it.

He yelled back, "I can't make it. I'm going out," meaning that he didn't think he could make it before the wave broke, it would pound him severely, so he was better off retreating to the beach. This was always hard to do, because the ocean rushed down the incline of the beach to meet the oncoming wave.

I, on the other hand, estimated that if I swam as hard as I could, assisted by the sucking of receding water, I would just make it over the wave before it broke. I started swimming as fast as I could towards the rising wave. An error in judgment, or even hesitation, on the part of either one of us, could prove fatal. I felt, more than I thought, I was committed; I could not get out of the water. The rushing waters meeting the oncoming wave were too strong. I was locked into going in. Still, I was amazed that his estimate matched mine. I might make it, whereas he would surely not. He was locked into retreating.

"Go," I encouraged. We both swam in opposite directions fighting for dear life.

I had my inner tube under my chest as I paddled furiously with my arms and kicked with my feet. The wave kept rising, and the amount of water receding from the beach was increasing unbelievably. I had never seen anything like it. I was getting close to the rocks, now about one hundred yards from me, and the approaching wave kept rising behind them, foam starting to break at the top. The wave must have been about thirty-five feet high. The top fifteen feet was covered with thundering foam, as the top was breaking and couldn't support itself. I felt that I might not be able to get through such a big curl of foam. I had a nagging feeling that I was doomed.

If Danny hadn't been able to make it out, he was surely doomed. I turned towards the beach to see if he had escaped. I was amazed at the sight. The six hundred yards that were normally covered with water were bone dry. I could see the exposed rock formations that we had only guessed at before by the shadows they normally made below the surface. I could see Danny on the beach in the distance below me.

I turned to see the looming wave, and simply couldn't fathom how I would be able to swim up such a steep surface. The last amount of water that was rushing to meet the wave pushed and carried me swiftly up to the top. I was hanging on to my inner tube, literally for dear life. I managed to burst through the thundering foam at the top, and the wave passed me and broke. After the wave broke, the foam and water that erupted and fell on top of me threatened to drown me. I knew I was on the surface of the water, holding on to my inner tube, but the foam was so thick I couldn't breathe. With one hand I waded desperately trying to remove the foam above me. Finally, I felt the air and gasped relieving my burning lungs.

The beach was about eighty yards wide and then a steep hill went up at an angle of about fifty degrees. I saw that the wave had swept past the entire beach and rushed up the slope of the hill. Danny was up in a tree about ten yards above the beach. He

was waving at me. I waved back. As I started my long swim back to the beach, I kept looking behind my shoulder, fearing that another wave would show up. Normally the big ones come in series of three to five waves.

Fortunately, nothing else came. Everything was normal. When I got to the beach, Danny and I looked at each other, and he said, "We are so lucky to be alive."

"I know. I think we should go to the pool," I answered. He agreed without argument. It was the first time in years that we quit the ocean voluntarily. Later we found out we had survived the tsunami generated by an 8.4 earthquake in Alaska the previous night (7:36 PST).

A few years later, when I was nineteen, I was body surfing in Pie the la Cuesta, a beach a few miles from Playa Mimosa. I was practicing a move that the local beach guys had taught me. In this move, you let the water suck you in towards the rising wave feet first, floating on your back. If you time it correctly, the top of the wave, as it curls and breaks, takes hold of your feet and drives them over your head in a backward flip. As the wave pulls your feet, the rest of your body follows and, as the wave breaks, the force of it sends you straight down, with your back towards the beach. You land harmlessly, feet first into the sand as the wave breaks over and past you and continues its journey towards the beach.

The effect, as seen from the beach, is that observers can clearly see you upside down in the middle of the wave as it rises right before it breaks. Then, after the wave breaks, if you hold your breath and don't surface, you can lead the beach observers to believe that you have been completely mangled. Of course, when you don't time this move correctly, the wave grabs you and pulls you upside down, head first on a very rough run, bouncing and hitting the sand for the full ride. It is not a pleasant experience.

On that day, I got a little overconfident and stopped paying attention to the incoming waves. Then I saw the first of a series of big ones. I was too close to the beach to get to it before the wave broke (the bigger the wave the further in it breaks), and I was too far in to try to get out. I was in the worst possible place. I struggled as best I could to stay as far away from the breaking wave as possible. It was a twenty-two footer. As it broke in front of me, it exploded and hit me full force. The wave took me down, then suddenly jerked me up, then took me down again. I was slammed into the sand. My right shoulder hit first, the impact knocked the wind out of me. I didn't realize it then, but I had separated my shoulder. Jerked around like a ragged doll, I lost all sense of what was up or down: the light seemed the same in all directions. I started to see stars; I was running out of breath; and the ride was showing no signs of abating.

I tried to move my arms and swim, only to hit the sandy bottom again. My lungs were burning. My limbs were not responding, memories flashed quickly through my head, fear, more stars in my field of vision. Suddenly, my vision faded, the blackness formed a narrowing tunnel, and in the middle there was a bright light. The bright light got smaller, and as it did, a tremendous sense of calm and peace overcame me. I looked at the light; it seemed to be getting smaller, but perhaps

closer. But the peace was all encompassing. The triumphal march into nothingness, death, loomed close by. Then suddenly my head broke the surface and air poured into my lungs.

I had just stared death in the face. As oxygen levels decrease, the emotions start to shut down first, then the senses. The sensation of complete peace is simply the absence of emotions of any kind. The tunnel vision and the light that many people near death describe is just how dying feels as the senses are being slowly shut down in the absence of emotions!

~

After going through many of the writings that Mitchell saved—term papers, letters, personal diaries, anecdotes—I found only a couple that could relate to his mental illness. One of these I find interesting and perhaps revealing, even though I am not sure when it was written, I am guessing sometime in 1999, in his freshman year at college. I convey it here, as I feel that in some small way, it might give us a window into his turmoil. At the same time I am not sure if he is being literal or metaphorical, but probably both.

*My face landed on the satin covered pillow; was buried and surrounded and smothered in material. I lay there silently waiting for the slight transition into dreamland.*

*Wickedly conscious and anxious to fall asleep, I awaited in the bitter darkness of a hotel suite. Dirty little grunts surfaced on my face. I was going to be tough, I told myself, out of desperation in the black and gloomy single-bed room.*

*The basic human need for love was violently present, forcing my tear valves to secrete full throttle. I hugged the blanket, so empty and not her. I missed Katie passionately as vascular thorns pierced me fiercely.*

*And then I closed my optics.*

*A whole rainbow of colors; an intense injection of memories displayed itself, rang true, like cards shuffling—only being able to catch a glimpse of the hues. The thoughts, realities, and insights evaporated inside me, sizzled and put me to . . . (there might be a page missing) . . .*

*I stopped in my step and watched as a wave of stairs formed ahead of me. It enveloped me the same way quicksand devours traveling gypsies. Sinking through space, time, and concrete I found myself in a gigantic hourglass. Staring into the hourglass, with long hair and clear blue eyes was a younger version of me. I could see my replica but he couldn't see me. Dear reader, understand this: I was now in a 1965 Mustang traveling seventy miles per hour along the coast of California. To my right were vast mountains covered with dead brush and weeds. Cows fed their five stomachs with any shrubbery they could obtain. The road kept passing under the tires and off in the distance there were puddles of water in the road. When I reached the water I realized it was only a reflection caused by hot roads.*

*Here, now, and always there would be pain and suffering. To both sides of me there were zombies driving two-ton hunks of steel with tires. The blind look on their faces manifested some sort of task they were going to accomplish.*

*I drove across a bridge, connecting two tracts of land together. Giant cliffs off in the distance laughed at me. Twelve mountains off in the distance, each with sixty trees and ordered from large to small seemed to get closer as time elapsed. Some days it takes all time guessing why I can't figure it out.*

*Suddenly the quicksand spit me back with intense vigor. I landed back on that sidewalk from my childhood. It was daytime now, yet I still felt the tremors and mystery of the night. I threw up my hand towards the sky in a wild gesture of interrogation. The sky dripped its baby-blue firmament on my face and I was now under water. Reluctant to bring myself to the surface, I snorkeled all around checking out the surroundings. I was in a navy-blue painted pool, water cold as ice.*

*Because it is imagination that keeps the soul jubilant it's the safe place of refuge inside our memory that helps us face the wicked world!*

*"Tell me about the things you want to say. Don't act so angry, I here for you. Don't think I don't care. If you were here I would squeeze you tightly."*

*Why would you do that to yourself? You said you would, you did, I love, you know it. Things won't change.*

~

Caution must be used when considering a therapy for a particular psychiatric problem. Not all therapies are successful for everything, and not all people respond equally to the same therapy. Therapy is a process that attempts to change the way a person thinks, feels, and/or acts.

For the most part, more and more, psychiatrists tend to try to solve the problem with medications; a fifteen-minute consultation, diagnosis, prescription, and further visits to tweak the medication. On the other hand, psychologists can't prescribe medications, and concentrate on therapies based on talking and addressing body imbalances, flows, thoughts, energies or feelings. Curiously, for the most part, psychiatrists will only concern themselves with the patient's subjective view of "are you feeling better" in order to ascertain whether to increase or decrease a dosage or add or subtract a particular medication. And the majority of psychologists will not concern themselves with the medications, much less dosages, that their patients are taking. They only concern themselves with the measurable results, even if these are subjective, to determine how efficacious is their therapy. Of course, one is billed for every visit, whether the prescribed therapy is working or not.

Psychiatrists and psychologists should understand that therapy and medication are part of the tools available to treat mental illness. Yet, there seems to be a split in psychiatry. How is it possible that medications and therapies are so often not considered in unison? In the words of William Normand, a practicing psychoanalyst, "Psychiatry has gone from being brainless to being mindless." The answer, perhaps, is economic. First, to receive a degree in psychiatry requires many more years of studies than a degree in psychology. Psychologists charge by the hour, psychiatrists by consultation, generally fifteen minutes, in general, reflecting the years of study.

Psychiatrists originally did a lot of talking and therapy; it was the only game in town, as the medication arsenal was almost nil. However, as more and more medications became available, they realized how much more money could be made by prescribing medications and were happy to relinquish the talking to the psychologists. The psychologists, in turn, were happy to get all this business previously dominated by the psychiatrists. And, since both know that what the other is doing only works partially in many cases, if at all, they don't concern themselves with it. Considered as proof by many of them, that either medication or therapy is not working, is the fact that the patient is trying to supplement one or the other. There are some who will actively encourage both, medication and therapy. But to increase the chances of success, it is crucial to use both together. Part of therapy should be an education on the chemistry of the mental disorder and on what the medication is expected to do and of how it works.

When I had a problem with a cervical disk, the disk was removed surgically and the vertebrae were fused with a titanium plaque and screws. I was in the hospital about twenty-two hours. The bill was close to \$42,000.00. My neurologist charged close to \$8,000.00 for the one hour and twenty minute operation. I saw him a few minutes later that day. It is evident that he is a busy man, and that his time, financially speaking, is much better used in the operating room than talking to patients. At approximately \$6,000.00 per hour, he is not going to waste time talking to patients or holding their hands. Let someone else do that. Many psychiatrists, likewise, let the psychologists do the talking and hand holding.

New theories and therapies come into vogue all the time, and then drop into oblivion. The history of psychiatry is strewn with many ideas and concepts that have gone by the wayside. Concepts once held to be truths are discounted later as myths or superstitions. The more durable theories—neuropsychiatry, psychoanalysis and behaviorism—differ theoretically as well as in experimental and clinical approaches. Despite their differences, they share one basic assumption: hidden forces over which he has no control victimize the emotionally disturbed. These three schools maintain that the source of the patient's disturbance lies beyond his awareness; they gloss over his conscious conceptions and his specific thoughts and fantasies.

Emotions are triggered to produce a certain type of behavior. The caudate nucleus is responsible for activating all memories and modes of thinking associated with each emotion as well as activating emotions when certain modes of thinking are detected in order to produce a quick response. The caudate nucleus is a two way street. When I think of Mitch, different emotions are triggered depending on how I think of him; sadness, joy, nostalgia, yearning.

Each emotion in turn has its own particular circuits in the brain. The pathology arises when emotions are triggered for no apparent reason at all. Emotional disturbances may be present when these circuits are activated for wrong reasons or lock on and can't be turned off as needed. The wrong emotions can be triggered when thinking slows down or speeds up incorrectly for one reason or another.

Other serious problems arise when the attentional systems are perturbed, either because they are not working synchronously, or stop functioning normally. In these latter cases, emotions are put into the wrong context, producing improper responses.

Any therapy, to be successful, has to address these points. Most therapies touch on these points tangentially or indirectly and their success will be in proportion to this.

Coming from the nineteenth-century doctrines of physicalism, traditional neuropsychiatry tries to find biological explanations, such as chemical or neurological abnormalities, and applies drugs and other physical measures to relieve the emotional disorder. Neuropsychiatry is interested in a person's thoughts and feelings primarily as a diagnostic tool. Abnormal ideation and feeling states are regarded as manifestations of an underlying physical process or as a clue to a disturbance in neurochemistry. The neuropsychiatrist with his confidence in biological causes will administer drugs or use physical treatments like electro-shock therapy.

Psychoanalysis, which also has its underpinning in the nineteenth century, attributes the person's neurosis to unconscious psychological factors: the unconscious elements are sealed off by psychological barriers that can only be penetrated by psychoanalytical interpretations. It attempts to get to the cause of a maladaptive condition, often by making unconscious (repressed) memories conscious. This is a long, arduous, slow process. Psychoanalysis might be good at explaining things, but it is not efficient at changing them.

Psychoanalysis regards conscious thoughts as a disguised representation of unconscious conflicts that are presumably causing the problem. The patient's explanations are considered as rationalizations, as coping defense mechanisms. As a consequence, the person's ideas, his reasoning and judgements, his common sense solutions are not taken at face value; they are treated as clues to concealed components of the mind. Psychoanalysis attempts to cure the neurosis by uncovering hidden (repressed) ideas and wishes and by translating the conscious thoughts and fantasies into their presumed symbolic meanings.

Psychoanalysis is less accepted today than in the past. Sometimes it requires four or five sessions a week for up to six years. There are other related therapies called Psychoanalytic psychotherapy, in which the therapy is less frequent on a weekly basis, but can still last up to three years. And more importantly, psychoanalysis has been proven to be quite ineffective to correct most emotional disorders.

Behavior therapy, whose roots can be traced even farther back to the eighteenth century, regards the emotional disturbance in terms of involuntary reflexes based on accidental conditionings that occurred previously in life. According to behavioral theory, the person cannot modify these conditioned reflexes simply by knowing about them and trying to will them away, so he requires the application of "counter conditioning" by a good behavior therapist. Practitioners of this therapy have downgraded thinking because in their zeal to be an exact science like physics, they

reject data and concepts derived from man's reflections on his conscious experience. Only directly observed behavior is used in forming explanations. The thoughts, feelings and ideas that are only accessible to the person experiencing them *are not* considered valid data!

The behavior therapist, with his faith in the deterministic role of the environment, attempts to cure the neurosis through rewards and punishments, exposing the patient by degrees to situations or objects that are causing the disturbance. Behavior therapy is based on the principle of counter conditioning, which states that a person can overcome maladaptive anxiety elicited by a situation or an object by approaching the feared situation gradually and in a psychophysiological state that inhibits anxiety.

Behavior therapy seeks to alter maladaptive conditions (basically, bad habits) through the learning principles of behaviorist psychology, like extinction (aversion therapy to eliminate a habit) and positive reinforcement. Another technique is relaxation training to try to produce opposite physiological effects to those of anxiety: a slow heart rate, increased peripheral blood flow, deep slow breathing and the like. These therapies work best for specific phobias, obsessions and compulsions, and certain sexual disorders.

For anxiety and psychotic disorders, there are a number of different group therapies that use different approaches. Although, their success rate is low, they mainly help to reduce the severity of the symptoms. The sessions seem to work best for helping to restore health when facing extreme normal reactions, like grieving or overcoming stressful situations. There is Supportive, Analytically Oriented, Transactional Group Therapy and Behavioral Group Therapy. Sessions vary from once to three times a week for a few months to up to three years.<sup>80</sup>

Cognitive therapy has its roots thousands of years ago, perhaps to the time of the Stoics, who considered that a man's conceptions (or misconceptions) of events rather than the events themselves are the key to his emotional disturbances. There is a supposition that the person's consciousness is a key to understanding and solving his psychological disturbance within the scope of his own awareness. Cognitive therapy takes as a starting point the notion that dysfunctional mental states (beliefs, attitudes, ideas) contribute significantly to psychopathology, and that the pathological conditions can be altered by helping the patient to identify and correct the beliefs. Cognitive therapy suggests that the person's problems are derived from distortions of reality based on erroneous premises and assumptions. It assumes that these incorrect conceptions originated in defective learning during the person's cognitive development.

Regardless of their origin, the treatment is simple: the therapist helps the patient unravel his distortions in thinking and to learn alternative, more realistic ways to formulate his experiences. Cognitive therapy works well for dysthymia and

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<sup>80</sup> Harold I. Kaplan & Benjamin J. Saddock, *Synopsis of Psychiatry*.

nonendogenous depression. It is a short-term structured therapy that uses active collaboration between the patient and the therapist to achieve therapeutic goals. It places the patient in the role of scientist and uses his already available tools and experiences to approach problems that seem insoluble to him.

The cognitive approach includes four processes: (1) eliciting automatic thoughts, (2) testing automatic thoughts, (3) identifying maladaptive underlying assumptions, and (4) testing the validity of maladaptive assumptions. Automatic thoughts are cognitions between external events and the person's emotional reaction. The therapist then teaches the patient how to see the validity of his or her thoughts. The goal is to reject inaccurate or exaggerated automatic thought with careful consideration. As the patient repeatedly does this, patterns become apparent, representing rules or maladaptive general assumptions that guide the patient's life. Ultimately the validity of the maladaptive assumptions must be tested and corrected when necessary.

Cognitive therapy has been applied mainly to depression (with or without suicidal ideation); it has also been used with other conditions, such as panic attacks, obsessive-compulsive disorders, paranoid disorders, and somatoform disorders.<sup>81</sup>

One of the therapies with the best record for curing depression is cognitive-behavioral therapy. This type of therapy combines elements of both behavioral and cognitive approaches. This is a form of psychodynamic therapy based on emotional and mental responses to external events, in the present and in childhood with tightly focused objectives. This approach tries to force the mind to think in certain ways, and by doing so, change one's reality. The therapist traces the sequence of events that have led the patient to their present difficulties. The patient then learns why certain events are depressing and tries to free himself of inappropriate responses. The patient is taught to neutralize his "automatic thoughts". Feelings, from this point of view, are not direct responses to the world: what happens in the world affects cognition, and cognition in turn affects feelings. If the patient can alter the cognition, then he can alter the respective moods.<sup>82</sup>

This method fails to understand that emotions dictate specific modes of thinking when they assume that faulty thinking is at the root of the wrong emotion. However, they are correct in assuming that changing a mode of thinking changes the underlying emotions.

Another therapy with similar rates of success in treating depression is known as interpersonal therapy (IPT). This approach was formulated by Gerald Klerman and his wife, Myrna Weissman. IPT focuses on the immediate reality of current day-to-day life. It fixes things in the present. It tries to teach the patient how to make the most of whatever he is; it does not attempt to make the patient a deeper person. It is

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<sup>81</sup> Aaron T. Beck, *Cognitive Therapy*

<sup>82</sup> Andrew Solomon, *The Noonday Demon*.

a short-term therapy with boundaries and limits. It assumes that stressors trigger depression, and that these can be cleaned up through well-advised interaction with others.

Treatment is done in two stages. In the first, the patient is taught to understand his depression as an external affliction and is informed of the prevalence of the disorder. His symptoms are sorted out and named. He assumes the role of the sick one and identifies a process of getting better. The patient catalogs his present relationships, and with the therapist, defines what he gets from each one, and what he wants from each one. Second, the therapist works with the patient to figure out what the best strategies are to elicit what is needed in the patient's life. Problems are sorted into four categories: grief; differences in roles with different relationships (what you give in relation to what you expect); states of stressful transition in personal and professional life; and isolation. The therapist and the patient establish a few attainable goals and decide how long to work toward them.<sup>83</sup> Through interactions with others, hopefully, emotional changes will be achieved. ITP indirectly uses the positive emotional attachments to produce positive thoughts and behaviors.

Other therapies derive from the idea of energy systems. Eden wrote that there are eight major systems: the aura, the chakras, the meridians, the Celtic wave, the basic grid, the five rhythms, the triple warmer, and the strange flows.

The energy that surrounds all living things is the aura. Bioenergy is said to enter the body through seven energy centers called chakras. Six are located along a line paralleling the spinal column, and the seventh is said to extend out of the top of the head. The chakras connect with the meridians and other energy levels. The meridian system is said to involve fourteen energy pathways: two central vessels that run vertically on the center of the front and back of the body, plus twelve primary meridians that exist bilaterally. Each meridian is said to have two channels of energy. One flows close to the skin and is presumably the one accessible to an acupuncturist and an energy psychotherapist. The other, flowing deeper inside the torso, passes through the organ with which it is associated. Along each of the meridians are the acupuncture points, some 365 in the twelve primary meridians alone. Most of these energy systems were developed in China and India thousands of years ago.

The main principles of energy psychology are the existence of a subtle energy system in all living things. This is manifested by energy flows and when the flows are blocked, disorders result; disturbing thoughts and emotions triggered by traumas affect the meridians. Each meridian is related to an organ, which in turn is related to a set of emotions. By treating the correct points in a meridian, the flow will be reestablished and the accompanying emotional disturbance will clear.<sup>84</sup>

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<sup>83</sup> Ibid.

<sup>84</sup> John G. Hartung & Michael D. Galvin, *Energy Psychology and EMDR*.

These energy therapies are emerging as the therapies of choice, partly because of the low rate of success of the other therapies, partly as a choice of last resort, and partly due to their success rate.

In the 1960's the chiropractor George Goodheart, building on the knowledge of manual muscle testing, developed applied kinesiology, and this was later mixed with meridian theory to promote health. In the 70's psychiatrist John Diamond, trained in applied kinesiology, discovered that the different meridians and their associated organs were related to different emotions.

Psychologist Roger Callahan, building on this work developed what came to be known as Callahan Techniques-thought field therapy (TFT). Later, in the 1990's these evolved into what is now known as Evolving Thought Field Therapy. Once the organ involved with the negative state is found, the practitioner treats the meridian rather than the organ itself. Using muscle testing he determines which points need to be tapped and in what order. He added a procedure called eye roll at the end of successful treatment.

Several variations on this have been developed. Gary Craig and Adrienne Fowlie suspected that all these complicated sequences were not necessary. In 2000, John Diepold developed an alternative to tapping. Acupuncturist Tapas Fleming developed another technique popular with energy therapists in 1993. This involves the patient and therapist touching simultaneously meridian points, a chakra and the occipital region of the head.

All these rapidly evolving therapies are known as energy psychology or energy therapy.

There are several methods and versions of energy treatments. According to some of these methods, some problems have several aspects, and not until the presenting one is cleared is an underlying one apparent and accessible to treatment. The patient must be thinking of the problem for it to be treatable. Treatment can be blocked by a number of factors, including neurological disorganization, psychological reversal, and energy toxin systems. Therapy is designed to address all this. Energy psychologists and acupuncturists believe that the meridian, chakra, and aura systems underlie affect, and are affected by cognitive, emotional, sensory, and chemical events. Energy practitioners believe they are intervening at the most fundamental level.

The rate of success of these energy therapies increases when combined with eye movement desensitization and reprocessing (EMDR) psychotherapy.

Francine Shapiro developed EMDR in the late 1990's. Though applied to most disorders, EMDR is recommended particularly for treatment of traumatic memories and the mental, emotional, behavioral, and interpersonal problems associated with traumatic experiences.

In 1987 Shapiro noticed that as she thought about something disturbing, her eyes spontaneously made rapid movements from lower left to upper right, which seemed to cause the thought to lose its disturbing quality. Most people, however, need help in keeping their eyes moving to achieve the same effect. Shapiro

developed methods by moving her hands and asking her patients to follow with their eyes. Subsequently other forms of bilateral, alternating stimulation in addition to the eye movements have been used effectively, but eye movement has been retained in the name of the method. Shapiro noticed that most of the disturbing thoughts her clients reported were related to anxiety, so she used the word desensitization to describe the anxiety reducing effects of the eye movement. Shapiro added strategies to resolve symptoms further and taught her clients coping skills.

These are the following principles of EMDR: (1) People can heal themselves. Each person has a natural ability to process disturbing life events to the point where these events become simple memories; (2) the self healing system can become blocked or “stalled”; (3) blocked processing affects individuals in past, present and future time. (The unresolved past and present symptoms, then, interfere with future functioning. EMDR follows a three pronged treatment approach which involves healing the past, removing the present symptoms, and addressing possible future manifestations of the issue.) (4) EMDR reactivates the self-healing system with eye movements and other bilateral alternating stimulations.

The practitioner focuses on helping the patient: (a) pay attention to the past trauma as they notice the present resources available; (b) reactivate the self healing system; (c) with bilateral stimulation maintain and accelerate the self healing system as the patient revisits the trauma long enough to reprocess it adaptively; (d) allow the adaptive and accelerated processing to proceed in a positive, curative direction assisted by the self healing principle; (e) insure self healing remains active after EMDR and is available to manage future traumatic events. As patients revisit the traumatic past, they often report re-experiencing an event in its original form, with similar intensity, emotions, thoughts and memories. These “abreactions” surprise patients because of the unexpected intensity of the memory as well as other associated memories (called childhood folders). Abreactions are neither required nor evident in all EMDR sessions, but their appearance is sufficiently frequent that they compromise another principle of EMDR. This is why, practitioners claim, only professionals should be trained in this method.<sup>85</sup>

EMDR shares with psychoanalytic tradition the view that traumatic memories have not yet been incorporated into more reality-based perceptions and that treatment must be directed at updating earlier events, often from childhood. Behavioral terms are used frequently, but with a different connotation. The EMDR assumption that past trauma needs to be re-experienced is at odds with the traditional behavioral focus on the present. The desensitization that occurs in EMDR refers to the reduction of negative emotions through confronting and reprocessing of traumatic memories. Shapiro emphasizes the cognitive aspects of the EMDR model. He implies that changes in thinking are more likely to precede and cause, rather than accompany

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<sup>85</sup> Ibid.

or result from, changes in other aspects of functioning, such as emotional, sensory, imaginal or behavioral. In this sense EMDR is a cognitive therapy.

There is overlap between EMDR and other psychotherapies in terms of informed consent, history taking, use of homework, and follow-up. Rapport between therapist and patients is also seen as essential, though EMDR therapists are more likely to attribute treatment benefit to the EMDR method than to the therapist or the healing power of the therapeutic relationship.<sup>86</sup>

When good therapists integrate EMDR with their particular form of therapy, they increase their rate of success as well as shortening the duration of treatment. Andrew Solomon, after experiencing EMDR said, "I always came out of my EMDR therapist's office reeling (in a good way); and the things I learned have stayed with me and enriched my conscious mind. It is a powerful process."<sup>87</sup>

There exist strong relations between emotions and gestures, body postures, facial expressions, and eye movements. For example, smiling will generally produce a small increase in the sense of well-being. The EMDR therapy makes a patient focus on the past traumatic events in the context of the present. Although not explicitly part of EMDR theory, some of the eye movements coincidentally access the emotional connections to the traumatic event. Other eye movements are unrelated to the emotion, and because of this, as the patient concentrates on the traumatic memories, these become separate from the negative emotions that they triggered. It is not a question of self-healing, but a question of triggering, through eye movements, a different assortment of emotions. In turn these emotions can be dealt with easier than the original negative emotion that was being triggered. When it works, slowly, in a step-by-step fashion, the traumatic memory and associated mode of thinking is distanced more and more from the negative feelings.

At the very minimum, the unexamined life can seldom be brought back to health without some close examination. A profound examination is almost always revealing. Intimate friendships and relationships help maintain health through these examinations. Therapists base their practices in listening closely and attentively while the patient gets in touch with their true motivations, so that they can begin to understand why they act and feel in certain ways. Many times naming something is a way of subduing it, and knowing the source of the problem can be useful in solving it. At least the therapies might teach some tricks to cope slightly better and improve the quality of life slightly. In some cases, isolation and depression are a vicious circle, and a therapist can help connect the patient with his friends and relatives and mitigate the severity of the situation.

It has been shown that therapy is not nearly as successful as medications for pulling people out of depression. On the other hand, therapy has a protective

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<sup>86</sup> Ibid.

<sup>87</sup> Andrew Solomon, *The Noonday Demon*.

effect on recurrence, and is a good strategy for preventing a next episode. Less than half of depressives experience significant improvement with just medication; less than half experienced significant improvement with cognitive behavioral analysis (one of the most successful therapies for depression); yet more than 80 percent experienced significant improvement after being treated with both.

Most therapies are only as good as the therapist. The relationship between patient and therapist can be more important than therapeutic method. A deep, intimate relationship can probably help a lot by constructive conversations. In an important study done in 1979, research demonstrated that any form of therapy could be effective when both the patient and therapist acted in good faith, the patient believed that the therapist was good, respected and liked the therapist, and last that the therapist had an ability to form understanding relationships. The experimenters chose English professors with this quality of human understanding and found that, on average, the English professors were able to help their “patients” as much as professional therapists.<sup>88</sup>

Finding the right therapist can be daunting. Andrew Solomon recounts his search for a new therapist after terminating with psychoanalysis. “I tried eleven therapists in six weeks. Some of the therapists seemed wise. Some of them were outlandish. One woman had covered all her furniture with Saran Wrap to protect it from her yapping dogs. I left when one of the dogs peed on my shoe. One man gave me the wrong address for his office, and one told me that that I had no real problems and should lighten up a bit. There was the woman who told me she didn’t believe in emotion, and the man who seemed to believe in nothing else. There was the cognitivist, the Freudian who bit his nails, the Jungian, and the autodidact. One man kept interrupting me to tell me that I was *just* like him. Several seemed simply to not get it when I tried to explain to them who I was.” Solomon ends with this quote from Steven Hyman, “We try to do studies of drugs versus therapy. Have we done studies on bright therapists versus incompetent ones? We are really Lewis and Clark in this area.”

Diet and exercise improve or lessen mood disorders. When the body becomes physically active, endorphins are produced, and endorphins make you feel better; good when you are normal, and less bad when you feel terrible. By pushing the body, the brain will follow and become more active, and thus the negative feelings are lessened. Diet cannot cause a depression to remit, but it can help to raise certain levels of neurotransmitters or hormones. Eating well can help reduce recurrences. For example, sugar and carbohydrates appear to raise the absorption of tryptophan in the brain, which in turn raises serotonin levels. As another example, dopamine synthesis relies on B vitamins, especially B12.

The evidence for beneficial mood effect from omega-3 fatty acids is the strongest of all, the theory being that food rich in B vitamins raises the level of omega-3 fatty acids.

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<sup>88</sup> Ibid.

Fluctuating levels of blood sugar, with highs and lows throughout the day, can produce depressive symptoms as part of a syndrome of adrenal exhaustion.<sup>89</sup>

Under certain conditions, hypnosis might help, and massages can improve moods slightly.

Optimism and even belief can be helpful. Anything that improves the symptoms of depression can be the beginning of the long spiral upwards in the return to normalcy.

Not all competing theories can be right, but some therapists maintain that apparently contradictory models of change may all have merit in different contexts, and that any aspect of human functioning can at one time be a cause, at another an effect. This is the main argument for why sometimes in one case a particular therapy works and in other cases it doesn't, or why a particular therapy works in some cases but not all.

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The few times that my son Mitch tried to seek therapy, he quickly became disenchanted, because the therapist, whatever his or her orientation, was seeking the cause. As Mitch told me, "Dad, they are looking for some trauma that simply doesn't exist."

During the last three months of Mitch's life we were together about half the time. I tried to convince him that he should give therapy a chance. I believed that if he believed therapy could help him, it would, even as a form of placebo effect.

The week before he killed himself, he saw an EMDR psychologist three times. I talked to Mitch on the phone the day he left Carmel to go to New York. He said, "I saw a therapist and she says I am fine. She says that it's a good idea to go to New York. I really am all right, Dad. Don't worry."

My wife and I talked to her after his death. She had diagnosed him as Moderately Depressed With Panic Attacks, Not Suicidal With Hypersomnia (trouble falling asleep and then oversleeping). In his last session, his levels of distress, as subjectively measured by a number of categories, on a scale of one to ten (ten being the worst), were at five.

Mitch believed to the very end that his personal problems were chemical and that the right pill would solve his problems. The psychiatrists who prescribed different medications for Mitch, however, did not have a good track record in his case. During the last four months of his life, Mitch was self-medicating, following the prescriptions his doctors at UC Santa Barbara had given him more than a year and a half before. He led us to believe that he was under their supervision. I worried that the medications were not working, but trusted Mitch's subjective judgment. I did discuss with him, on a couple of occasions in those last few months, that maybe

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<sup>89</sup> Ibid.

we should go see a neurologist. They, after all, would know better than anyone what the existing chemical arsenal might do.

After Mitch's death, among the personal belongings he had with him in New York were several medications: Sudafed, Dramamine, Imodium, Doxycycline, Clonazepam and Paxil. Can the medications have a side effect that led to his suicide? According to his doctors at UC Santa Barbara, the answer is no, but undeniably, the medications alter brain chemistry.

I discuss his medications for the record, and except for Paxil, probably have no relation to suicide.

The Sudafed—probably because he had a cold. Dramamine, I speculate, was to prevent motion sickness on the flight out to New York.

Doxycycline, for his acne. He had seen a dermatologist to treat his face. Doxycycline is a broad-spectrum antibiotic. It is used to treat many bacterial infections in different parts of the body. At one time, he had convinced himself that he was depressed because he had bad pimples. A few years back, he had insisted that he didn't like to look at himself in the mirror, a habit that he seemed to continue, as confirmed by Katie, probably until his death. Katie told us that, "I thought it was eccentric; he avoided mirrors, flipped pictures of himself so his image wouldn't be seen. I didn't think it was anything serious." He had taken twenty-one 100 mg pills since he picked them up at the pharmacy on October 8. He died on November 12, thirty-five days later. I don't know if or how many he had left from previous prescriptions. One of the possible side effects of Doxycycline is diarrhea. That would explain the Imodium.

Clonazepam (Klonopin) is an anticonvulsant, and has a similar profile to other anxiolytics/ sedative benzodiazepines. It is used for short-term relief of mild to moderate anxiety, and it may also be used to treat panic attacks, drug-induced mania, nocturnal myoclonus, bipolar affective disorder, and to help control different kinds of seizures. He had taken 12 of 30 pills since he had picked up the prescription on August 23. On average one pill every four days for the last fifty days of his life. This seems to indicate that he felt he had his anxiety under control most of the time, but obviously the anxiety was present and recurring.

Paxil is a serotonin selective reuptake inhibitor (SSRI). The half-life of Paxil is between twenty-two and twenty-four hours. It is generally recommended in daily doses of 10-50 mg, and a steady state concentration in the blood is achieved about seven to fourteen days after starting the medication. This medication is approved for treatment of depression, anxiety disorders and panic attacks. Mitch had taken 19 of 30 pills since he picked up the prescription on October 1. The pills were 20 mg dosage. However, there were two pills broken into halves, which seem to indicate that he was taking a half-pill daily, or ten mg per day. He lived forty-three days since the time he picked up his prescription, and thirty-eight daily dosages dovetail nicely with this time frame. Mitch probably convinced himself that he wasn't as sick as before, so he took 10 mg dosages; as opposed to 20 mg he had been prescribed twenty-one months previously.

In general, these mood drugs take one or two weeks to kick in. The phase of recovery can last a long time. Many psychiatrists feel that this is a dangerous time, because during the worst of a depression, the patients generally don't have enough energy to feed themselves, much less kill themselves, but in this emerging period they have enough energy to carry out a suicide.

Andrew Solomon, deep in depression, recounts, "I was also aware that if I didn't allow myself the relief of considering suicide, I would soon explode from within and commit suicide. I felt the fatal tentacles of this despair wrapping themselves around my arms and legs. Soon they would hold the fingers I would need to take the right pills or pull the trigger, and when I died, they would be the only motion left. I knew that the voice of reason was the voice of reason, but I also knew that by reason I would deny all the poison within me, and I felt already some strange despairing ecstasy at the thought of the end."<sup>90</sup>

Many people don't like depending on the drugs, or stop taking them to avoid side effects in an effort to feel normal again. Any good psychopharmacologist can confirm that going off drugs should be done gradually and under supervision. And some people have to take medication all their life.

The medications available to treat mood disorders are addressing some neurotransmitter deficiencies, and producing their benefits in a roundabout way. In some cases they work better than in others, and in some cases they don't work at all. About eighty per cent of patients are responsive to these drugs. However, only about fifty per cent respond positively to the first drug they are given. Good psychopharmacologists obtain the best results using an individually tailored cocktail of medications and managing carefully the side effects.

Andrew Solomon candidly reports, "I have had some sexual side effects—a slightly decreased libido and the universal problem of a much-delayed orgasm. A few years ago, I added Wellbutrin to my regimen; it seemed to get my libido running again, though things have never come up to old standards. My psychopharmacologist has also given me Viagra, just in case I get that side effect, and has since added dexamphetamine, which is supposed to increase sexual drive. I think it does but it also makes me twitchy. My body seems to go through shifts beyond my ability to discern, and what works splendidly one night may be tricky the next. Zyprexa is sedating and I mostly sleep too much, about ten hours a night, but I have Xanax around for the occasional night when I am assaulted by sensation and cannot get my eyes closed."<sup>91</sup>

In Mitch's case I failed. I failed because I didn't understand other doctors and therapies could make a huge difference. But the medical community failed too because it did not educate Mitch or us about the potential dangers of his condition. Because it did not, I went about it slowly; after all who am I? The discoverer of the

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<sup>90</sup> Andrew Solomon, *The Noonday Demon*.

<sup>91</sup> *Ibid.*

secrets of the brain? I read a book here and there. A book on memory; two on emotions; another on consciousness; one on the symbolic faculties of man; on neurons and receptors; several on artificial intelligence; even Pinzer's "*How the Mind Works*". Little by little, I gained trickles of knowledge, layers peeled off. Some insights I found led me in a new direction, a grain painfully added here, another over there. Slowly, too slowly for my son and me, I learned odds and ends; little bits and pieces of the puzzle.

I had no sense of urgency as I went about my search. I was calmed by the illusion that my son's problems were not too bad, that soon, as before, they would go away. For the most part, he was, I believed, a fine and healthy young man with a little turmoil once in a while, disturbing enough in itself, but then, almost as quickly as it came, it went. I had run out of time. Suddenly, he committed suicide.

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March, only four months after my son had killed himself, I was walking the streets of New York, perhaps the same street he walked forty-five minutes before his life ended. I wondered if he had paid attention to anything around him, because there, occupying the whole block on East 77<sup>th</sup>, between Lexington and Park, stood the Lenox Hill Hospital. "Why," I asked myself, "why didn't he walk into the emergency room and ask for help? Why hadn't I thought of that when I last spoke to him?"

When a person suffers a sudden mental disturbance, it is termed a psychiatric emergency. Psychiatric emergency is a life-threatening event, just like a cut artery, a smashed limb or a bullet wound.

The problem, of course, becomes one of knowing or being able to identify a potential suicidal situation. If it is you suffering through this, the problem is whether you remain rational enough to know this and ask for help.<sup>92</sup>

Edwin Shneidmann has defined suicide as "the conscious act of self-induced annihilation, best understood as a multidimensional malaise in a needful individual who defines an issue for which the act is perceived as the best solution."<sup>93</sup> This implies that suicide is not a random and pointless act. In that I agree; but it is not a rational (conscious) act either, at least in a small percentage of individuals. For some individuals, suicide is not a preplanned action; it is the first and, because they act on it, the last suicidal impulse, with no time to ask for help.

If one goes to the emergency room, one will probably end up at the hands of a competent physician. Care should be given to specifically request a psychiatric

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<sup>92</sup> Susan Rose Blauner, *How I Stayed Alive When My Brain Was Trying to Kill Me*, has all sorts of advice on how to help you avoid suicide.

<sup>93</sup> Harold I Kaplan & Benjamin J. Sadock, *Synopsis of Psychiatry*.

consultation. Keep in mind that in emergency rooms psychiatric records are generally not available to check any previous history. If another physical condition exists, like a broken bone for example, the standard approach in the emergency room setting does not deal with psychiatric aspects of somatic illness. In general, most staff at the emergency room is not equipped to deal with an added psychiatric complication.

In the case of mental disorders, there is a bigger risk that something can go wrong because of the uncertainty of the physician's own knowledge of the subject. The most probable action is a quick assessment of your degree of suicidal risk and appropriate action. ER staff will ask you your age, sex, marital status, employment, educational and social background and so on. They will ask you to verbalize your suicidal intentions and they will ask you about life crises and previous mental disorders. They will probably sedate you and try to stabilize you to the point that you can't act on your impulses, even if you wanted to. They might put you under surveillance and in special rooms to prevent further possible acting out of suicidal tendencies.

A psychiatrist will be called. He or she will try to do a complete psychiatric history; try to talk to friends and relatives to have a better assessment. Nurses will try to reduce psychological pain by modifying a stressful environment; if possible by enlisting the help of a spouse or friend. The psychiatrist will attempt to build a realistic support by recognizing that the patient may have a legitimate complaint and offer alternatives to suicide.

Once a diagnosis is reached, medications will be given as needed, sedatives, antidepressants, antipsychotics or mood stabilizers. You will be interned in the psychiatric ward until considered stable enough. Individual, group and family therapies will be provided; you will receive the hospital's social support and sense of security. If they discover other underlying problems like alcoholism or some organic sickness, they will try to address those, too. They will repeatedly search your belongings and person to eliminate exposure to dangerous or potential injurious self-inflicting objects. The treating team must decide how much to restrain you and how often should you be checked or be under continuous observation.

In extreme cases they might determine that Electroconvulsive therapy is necessary for severely depressed patients. This might require several treatments, and can be quite disorienting, affecting memory, sometimes permanently.

Once the patient is considered stable enough, a medical and therapeutical program should be initiated and followed aggressively. The hospital can be a sanctuary, where the familiar surroundings of everyday are removed and an oddly gratifying sense of stability and isolation can be found. Even the continuous piercing of sirens and the sound of commotion can be stimulating, as a constant reminder that one is in a cathedral of sickness trying to join the healthy.

Sometimes, however, the best efforts to recognize suicidal tendencies in one self or others, fail.

Patients recovering from a suicidal depression are at particular risk. As the depression lifts, patients become more energized and are thus able to put their suicidal plans into action.

A patient may commit suicide even when in the hospital. According to a study, 1% of suicides occurred in general medical-surgical or psychiatric hospitals; however, the annual suicide rate in psychiatric hospitals is only 0.003 percent.<sup>94</sup>

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In our basement in Carmel, Mitch had set up his electric organ, along with a computer with software that can play any instrument if you program it correctly and provide it with a musical score. In this way he could compose by writing a score or by playing it on his organ. He also had a microphone hooked up so he could sing along. Tacked on a wall, next to his PC, was the following sign:

### *Persistence*

*I will persist until I succeed.*

*I was not delivered unto this world in defeat, nor does failure course in my veins. I am not a sheep waiting to be prodded by my shepherd. I am a lion, and I refuse to walk, to talk, to sleep with the sheep. I will hear not those who weep and complain, for their disease is contagious. Let them join the sheep. The slaughterhouse of failure is not my destiny.*

*I will persist until I succeed.*

*The prizes of life are at the end of each journey, not near the beginning; and it is not given to me to know how many steps are necessary in order to reach my goal. Failure I may still encounter at the thousandth step, yet success hides behind the next bend in the road. Never will I know how close it lies unless I turn the corner. Always will I take another step. In truth, one step at a time is not too difficult.*

*I will persist until I succeed.*

*So long as there is breath in me, that long will I persist. For now I know one of the greatest principles of success: If I persist long enough, I will win,*

*I will persist! I will win!*

—The Scroll Marked III

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<sup>94</sup> Ibid.

# Schizophrenia

*With some diseases, willpower or persistence doesn't matter.*

*Schizophrenia and Schizophreniform Disorder are much the same, except for the duration of the disorder. In Schizophrenia the symptoms should be present for at least six months with at least one month of active symptoms. In Schizophreniform Disorder, the disturbance lasts less than a month.*

*The essential feature of these two disorders is a mixture of two or more characteristic signs and symptoms, both positive and negative. The positive symptoms are the following: delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behavior. The negative symptoms are: affective flattening (no emotional response), avolition (poverty of speech) and avolition (inability to initiate and persist in goal-directed activities).*

*I think that the imbalance of excitatory and inhibitory neurotransmitters in this group of disorders is slightly different than it is in Depression and Manic Depression. I believe there exists a complex interrelated balance between acetylcholine and dopamine (cholinergic-dopaminergic). The picture that emerges here is a little more complicated than the glutamate-GABA relationship of bipolar and unipolar depression.*

*The main evidence suggests that in Schizophrenia and Psychotic Disorders acetylcholine release rates are less than normal. This, in general, reduces dopamine levels almost in a direct proportion.*

*Acetylcholine works on two different types of excitatory receptors called nicotinic and muscarinic. The nicotinic receptors are of fast onset, and of short duration; the muscarinic receptors are relatively slow in comparison. Dopamine, on the other hand, can act in an excitatory or inhibitory mode, depending on the dopaminergic receptors of the neurons. There are five different types of receptors, known as D1, D2, D3, D4 and D5. The most common and predominant are D1 and D2. D1 is the most abundant and is excitatory in nature. D2, the second most abundant, is inhibitory. D3 and D4 receptors are also inhibitory. There is also, to make things more intertwined, some evidence that in some circuits, as cholinergic activity is suppressed, there is an increase in dopaminergic activity. On the other hand, complicating matters, primarily through the inhibitory properties (D2, D3 and D4), a lessening of dopamine in some circuits increases acetylcholine release, and here is where the crux lies.*

*It has been recently reported (April 24, 2000, UMHSmedia@umich.edu) that the cholinergic system tends to suppress positive symptoms that are exacerbated by an increase in dopaminergic activity, and that the corresponding increase in cholinergic activity then leads to an intensification of negative symptoms. In a series of experiments when acetylcholine was blocked in*

*muscarinic receptors researchers found significantly increased positive symptoms and lowered negative symptoms.*

*These studies do not contradict each other; they are, I suspect, looking at different aspects of the dopamine-acetylcholine balances.*

*To begin to understand Schizophrenia, it is helpful to start with Delusional Disorder. When the hippocampus is slightly impaired, instead of doing its normal job of associating sensory information to a context, its electrically fused neurons and circuits can get locked into a certain configuration and keep putting the new information into one single particular context. When it does this, it starts to categorize more and more echoes as being related to the same context, even when originally they had been encoded in different contexts. It has been shown that blocking D2 receptors in the ventral hippocampus impairs memory. Impairment of muscarinic receptors in the brain produces cognitive dysfunctions as well. Also, more dopamine (D2—inhibitory) to the hippocampus leads to more acetylcholine release. This would suggest that lowering dopamine (D2—inhibitory) to the hippocampus produces less handshakes (acetylcholine related) to locate relevant memories and construct contexts; it locks into the particular mode in which it is functioning and doesn't switch as needed. The result is the presence of delusions caused by the wrong belief or context being associated to the incoming sensory information.*

*In the case of Delusional Disorder, the delusions are non-bizarre, meaning that they could be conceivable in real life (e.g., being followed, poisoned, infected, loved at a distance, etc). Apart from the direct impact of the delusions, psychosocial functioning is more or less normal, and behavior, as long as it is consistent with the delusion, is not odd or bizarre. There can be mood episodes of brief duration compared to the delusions, but the particular train of thoughts brings these on during this imbalance in the brain.*

*This slight decrease in acetylcholine has an impact on the thalamus as well. The thalamus is receiving cholinergic inputs from the mid brain, but acetylcholine by itself cannot activate or shut down the neurons of the thalamus. Acetylcholine makes the system more sensitive to sensory input. Lack of acetylcholine slows down the thalamus and this has a direct consequence on the attentional subsystems. In Delusional Disorder the temporal dissociation of the attentional systems produces mild visual or auditory hallucinations. On the other hand, tactile and olfactory hallucinations might be prominent, especially if they are related to the delusion (e.g., infested with insects with delusions of infestation or the perception that one emits a foul odor from a body orifice associated with delusions of reference).*

*When the hippocampus locks into a context, the sensory information is filtered through this context and is deformed accordingly. The delusions produced by this effect fall mostly into a few categories: Erotomaniac (another person is in love with one), Grandiose (having some great or unrecognized talent), Jealous (lover is unfaithful), Persecutory (being conspired against, followed, poisoned), Somatic (problems with bodily functions or odors from orifices), Mixed (various delusions together or alternating) and, of course, a category for unspecified (all others).*

*Patients with Delusional Disorder may develop irritable or Dysphoric mood as a reaction to their delusional beliefs. This slightly slowing down of signaling in the brain can account for why*

*a Major Depressive Episode occurs more frequently in individuals with Delusional Disorder than in the general population.*

*If we look at Schizophrenia as a worsening of Delusional Disorder, and we continue to decrease ever so slightly cholinergic activity the symptoms increase. Both the positive and negative symptoms can be explained in this manner.*

*When the hippocampus slows its release of acetylcholine because of receiving less dopamine (D2-inhibition) beyond the levels in Delusional Disorder, Schizophrenia sets in. In this case the delusions are more extreme and can become bizarre, as the context of processing sensory information is more distorted. Bizarreness, of course, can be hard to judge. Delusions are deemed bizarre if they are clearly implausible and do not derive from ordinary life experiences. The content of the delusions, as with Delusional Disorder, can be of several themes (persecutory, referential, somatic, religious or grandiose). An example of a nonbizarre delusion is the belief that one is under surveillance. Examples of bizarre delusion are a person's belief that a stranger has removed his internal organs or a stranger controls his thoughts (thought insertion by aliens; and, or his thoughts have been taken away from him (thought withdrawal by some outside force). The misinterpretation of perceptions or experiences worsens.*

*When the thalamus is slowed down enough, the attentional systems become disorganized and uncoordinated. And as we have seen, this produces hallucinations.*

*Hallucinations may occur in any sensory modality, but auditory hallucinations are by far the most common. They are experienced as voices, familiar or unfamiliar, that are perceived as distinct from the hearer's thoughts. Two or more voices conversing with one another or maintaining a running commentary on the person's thoughts or behaviors is particularly characteristic.*

*Disorganized thinking ("formal thought disorder") is considered by some to be the most important feature in Schizophrenia. Because of the difficulty in developing an objective definition of thought disorder and how to measure it, in a clinical setting inferences about thought are based primarily on the individual's speech disorders.*

*It has been established that blocking of the muscarinic receptors exacerbates symptoms of schizophrenia. By inference a lessening of cholinergic activity will allow dissociations of different memory systems, even very closely related subsystems that might be used for thinking and/or speech. Manifestation of this might vary: the individual "slips off track" from one topic to another (derailment or loose associations); answers to questions might be obliquely related or completely unrelated (tangentiality); and, rarely, speech may be so severely disorganized that it is nearly incomprehensible and resembles receptive aphasia in its linguistic disorganization (incoherence and word salad).*

*Once we understand the cause of the positive symptoms it becomes easier to understand the negative symptoms. Primarily for the same reasons (decrease of cholinergic activity) but affecting the executive function areas in the prefrontal cortex, disorganized behavior might present itself in a variety of ways, ranging from childlike silliness to unpredictable agitation. There can be problems in goal-directed behavior, or the person might appear disheveled, or dressed in an unusual manner (wearing many coats or scarves on a hot day); there might be clearly inappropriate behavior (masturbating in public) or unpredictable and untriggered agitation (shouting or swearing).*

*This disorganization blocks activation of any associated emotions. The systems that so beautifully activate related emotions to certain thoughts are confused by the disorganized nature of the thoughts, and this is manifested as affective flattening. No emotions mean no emotive responses, and can clearly be seen by the person's face appearing immobile and unresponsive, with poor eye contact and reduced body language. Even though the person might smile occasionally, his or her range of emotional expressiveness is clearly diminished most of the time.*

*If disorganized speech is related to disorganized thought, alogia might be simply another side of the same coin, manifested by brief, laconic, empty replies. The person with alogia appears to have a diminution of thoughts reflected in decreased fluency and productivity of speech.*

*Again, if in the prefrontal cortex executive functions are slowed down enough because of a lessening of cholinergic-dopaminic excitation, these areas will not be able to coordinate the information from the different memory systems to plan future actions. This will obviously be manifested as avolition. The individual might sit for long periods of time, show little interest in work or social activities and be unable to initiate or persist in goal-directed activities.*

*It is of utmost importance that when I say reduced cholinergic activity, we keep in mind the complex web of interactions between the dopamine and the acetylcholine systems. Keep in mind that in some circuits, an increase in dopamine (through increased inhibition D2, D3 and D4) decreases acetylcholine activity. Also, in other circuits, decreased acetylcholine activity shows increases of dopamine activity, but overall, a reduction of acetylcholine activity means a reduced production of dopamine. The very specifics of each circuit are being researched as we speak and should lead to better and more specific medications.*

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In August of 1997, my son Mitch and I flew from California to New York City to board the *Ocean Breeze*. We were to cruise to Halifax, Canada, then to the point in the Atlantic where the *Titanic* had sunk in April 1912. There, we would circle around for a few days, witness the recovery of a piece of the hull of the *Titanic*, then cruise back to New York City.

There was a three-hour-time-zone change from California to New York; then one more time zone change between New York and Halifax. As we cruised east for three days, each day turned into a twenty-three hour day as we moved through three time zones. When we headed back to New York, we would cruise west and enjoy four twenty five-hour days.

My son Mitch could not adjust his circadian rhythms to the local time during these thirteen days of travel. He seemed to be stuck in California time. It was the first time I ever wondered whether there could be some problem with my son. He was a little irritable, but I attributed this to his age. After all, when you are seventeen, even a huge cruise liner can feel confining. Every night as we moved eastward, he went to bed one hour later and got up one hour later. When we circled around the site of the sunken *Titanic* and had three days in the same time zone, I hoped this would settle him down, but he continued going to sleep at a little before 6:00 a.m., keeping

a timetable that seemed more in tune to the local California time and his regular schedule of going to bed around 11:00 p.m. A seven-hour difference!

As I write this, at this moment, I realized why, as one of his last acts, Mitch took off his watch and left it on the bed as a message to me. Although he set the watch seven hours behind New York time, he was, I believe, telling me that he was stuck in the place where the Titanic sunk, but feeling like he was seven hours behind, like when were in the middle Atlantic, that is, seven hours ahead of California time, but feeling like he was stuck in my time, Carmel time! Among the roiling emotions of his last few moments, one of them must have felt like something he first experienced when he was on the Titanic, and this triggered memories of his disrupted circadian rhythms on our trip. He felt broken, sunk in a deep abyss at the bottom of the black ocean. As a last heroic effort, he set his watch seven hours back; it was perhaps, the only way he could tell me of his disorientation in time and space and perhaps, more importantly his disorientation with regards to himself—his loss of self—the removal of the last obstacle to suicide.

When I received his personal belongings, I wore his watch for several days without changing the time to see if I could figure out why the watch was seven hours behind New York time. It had eluded me completely. My wife, of course had a practical explanation; the watch had simply stopped for seven hours exactly and then started. Eventually, I gave up trying to figure out a reason for the mysterious setting of the watch, I adjusted it to local time and moved it forward four hours.

Mitch's circadian rhythms, noticeably out of whack when we arrived in Halifax, only got worse as we approached the site where the Titanic lies in the middle of the Atlantic. Many of the victims that died in the tragedy of the Titanic and whose bodies were recovered are buried in the cemetery in Halifax. I took a day tour to visit Halifax, but Mitch was too tired to get out of bed early in the morning; he pleaded that he had gone to bed too late and needed to catch up on his sleep. So I left him sleeping and caught up with him on the *Ocean Breeze* later in the afternoon.

Now I wonder, sometimes, could there be any connection between Mitch and myself and some of the victims of the *Titanic*? Could physical proximity to the place of a traumatic event, even though separated through time, have been the cause of the disruption of his circadian rhythms? Would my sister Susana see in our taking this trip, previous lives—that we, drawn together in the past, had died in 1912 when the *Titanic* sunk? As an intellectual exercise, I find it comforting to think that Mitch and I might have lived or will live together in another lifetime.

For the most part, I perceived the trip to be a great experience for us, one filled with fun, intimacy and growing up. In hindsight, my observations about Mitch should have started me on a mission.

One of the difficulties that Mitch faced on this trip was a structured environment not normally enforced at home. Living in close quarters in a small cabin required both of us to be more orderly and organized. I felt it would be a good opportunity to impose more order on him, which at home, because of his mother's nature, was

almost impossible. I also felt that it could be a good time to subtly teach Mitch that clothes clearly send out a message, and that sometimes trying to be different sends the wrong message.

Mitch loved skateboarding, loved the image of the skateboarder—the baggy pants with underwear showing, the baseball cap worn backwards. Above all, he loved the act of skateboarding. He practiced for hours perfecting his spins and moves on a trampoline and then performing them on the hard surfaces of parking lots. Unfortunately, on board *The Ocean Breeze*, skateboarding was not permitted.

After discussing with him different options for entertainment, he delighted at the prospect of the nightly Casino. He loved to bet, especially at blackjack, and he was quite adept at figuring out the odds. The night *The Ocean Breeze* left New York, headed for Halifax, I ran into him in one of the hallways. Mitch looked dejected.

“What’s wrong?”

“I got kicked out of the Casino,” he replied in a tone of absolute despair.

“I hate to tell you, Mitch but dressed like that,” referring to his skateboarder image, “they won’t allow you anywhere.” He seemed very crestfallen.

“If I can’t play blackjack, this trip is going to be terrible,” Mitch cried.

“Don’t be such a cry baby. There are many other things to do.”

“Like what?”

“Well, like going to the conferences, talking to people, looking out at the ocean . . .” I replied not very convincingly. “Once we leave Halifax, and we head into international waters, they probably won’t care how old you are in the Casino. So, wait one more day and tomorrow you will probably have no problem. Cheer up,” I said, trying my best to raise his spirits.

“Are you sure of this?”

“I’m pretty sure. At any rate, I’ll find a way. So relax, Mitch. Take it easy for a day.” He smiled.

“I guess I can wait a couple of nights,” Mitch added a little more cheerfully.

The next night, after we departed from Halifax, I saw an officer sitting at the bar; I approached him. After introductions and some small talk, I cut to the chase, “My son is almost eighteen, but not quite, still a couple of months to go. He went gambling the first night and was quickly spotted and kicked out of the Casino. He’s dressed like a skate boarder, pretty distinctive, baggy pants, you know. He is very disappointed that he can’t gamble. I think he was hoping that this could be his salvation on this trip with his old man. I remember as a young kid, when I was eleven, my father took me on a cruise, and once we were in international waters, the casino didn’t pay attention to age limits. Is it safe to assume that tonight as we head away from the mainland that might be the case?”

“I hate to burst your bubble, but since we left New York and are returning to New York, it is more likely than not that we have an inspector aboard. They will fine us heavily if we allow minors in the Casino. If we were headed towards Europe, then it would be different; it would be like you say. I regret to tell you, but it is not a good

idea to let your son try to gamble. He will be kicked out of the Casino immediately. We are enforcing these rules to the maximum.”

“I thank you for your time,” I said, got up and left thinking how I could salvage the situation.

I ran into Mitch a short time afterwards. I quickly explained to him what the officer had told me. He was clearly heart broken and dejected. I needed to do something quick.

“However, I have an idea, Mitch. I’ll make a deal with you. We both have a tuxedo that we rented for the two special evenings; so what we do is dress up to the tea. We go to the Casino looking like two rich, elegant gamblers, we play for one hour, and one hour only, and winning or losing we leave the Casino. I’m pretty sure they won’t object to us gambling if we look the part,” I added, not too sure that this was going to work. Mitch however brightened up immediately. We proceeded to our cabin, changed into our tuxedos and headed for the blackjack tables. Mitch proceeded to win a little more than I lost. He was obviously having a great time winning as I was losing. “Remember that we are partners, Mitch.” I admonished him, as I was the one financing the betting, trying to make sure that I would recoup some of my money.

“Don’t worry, dad. If you pay more attention, I’ll give you some pointers so that you don’t lose so much. At any rate, we will be ahead,” he said with youthful bravado.

When the hour was up, I turned to him as I gathered our chips, “It’s time to go, Mitch. We’ll do it again tomorrow.” He nodded happily, jumped up from his seat and said, “I’ll go change my clothes. Thanks, dad.” I watched him as he walked out of the Casino. I smiled inwardly as I could feel a definite sense of enjoyment in my son. A short while later, I saw the officer I had been talking to the night before. He was walking towards me smiling.

“How did your son take the bad news?” he said as he extended his hand in greeting.

I shook his hand and as I looked into his eyes I couldn’t lie; I proceeded to tell him what we had just done. He listened attentively; he patted me on the shoulder and then added, “Well done, well done. Keep it that way.” He turned and left.

The man next to me turned and asked, “How do you know the Captain? Maybe you could introduce him to me.” After a very brief moment of confusion, as I realized that the officer was none other than the captain of the ship, I regained my composure.

“It would be my pleasure,” I responded. “Captain,” I yelled after him as he walked away. “Captain,” I repeated as he turned, “some of my friends would like to meet you.”

“It would be an honor,” the Captain said as he turned back and approached my expectant new friends.

## Tom Beringer, First Engineer of the Titanic, speaks:

I remember seeing him standing on the deck. He had beautiful long red hair, green eyes, and a row of brilliant, straight, white teeth. When he talked, his hands moved gently, his fingers apart, like the tips of the feathers of a hawk's wings spread to control the subtlest turns in flight. As he walked, his swagger made you feel that you were in the presence of a man on a mission. He carried two small suitcases, and under each arm a parcel wrapped in brown paper. He was twenty years old. His name was Michelle.

After leaving Southampton, England, that morning we had stopped briefly at Cherbourg, France, on the night of April 10<sup>th</sup> to pick up more passengers. We had been delayed by a near miss with the *New York*, a ship about half our size. The *New York* had been moored next to the *Oceanic*, our sister ship. In passing, we had caused the *New York* to swing out into the river. Fortunately, while a tug attached a line to the *New York*, we reversed our engines, narrowly averting a collision.

Michelle had boarded along with Colonel John Jacob Astor, the wealthy grandson of the fur trader, and his second wife Madeline. Off duty, I had talked to Colonel Astor briefly, attracted by his easy manner and his exotic laugh. Then I turned to the young man.

"Welcome aboard. My name is Tom Beringer. I'm a first engineer."

"Michelle Boulanger, traveling third class," he announced proudly, pulling out his ticket. "I am on my way to New York to become a famous writer. Writing comes easy to me." His ticket indicated that he was to share a cabin with four men in the bow, separate from the women in the stern. But since we weren't carrying our full complement of passengers on this, our maiden voyage, Michelle, I knew, would get his cabin all to himself. We would stop in Queenstown on the south coast of Ireland to pick up the last of the passengers in route to New York.

"Your cabin is five levels down," I explained. Only three years older than he, I took an immediate liking to this young man. Since I was off duty and had nothing to do that evening, I offered to escort Michelle to his cabin. He let me help with his bags, but he protectively held his two parcels under his arms.

I had worked on the construction of the *Titanic* while I was in University, and as a recently graduated engineer. I was now in charge of running the boilers. I had, however, made it my business to be familiar with all aspects of the ship—rooms,

toilettes, plumbing, fresh water, coal bins, engine rooms, pumps, everything. I dreamed of being famous like Thomas Andrews, the designer of the *Titanic*. I felt privileged he was on board and that I had been so lucky to have spent so many hours talking to him about everything *Titanic*.

Michelle's cabin neighbors were the Hills, a family that had boarded in Southampton. They were originally from Liverpool. Husband, wife and two daughters were on their way to start a new life in the New World. The oldest daughter, Lillian, was nineteen. I remember her clearly. She was blonde and blue-eyed with dark brown eyebrows. A little chubby, she had a pleasant face and a beautiful body. Her hands seemed prematurely wrinkled and cold as if she had been washing clothes for many hours. She didn't warm up to me when she first met me, but when she saw Michelle in the hallway, she rushed to greet me.

"Mr. Tom," she beamed as we approached with Michelle's luggage. "How are you? I was just thinking about you."

"Oh, yes? I'm fine. How are you? I'm helping Mr. Boulangier with his luggage. It looks as he is going to be your neighbor."

"Hello. I'm Lillian Hills," she said, extending her hand to him.

Michelle awkwardly placed one of his parcels between his legs, held it there, then placed his delicate fingers in front of his mouth and pantomimed his lips moving as he tried to form some words. I could tell he was speechless. I had felt the same when I met Lillian. He started giggling.

"Is there something funny that I don't see?" Lillian said with her extended hand hanging in mid air. I took a hold of his moving fingers and pulled them out to shake Lillian's outstretched hand. As he shook her hand in greeting, the parcel under his left arm dropped, but he deftly caught it with his left hand and gently put it on the floor. His left hand came up in front of his mouth to continue the elegant movement of fingers substituting for speech. Then he spoke.

"I'm a writer on my way to New York. I will soon be famous and rich and then I would like you to be my wife," he blurted out with a slight French accent. "I promise you that I am serious. Very serious."

Now it was Lillian's turn to laugh. She moved her left hand up to cover her mouth and imitate Michelle's gestures with her fingers. When Michelle's face turned red, Lillian immediately dropped her left hand to her side and stopped laughing. "I didn't mean any insult or harm, really. I promise you I will seriously consider your proposition. Give me a couple of days, Michelle." They were still shaking hands in greeting. She patted his right hand with her left and added, "Let me help you get installed." She turned to me and said, "Mr. Tom, help me with that bag." And she turned into his cabin followed by a speechless Michelle and me.

Michelle put his two parcels on the left upper bunk. "I think I can unpack myself," he said, noticing Lillian waiting to help.

"Suit yourself, but I'll be back to get you for dinner in half an hour. You must meet my family." She turned to me, "Mr. Tom, a pleasure to see you."

“Wait, wait,” Michelle uttered as he moved towards her near the door. “I am serious; it’s just that you left me speechless. I couldn’t speak, I was . . .” He took her hand in his, and, after looking into her eyes, bowed and kissed the back of her hand. “I’ll see you in half an hour.”

“Don’t you dare forget, Michelle,” she said, giggling as she turned and ran out the door.

“You’re a lucky man, Michelle,” I said, as I was leaving. Then, “The third class dining room is one level up amid ships. My quarters are right below you, so I’ll be seeing you frequently. If you need anything, don’t hesitate to ask me. And I wouldn’t miss dinner if I were you.”

“Yes, I know,” Michelle nodded. “And thank you for everything.”

As Michelle recounted to me next morning, he was finishing unpacking when there was a knock. He opened the door and Lillian walked in and coquettishly lay on the right lower bunk.

“So, Mr. Writer soon-to-be rich and famous, are you ready for dinner?”

After dinner she invited him to the Poop Deck, at the stern of the ship. To get there you had to go through the aft well deck or the Third Class promenade deck, four levels up. This was one of the few places where third class passengers could be out in the open. The air was cold. The problem now was getting to the Poop Deck. The gate to the stairs that went up to the Poop Deck was closed. The Third-Class Promenade deck was below it. A few people were sitting chatting and smoking in there.

“How are we going to get to the Poop Deck with this gate closed?” Lillian asked.

“We are going to improvise,” Michelle said. He easily jumped up and pulled himself to a sitting position on top of the gate. He extended a hand down towards her. “Now, if you give me your hand.” She did and he pulled her up. He then swung his feet over to the other side of the gate, and easily lowered her onto the other side. He then jumped down, and the two climbed the stairs. They sat in one of the long benches in the middle of the deck. There was no one there except them. The stars were shining brightly.

She spoke about her parents and sister; about how they planned to start a new and exciting career in the West of the New World. They smiled nervously at each other. After a pause she continued.

“So, Michelle, tell me more. Tell me everything. Tell me how you are going to become rich and famous and then marry me,” she teased him.

He moved his fingers delicately in front of his chest softly bending them like feathers in the wind, as he searched for words. His right hand moved closer to his chest.

“Let me assure you, I don’t need fame or riches. I just need enough to take care of some children; a family is all I ask,” she clarified.

Michelle nodded thoughtfully. He continued moving his elegant fingers, rotating his left hand slowly, as if it held a wine glass. “My family is from Auvers-Sur-Oise. It is a small town about 27 kilometers northwest of Paris. My mother is a seamstress and makes curtains. I helped her with the curtains, making the rods and

ropes and the like. I have one younger sister. My father was a carpenter. He died three years ago.”

“I’m so sorry.”

“It’s all right. His dream was that I would get the best education possible. He sent me to the best schools he could afford in Paris, and eventually I studied for two years in the Sorbonne. I had to quit school when my father’s savings ran out. But not my good fortune. A couple of years before I was born an artist who was living in Auvers shot himself in the chest. Earlier, my father had befriended the man; his name was Vincent, he was Dutch. Vincent was fluent in English and French. My father was fluent in English and he fortunately insisted that I also speak English. Anyhow, Vincent lived for a couple of days after he shot himself and then died.”

“How old was he?”

“I think he was thirty-seven. No one wanted to bury him. After all, he had committed suicide; it was a sin, that kind of thing. My father, however, volunteered to make a box and bury the body. I’m not sure how, but I think a relative of Vincent paid my father with some of Vincent’s paintings for his troubles. They had all the paintings around the coffin. They gave my father four of them. I grew up with these paintings in our house. I like them a lot, especially the colors. My father always said that the paintings were worthless. He told me that Vincent had confided in him that he was never able to sell a single painting.”

As Michelle was recounting his previous night’s experiences, he seemed anxious, he stopped and turned, “And suddenly, I started to feel the onset of one of my episodes, Mr. Tom. I had to take a couple of breaths to try to calm down. I just couldn’t believe this was happening to me again. Not now, in front of Lillian. Occasionally, when I think about Vincent, perhaps because the first time I suffered an episode I was looking at one of his paintings, they are related.”

“Related? What do you mean episode? And related to the paintings? I don’t understand,” I said to Michelle.

“It’s hard to explain. Every once in a while, since I was sixteen, it comes slowly and feels like something is pressing my chest and I’m going to die. But, I was able to push it away and continue.”

Michelle took a deep breath, and after a short pause, he continued with the events of the night before.

“Are you all right?” Lillian queried.

“Yes. What was I saying? About a year ago, I was still in the Sorbonne, and I read an article in the newspaper about this great artist who had shot himself. It was Vincent. I knew I wanted to become a famous writer, someone like Mark Twain and travel around the United States. That is one thing I have known almost all my life—when I am writing I am happy. So when I was faced with the decision of my future, I first had to make sure that my mother and sister were taken care of. I was able to get good money for two of Vincent’s paintings; enough for my ticket to New York and to take care of my mother and sister for a year while I get started in my new career. I

hope I can get a job as journalist in one of the main newspapers of New York. You must stay with me if your family is moving west.”

“The two parcels you were carrying, these are two paintings?”

“Yes. I am hoping that I can get more money in New York than in Paris. It is a sort of insurance policy.”

“Michelle, you are rushing things. I said I would think about it. You said that you would marry me when you were rich and famous. Are you going to be rich and famous overnight?”

“Maybe. Perhaps I will be rich for selling two Vincents and famous for having sold them for a small fortune. You never know.”

“Mr. Tom, it was great. We spent the evening talking,” Michelle concluded.

The next morning, Thursday, after he had recounted his previous night’s adventure he continued in good spirits. He waved his hands as he spoke. “I am going to marry that woman. She still doesn’t believe me, but it is inevitable.” He told me about his plans. I told him about the *Titanic*. He was impressed and he peppered me with questions. I would be on duty after lunch. We agreed to meet later that night.

We arrived in Queenstown on the south of Ireland as lunch was being served. The only technical problem that had been reported was that the alternator in the wireless room tended to run hot. After checking it, I told the Junior Operators, “Turn it off occasionally. There is not much more that we can do. I’ll put in a report that we need a bigger one. They will change it when we get back to England.”

I went down to the boiler room of the *Titanic*. Here was my domain: twenty-four huge Hartland and Wolff’s double-ended boilers. Each weighed nearly one hundred tons.

The *Titanic*’s hull was divided into sixteen compartments. Each could be sealed independently in case of damage. Any one, even two or three compartments could be flooded and the *Titanic* would continue floating. She was for all practical purposes, unsinkable. Thomas Andrews had said the ship would float even with every other compartment flooded.

The boilers were housed in the fifth through the tenth compartments, counting from the bow to the stern. The hull had a double bottom for added safety. The boilers fed steam to two huge reciprocating steam engines and a steam turbine. Each reciprocating engine powered a huge propeller, and the turbine, a third screw in between the others. Each propeller could be controlled independently; running the lateral propellers in reverse or forward motion could help steer the huge liner. The eleventh compartment housed the reciprocating engines; the turbine was in the twelfth. My job was to ensure the boilers delivered the necessary steam to propel the ship, power the generators that produced electricity, and heat the water in the cabins and other interior spaces. We had plenty of coal and all boilers were working properly. This cruise was going to be like a walk in the park.

That night at eleven when I got off my shift I met Michelle. I showed him how to get to the Forward Well Deck with easy access to the Forecastle Deck, the most

forward deck on the *Titanic*. There, in the Forward Well Deck, you could be protected from the wind and still be outside. I loved the Forecastle Deck. I could stand there and look straight ahead at the seas. It was always such an exhilarating sight.

For the next three nights we met like this. We slowly forged a deep friendship. He would leave Lillian off with her parents at ten when lights of the third class public rooms were turned off, and I would leave my shift. He would tell me excitedly of all his plans. I would pretend to be more important than I actually was. In reality I had been by-passed for the more important engineering jobs. I was only twenty-three years old. Maybe in a few years I could get promoted to Chief Engineer and settle with a wife in the English countryside.

I tried to understand better his episodes, but generally, defensively, he pushed the conversation away. He confided a few things; that he had first felt them when he was sixteen, sitting in the living room of his mother's house, as he was staring into the yellow brush strokes of one of Vincent's paintings. He couldn't control the feeling and he sought his mother's help and comfort, but nothing she did would help him. Slowly the sensation of dread would pass. Michelle told me that he never knew when it would come. Many times it was unexpected.

He steered the conversation in other directions. He would ask me about the boiler and the engines, or he would enthusiastically tell me about the evening before. It was fun to see his deepening love for Lillian. While he became the brother I never had, I became a father figure to him, the father he had lost who counseled prudence and planning to achieve one's goals.

We became closer Friday and Saturday, as we approached Canada. The weather seemed to be getting colder, but otherwise was without incident.

Saturday night we were on the Forward Well Deck, when Michelle suddenly started gasping and rubbing his legs vigorously. He walked in a circle. He placed his hands around his shoulders, and looked up. He inhaled and exhaled noisily. Then he glanced sideways, his eyes darting left and then right.

"It's coming. I'm having an episode," Michelle gasped. "I'm going to my room." He quickly walked down the stairs.

A few minutes later, standing in the night cold, I had an ominous premonition. I ran all the way back to the Café Parisien, down the stairwell and towards the back of the ship past the second-class cabins, down the stairs to the third-class cabins. I raced down the hallway towards Michelle's cabin. I knocked on the door. There was no answer. I put my ear to the door. I could hear a faint noise. I couldn't make out what it was or where it came from.

"Michelle, open. It's me!" I shouted as I banged on the door. I tried the door. It was unlocked. I pushed the door back; the cabin was empty. I heard a noise down the hallway in the stairwell leading down to the crew's quarters. I ran and I saw Michelle hanging from a curtain rope tied to the metal banister, swinging back and forth, his feet a couple of inches off the floor, a suitcase on its side nearby. I jumped down the stairs and tried to lift him.

“Michelle, help me!” I screamed as I tried to take his weight off the rope. Suddenly he lifted his hands took hold of a bar on the banister and pulled himself up. Still holding him, I ran up the stairs and pulled the curtain rope over his head. We both fell to the ground gasping, as I, suddenly drained, sagged onto the stairs.

“What are you doing?”

Michelle sat up. He looked at me. He rubbed his neck.

He spoke slowly, as if coming out of a trance. “I don’t know. I was overcome with fear, but there was nothing to fear. There was nowhere to flee, nothing to flee from! But still I needed to escape. All of a sudden I felt a huge anger swelling in me. A voice said, “You are stronger than this. This is the last time. Fight it, put an end to it!” Suddenly, there was no more fear, just anger. I saw the curtain rope, and it became crystal clear. I could end it right now. I knew I could easily stare it down. I was stronger than the fear. I could beat it. I calmly measured the curtain rope and fashioned a knot around my neck as if I was doing curtain work. I grabbed a suitcase and ran to the stairwell. I stood on the suitcase, reached out to the banister and tied the rope and then I jumped. It seemed reasonable. I started feeling a great peace. The fear . . . was no longer. Then I heard my name . . .” He started sobbing, with his head between his knees, sitting there on the steps. I put my arm around him and rubbed his back. I picked up his suitcase and led him back to his cabin. There, I put him in his bunk. He started breathing evenly. He was exhausted, slowly he fell asleep. I left quietly.

The next day, Sunday afternoon at six o’clock I went to the wireless room. I spoke with the Junior Operator—we turned off the alternator that was running hot to give it a much-needed rest. I came back at seven-thirty and made sure that they turned the alternator back on. While I was there, a message from the *Antillean* came in, “6:30, apparent time, ship; latitude 42.3 north, longitude 49.9 west. Three large bergs five miles southward of us.” I noticed the temperature was dropping fast, probably close to freezing. I welcomed going down to my boilers.

At nine, I came up again. The temperature was one degree above freezing. There wasn’t much wind and the sea was flat. More messages reporting ice were received in the wireless room. I was told that we would be entering the ice fields at about eleven when I would get off my shift.

When I came off my shift, most of the public rooms had emptied. There would be a few people in the smoking rooms of first and second-class. Everything was quiet when Michelle joined me and we proceeded to the Forward Well Deck.

“How was your day?” I inquired.

“It was not good. Please don’t mention what happened yesterday to anyone.”

“You don’t need to worry about that.”

“I am worried; there is a great darkness inside my head. I think I am going crazy, Mr. Tom.” After a small interval of silence, “Tell me about your day.”

“What do you mean by darkness in your head?”

“It’s hard to explain. The best I can do is if you can imagine me being inside my head. There, I sense a small black celestial sphere, like the sky at night. It is dark,

and there are no stars, but it is smooth and cool and feels good. I can remember everything about myself. I can reach out and find all my memories. Other times, when things are bad, I sense the black smooth sphere, slowly turning into a cylinder. The cylinder's surface is black and hot, but its texture is prickly, like millions of sea urchin quills. The cylinder closes in on me, and the black quills prevent me from reaching through the cylinder, pressing, cutting my hands and arms as I try to break out. I know I can't reach my memories!" Michelle screeched between clenched teeth. He took a deep breath and continued, "As I feel the cylinder tighten around me, I can remember less and less. Slowly the millions of black quills close in on me. The torture is beyond words. I must be going mad."

I thought he might start crying. I looked into his green eyes, they seemed unfocused, so I tried to make light of it. "The one thing that worries me is that we are doing twenty-two and a half knots and that we are supposed to be going into an ice field right now."

After a pause, "You mean we'll see icebergs?" Michelle asked lamely, trying to focus on me.

I nodded. "Quick let's get to the deck." I raced ahead of Michelle, trying to distract him from his dark thoughts. He followed wearily. Once on the deck, we looked out ahead. It was clear, but in the horizon a haze was forming. At about eleven-thirty I heard the crow's nest above us ring three times indicating that something was ahead of us. Michelle and I strained to see through the looming haze, but couldn't make out anything. I heard the voice of the man in the crow's nest, "Iceberg right ahead."

A few seconds later I could feel more than hear an increase in the revolutions of one of the reciprocating engines. "They are trying to turn. They have increased the speed of one of the lateral screws," I said to Michelle. "Can you feel it?"

"No," he answered.

I felt in my bones the steam turbine slow down. This alarmed me greatly, as it would decrease the turning of the ship because less water would be hitting the rudder. We both looked out ahead on the starboard bow. Then we saw it. We were headed straight for the iceberg.

"Something isn't right," I said. "We should be turning faster. I think we're going to crash."

We were getting closer and closer. Finally the nose of the ship began to turn.

"We might just clear it. We're starting to turn."

The ice loomed closer and closer. I felt a change in pitch in the mighty ship as the turbine that run the center propeller stopped completely, and the two lateral propellers were put in reverse. It was the wrong move. "The faster we're moving, the faster we'll turn. They need to keep the turbine running forward for us to clear it!" I said as explanation. I stood there watching, petrified by the sight of the approaching mass of ice. Michelle turned to look at me. I could read fear in his face.

I grabbed Michelle by the arm. “Michelle, don’t worry.” As I said that, there was a screeching sound on the hull below us. Ice started to rain on us. Chunks of ice were coming down and bouncing on the deck, some small like a fist, others bigger than a horse’s head.

“Run for cover, Michelle,” I warned as I ran to the middle of the Forward Well Deck, under the Forecastle Deck where we would be protected from the chunks of ice coming down. “Are you all right?” I asked as Michelle reached me. He nodded. We stared at the dark looming mass of the iceberg going by us. “I need to get down to the boilers and see how I can help. Don’t worry. I’ll see you later.”

“Take care of yourself, Mr. Tom!” he whispered after me as I raced away. I turned to make certain he was alright and saw him walking to the starboard, carefully avoiding the chunks of ice strewn on the deck. I saw Captain Smith running into the bridge, men came running out and down the stairs. Michelle had stopped and was looking at the receding iceberg.

I arrived below in time to see the watertight doors between boiler room five and six closed. I could see down into boiler room No. 6 where there was already eight feet of water. Because the engines had been turned off, an unfamiliar quiet had fallen throughout the ship. Thomas Andrews arrived. We went to check the damage. We quickly verified that the first six compartments had been breached and they were all taking water. He looked at me. “How much time do you think we have?” Mr. Andrews asked me.

“What do you mean, how much time, Sir? It is only six compartments that are flooding.”

“The compartments are contiguous. I didn’t design the *Titanic* for this eventuality. It is just a matter of time before the combined weight of the water will pull the bow under. Inevitably the level of water will rise above the compartments and flood the whole ship. The *Titanic* is doomed.”

I was trying to estimate how quickly the compartments were flooding; how long before the water level rose higher than the compartments and then flowed freely from compartment to compartment. “In that case, Sir, I would venture to say that we have an hour, perhaps two.”

“I was thinking an hour and a half. I’m going up to report to the bridge. Keep the boilers in compartment ten at full pressure to run the generators as long as possible. I don’t reckon we need steam for the engines, we’re better off standing still in the water. That will give us a little more time. Keep all pumps manned and working. Good luck, Mr. Beringer.”

He shook my hand and went running up the stairs to the bridge to inform Captain Smith. I turned to double check that all pumps were manned and working. They were obviously being overrun. There simply was too much water coming in!

I went running up to the deck. Michelle was still standing where I left him. “The ship is making water,” I said matter of fact.

“How does it look?”

"The mail room is flooding." Michelle knew that was five levels below, the same level as my quarters and only one level below his and Lillian's cabins. "Go alert Lillian and her family," I instructed Michelle. "Bring them up, I'll meet you here."

I ran below decks to check the situation. The water had reached the F level in the mailroom. I gave them the order to go up on deck and take their lifebelts. I heard someone else yell, "Get your lifebelts and man your boats!" I gave the order to turn off boilers one through eight. I barked the order to release all the steam in them. A deafening hissing sound was heard as the valves were opened. That would lessen the possibility of explosions for the moment. When I was coming back up, I ran into Lillian and her family.

Lillian quickly recounted, "Michelle came and woke us up. He told us to dress in warm clothes and come up here. He said we're sinking. We did as told."

"Why have the engines stopped?" Mr. Hill asked.

"We hit an iceberg and we're flooding."

"It can't be. The *Titanic* is unsinkable."

I pointed towards the bow, "If you walk down the hallway it feels like you're going down hill. Mr. Hill, we need to get your family up to the deck."

A crewman in uniform appeared in the hallway yelling, "All passengers put your lifebelts on and go up to the top deck."

"Where is Michelle, Lillian?"

"Michelle ran into his cabin. He hesitated as he stared at the two paper parcels. We put on coats and warm clothing. He told us to get up to the deck. He said he'd meet us."

"Michelle stayed below decks?"

"He should join us any moment."

I led Lillian and her family to the alley on E deck that connected to the second-class staircases leading to the boat decks. Most of the third class passengers were moving right past the alley on their way to the Aft Well Deck. When we got to the boat deck I saw some men and women climbing into lifeboat No. 5 on the starboard side. I could hear first officer Murdoch say, as he shook hands with a uniformed crewman in the boat, "Good-by and good luck." They started lowering the boat. Only about forty people were in it. The boat could hold sixty-five people. "Be sure and see the plug is in that boat," someone yelled. More boats were being readied.

Murdoch was yelling, "Women and children first."

Lillian turned to me and said, "I'm not leaving my father and Michelle."

"Don't worry. The *Titanic* is unsinkable," I lied. "This is probably just a precaution. They put you in a boat, and once they are certain it isn't sinking, you'll be back."

"I'm not leaving my father and Michelle."

"I'm going to go below to look for Michelle. Wait for me here. Don't move. I'll be right back," I said soothingly. There was some panic among the crew. At that instant, with a loud noise, the first of the emergency rockets was fired. It went straight up and exploded high above in a brilliant flash that fell in multiple streaks toward the calm sea.

I ran down the stairs against the upcoming crew and passengers. I went past the third class dining saloon, before the Turkish baths and the swimming pool in E deck on the way down to the boiler rooms. "Authorized Personnel Only", read the sign on the steel door. The door opened and two men blackened by the coal came through. I jumped down the stair well.

I slammed the watertight doors shut behind the last stokers escaping from compartment 6. Soon the water would spill over into compartment 7. I estimated the tilt of the deck at about seven degrees. I felt a strange sensation. Down the corridor, I thought I saw Michelle waving at me. I waved back. I looked again, but there wasn't anybody there.

I was thinking, "The Titanic is going to sink. She's got maybe one hour left, maybe less. There is no time to waste. The lifeboats can only carry about thirteen hundred people. There are more than twenty-two hundred aboard. I need to make sure Lillian and her sister and mother get on a lifeboat now! I need to hurry! I doubt they'll let Lillian's father board. Many of us will die tonight. The water, it's too cold; none of us will live long, a couple of minutes at most. There simply aren't enough boats to save everyone."

I needed to find Michelle. He should've been with Lillian. In boiler room No. 5 I heard Engineer Jonathan Shepherd yell out as he fell in a manhole and broke his leg. Engineer Herbert Harvey continued to man the pumps. "Keep those pumps running," I encouraged as I tried to make Jonathan more comfortable.

I went looking for Michelle. I ran aft towards the third class cabins. I ran down the hallway with an ominous feeling. I got to his cabin and opened the door. The light was on. He was hanging by the neck, completely still, arms at his sides, feet off the ground. The expression frozen on his face was peaceful, like if he was sleeping. With curtain rope he had fashioned a noose, hung it from the light fixture between the bunk beds, and tied it to a hook on the wall. His left shoe had fallen off. His head tilted to the right. I shook my head. "No, no. This can't be." I staggered back, unable to take my eyes from his face. In a strange way I felt a deep sense of calm around him. I couldn't stop sobbing, fell to the floor, sat there looking up at him. I got up, and noticed one of the parcels had been opened, the brown paper cast to one side. The painting was lying on one of the upper bunks. It was a painting of a brown wheat field with ominous dark clouds above and thousands of black crows flying around in circles filling the sky. I went back to the hallway. Turned one last time and, Michelle seemed serene. "Good-by, Michelle," I thought, closed the door, leaned on the wall and took a deep breath. I had to take care of the living now.

Somehow I reached the boat deck and quickly found Lillian and her family.

"Any more ladies, this way," I heard someone cry from boat number 9. I saw two women being helped into the boat. "Lower the boat," someone yelled and the boat started to go down, again not full to capacity. I explained the situation calmly to the Hills, then lied, "Michelle is helping a few other people, he will be here shortly."

Boat No. 11, loaded to capacity with about seventy people, was lowered. The tilt of the deck was now very noticeable. Many passengers and crew were moving towards the stern to avoid the water.

"You are running out of time," I pleaded with Lillian's family. "Mr. Hill, you tell them. They have to get on one of these lifeboats! I'll help you get on another boat. They don't need to worry."

"Mr. Beringer is right. You must leave now. Hurry, girls."

Mr. Hill and I led them towards boat No. 13. A young girl asked if she could board. She was picked up and dropped in. The boat was being quickly filled.

"I don't want to leave Michelle. I love him. I'd rather die than live without him," Lillian said as she squeezed my hand.

I pushed Lillian into the boat. "I'll go get Michelle."

Mr. Hill pushed his wife and daughter forward. "I'll join you in a bit. Nothing to worry. Go." He kissed them and they were helped aboard. Sixth officer Moody gave the order to lower the boat.

Boat No. 13 started descending shakily towards the sea. The bow tilted down, then the stern. Mr. Hill waved a kiss at his family on the boat. Lillian waved back.

"Look for Michelle," Lillian shouted at me.

When the boat reached the water, the exhaust of the condenser pushed the boat astern. It now lay underneath the path of boat No. 15. The ropes were so taut that the release mechanisms on the boat deck would not work. It seemed inevitable that a tragedy was in the making; boat No. 15 would land on top of boat No. 13. At the last moment, the ropes were cut and boat No. 13 moved away. Another rocket flared up into the sky and burst with an echoing boom. For the first time I heard music faintly in the background.

"What do we do now?" asked Mr. Hill.

"I don't know," I looked to starboard and saw the eight lifeboats pulling away from the Titanic. The cold water loomed below. The forepeak of the ship was now submerged. I looked at boat No 13 moving slowly away with the gunwales only inches above the water. Captain Smith occasionally tried to hail some of the boats that were not filled to capacity with a megaphone; none responded.

"Come, Mr. Hill." I pulled him to the port side and quickly went towards the bow. Ahead I could see that boats No. 2 and No. 4 remained. They had been lowered to the level of the A deck. An officer was stacking chairs to serve as steps to go out through the windows to board the lifeboats. Mr. Thomas Andrews was trying to convince women to get into the boats, "Ladies, you must get in at once. There is not a minute to lose. You cannot pick and choose your boat. Get in! Get in! Don't hesitate."

"Come, let's go down to B deck," I said to Mr. Hill. We ran down the stairs. The water was now only a few feet below them. Boat No. 4 was being lowered. There was still some room. I grabbed a chair and broke the window. "Quick, Mr. Hill, I'll help you. You can jump in." I helped Mr. Hill up to the window. "Now, jump!" I encouraged. Precious seconds were passing by as boat No. 4 passed down. "You

have to jump now!" The boat passed down moving quickly as it was being lowered to the water.

Mr. Hill jumped as the boat hit the water and his waist landed on the gunwales, his feet in the water. Two women grabbed him by the waist and helped him in as they rowed away. I turned to see if there were other boats being lowered. I hesitated, thinking about how cold the water was. The boat was now out of reach. Mr. Hill was looking at me. I started to wave, and then stopped. The water was sloshing on the B deck. I went up to A deck.

I saw Captain Smith and followed him into the wireless room. "Men, you have done your full duty. You can do no more. Abandon your cabin."

They didn't move. "You look out for yourselves, I release you. That's the way of it at this kind of time. Every man for himself." I decided to go down and see if I could help anyone else.

I was moving aft on the C deck, retreating from the slowly rising water and then forced up to the B deck. The generators were still running. I saw the water advancing inexorably. The tilt was at least twenty-five degrees. I heard faintly, "Mr. Tom . . . Mister Tom . . ." Someone was calling my name.

"Over here," I shouted. I heard someone jumping onto B deck behind me and I turned. It was Michelle. But it couldn't be.

"I think the time has come. Hasn't it? The Captain said, 'Every man for himself.'"

"You must come with me now," I heard Michelle's voice as he vanished as suddenly as he appeared.

"Let's go," I answered to no one as I moved quickly aft and then up the third class stairs. All of a sudden a crowd began pouring from the first class entrance, many women among them. I jumped for the roof of the officers' quarters, and fell back and the advancing water hit my side. I jumped again and hauled myself unto the roof. A moment later I was dragged under as the bow dived. The water was so cold it felt like a hammer hitting my head, nails piercing all my skin. I was caught in a whirlpool. I was thinking about the wife I never had as I was pulled far beneath the surface. The darkness was total; the cold gripping and all surrounding; slowly I felt a very strong sense of calm overcome me. I could clearly see Michelle swimming in a pillar of light, his strong strokes pulling him upwards, but sinking alongside me. As I was being pulled deeper and deeper into the black waters, he swam towards me, took my hand, and pulled me in.

"Harder, stronger, longer, faster," I could clearly hear his thoughts.

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The brain creates a visual map of the outside world and integrates it with the map of the body and thus achieves the trick of moving through space. Similarly the brain is trying to create a continuum between all outside events and the internal emotional landscape, in a way that produces precisely the correct emotions to guide the best

responses according to the circumstances. Under certain conditions, emotions go away. Understanding how this happens is necessary if we want to understand suicide.

Some of the details are ultimately unknowable. No one is there to record the last few moments of a life snuffed out in an act of suicide. But even if one were present as a silent witness, in all probability the suicidal individual could not convey or communicate properly his emotions or rationalizations.

In the case of Mitch, as in most others, I can only speculate, but intellectually it seems reasonable to assume that certain factors presented themselves simultaneously and each one of them contributed to the final result. Any one of them alone, or even in combinations of two or three would not lead to suicide.

Mitch flew to New York on a Wednesday in November; he died the next Tuesday. A series of external stressors might have been added to his internal demons. Jet lag might have been one of the factors; short winter days; the weather was cold and cloudy the day he died; he had slept badly, or not at all the night before; he probably suffered a major panic attack the night before, and again that day; his pimples (he had with him medication for his skin) were acting up.

Added to this: his hopes that his simple, quick solutions to his problems were dashed, and in his state, became huge obstacles that could never be overcome; finding a path like everyone else (he was still confused about a Master's degree in Spain, his music career, making money); getting back together with his girl friend as a solution to his emotional instability was not happening; side effects of the medication; self medicating and taking the wrong dose of Paxil (I am pretty certain he was taking 10 mg per day instead of the 20 mg of each pill, which was the dosage he had originally been prescribed, but it is also possible he was taking the right dosage, 20 mg, every other day, but Paxil needs to be taken daily.<sup>95</sup>); the Paxil itself might have produced suicidal behavior as a side effect; and last, perhaps, Mitch had too many available choices.

Mitch had complained to me that there were no good-looking women in California, which is absurd, and after my return from Europe, I gave him a picture of a beautiful young Spanish girl who waited on us at her parents' restaurant in San Sebastian, partly as a joke, partly as motivation to get him back on track for going to Spain to pursue a Master's. A couple of days after his death, I was sitting on his bed, and there on the night table next to the bed, was the picture of the beautiful girl I had given him. It was as if he thought that being in love might be part of the answer to warding off depression.

It has not been proven conclusively, but at the time of this writing, many antidepressants are now thought, by some, to contribute to suicidal behavior, especially in children and teenagers. The F.D.A. is seeking a suicide caution label for ten antidepressants: Prozac, Paxil, Zoloft, Effexor, Celexa, Remeron, Lexapro,

<sup>95</sup> Armand M. Nicholi, Jr., M.D. Editor, *The Harvard Guide to Psychiatry*.

Luvox, Serzone and Wellbutrin. All of these medications affect the levels of serotonin. Some side effects might be agitation, anxiety and hostility.<sup>96</sup> Mitch was definitely suffering agitation and anxiety, and these symptoms, as best I can determine, were coincidental with his use of Paxil. But, it must also be said that he took the Paxil to alleviate his anxious feelings. This is the argument presented by the drug companies: depressed people have the highest suicide risk, and depressed people take antidepressants; consequently, the depression leads to suicide, not the medicine.

Suicide rates among the young have been increasing in the last fifty years. The use of antidepressants has been increasing, perhaps indiscriminately. The pressure on the F.D.A. to put warning labels on antidepressants is coming from concerned parents, who even though they can't prove it, feel that their children's deaths might have been caused by the antidepressants. A warning label is a minimum precautionary action. Yet, if the warning symptoms are the reason for taking the medication, once you read the warning label, how do you attribute suicidal behavior to the medication? If agitation, anxiety and hostility are symptoms that were not present originally, and appear coincidentally with the ingestion of the antidepressant, then, these might be considered warning suicidal signs.

In a recent study sponsored by the National Mental Health Institute comparing cognitive behavioral therapy and drug treatment (Prozac) for depressed adolescents the following was found: 71 percent who received Prozac and therapy responded well to treatment compared with 61 percent who receive Prozac alone, 43 percent who received talk therapy alone and 35 percent of those who received a placebo treatment.

The study also found that patients became significantly less suicidal, no matter which treatment they were given. No patient committed suicide during the trial. But the risk of a suicide attempt among patients given Prozac was twice that of those who did not. There were five suicide attempts among those given Prozac and just one among other participants.

In another study comparing Zoloft, an antidepressant similar to Prozac, with cognitive behavioral theory, in teenagers suffering from obsessive compulsive disorder, it was determined that those that received talk therapy improved more than those with the drug.<sup>97</sup>

On a more general level, and probably not pertaining to Mitch, the increasing rates of depression, especially among the young, have been attributed to a number of causes, most pertaining to our modern life styles, but have not been proven conclusively: the quickened pace of life, the technological changes that accompany

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<sup>96</sup> The Associated Press, *F.D.A. Seeks Suicide Caution for Ten Antidepressants*, NYTimes.com, March 22, 2004.

<sup>97</sup> Gardiner Harris, *Antidepressant Seen as Effective in Treatment of Adolescent*,. New York Times, June 2, 2004.

this, Nintendos and the internet, the isolation of people from each other, the breakdown of the family, the endemic loneliness, the failure of our belief systems (religious, political, social or moral),<sup>98</sup> the splintering of society into ever more finer special minorities. All of these are big stressors, especially among the young. Alvin Toffler would call it Future Shock. He discusses in the book with the same title, the increasing rate of change of everything around us as technology leads us into a manic environment with a frenetic pace.

The increasing reliance on medications to solve emotional problems (that in all probability are healthy and need to be worked through) can also be a factor, because as soon as the medication is taken, the emotional maturity that is supposed to be developed is warped.

The increase of suicide among the young, starting in the 1950s through the 70s and continuing on till the present, concurred with the appearance of television and could be indirectly related to it in that young children and adolescents spend more time interacting with the tube rather than socially.

Mood disorders are generally accompanied by sleep disturbances. Since the invention of television, the average time people spend sleeping has gone down by as much as two hours. Perhaps, the decreased patterns of sleeping, and not the increased television viewing, are contributing to increases in mood disorders, particularly among the young.

Coinciding with the advent of television, we have the introduction of the pill, and reduction of the average family size. Can fewer siblings, or loneliness be part of the puzzle?

There is probably a deep connection between stressful events and the triggering or worsening of psychiatric illnesses. And under the right conditions, this might well play a role in suicide. Stress has a profound effect not only on the immune system and production of stress hormones but also on the sleep-wake cycle, which is normally affected in mania and depression. It has been demonstrated that psychological stress, certain medications and illnesses, and significant changes in light and temperature can interfere with circadian rhythms.

Stress is also directly related to time of recovery, and the longer the period of recovery, the more extended is the period of vulnerability for suicide.

Prejudice has also been suspected as causing higher rates of depression, as this increases self doubts, undervaluing of people's lives, and ultimately, despair in the face of hatred.

High levels of stress, particularly as those faced by small groups of people living in ancient traditions under the realities of the modern world, such as African tribal communities, Amazonian tribes, subsistence farmers that are being forced to join larger nations, nomadic cultures that are being urbanized generally present high

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<sup>98</sup> Andrew Solomon, *The Noonday Demon*.

levels of depression. Even in traditional settings, depression has always been high among such people as the Inuit of Greenland, and suicide rates, in some areas, can be as high as thirty-five per ten thousand.

Children of depressed people, though not only because of possible genetic susceptibility, suffer higher depression rates. The earliest signs of childhood depression, in infants as young as three months, primarily occur to the offspring of depressed mothers. It is also a well known fact that depressed mothers are usually not the best mothers to begin with.<sup>99</sup>

Depressed and manic depressive people function quite well between bouts, but the repeated assaults slowly undermine the mind's flexibility and ability to adapt.<sup>100</sup>

Talking therapies have been proven to be good at keeping depression at bay, and recurrences at a minimum. Good, close, intimate friendships are increasingly more difficult to come by, especially during the formative years of high school and college. Intimate friendships might be part of the solution to avoid depression. Friendships, through sharing of dreams, fears and joys can be more beneficial than therapy—depression can be caused by loneliness. Friendships and family, through love, can be a most wonderful thing and the best medicine. The old man told me, "When you find love, hang on to it. You never know how long it will last."

I think most would agree that our present world and way of life is increasingly stressful. The lesson is simple; the more stress, the more depression; the more depression, the more suicide.

People suffering psychotic episodes and schizophrenia, though less frequent in the general population, and with lower rates of suicide, are the other important group contributing to the suicide statistics. Most of what has been mentioned that applies to depression and manic depression applies to schizophrenia.

I have not addressed people suffering from personality disorders, which are also at risk for suicide, because they are a small percentage of suicides, perhaps three per cent.

Kay Redfield Jamison, close to the end of the epilogue of her book on suicide, *Night Falls Fast* says, "I have been impressed by how little value our society puts on saving the lives of those who are in such despair as to want to end them. It is a social illusion that suicide is rare. It is not. Certainly the mental illnesses most closely tied to suicide are not rare. They are common conditions, and, unlike cancer and heart disease, they disproportionately affect and kill the young."

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<sup>99</sup> Andrew Solomon, *The Noonday Demon*.

<sup>100</sup> Kay Redfield Jamison, *Night Falls Fast*.

# Mitchell John

**F**ebruary 11, 2003: I dreamt that I was in a restaurant bar at some fancy hotel. It must have been hot and humid outside, as I could feel the coolness of the air conditioning. My father was there. I had the sensation I was acting as intermediary between two groups of “business men”, those present, and those far away. I was assuring those present that when they delivered, they would get paid. What they were delivering was not clear to me, but the situation seemed to be dangerous. I had the feeling I should leave as soon as I convinced them to deliver. It would be dangerous to be near them after the transaction went through.

I got up and went to the bathroom. While I was at a urinal, I heard the voice of my wife Pat speaking into a pay phone next to me. She was talking to her mother, who was telling her that Poul, her husband, was here. I said to Pat, “Poul is here? What the hell is he doing here? And for that matter what are you doing here? Where is he?”

Pat spoke into the phone and then turned to say to me, “He is outside, somewhere.”

“We have to find him. We have to get out of here!”

The danger of being close to these “business” men generated a sense of urgency. We walked out of the bathroom onto a street inside some huge building. About a block away, I could see Poul in the distance. I ran up a bank to the edge of the street and waved to get his attention. He saw me and started towards me.

At that instant, I saw a figure that was and was not my son Mitch. Although I recognized the figure as my son, it was actually Pat’s brother Mitchell. He was walking toward us, just a few yards away. My eldest son, Freddy was standing next to me. I felt very happy to see that my son Mitch was fine, even though the person approaching us was really his uncle Mitchell. He was wearing, as Uncle Mitchell would typically wear, some cutout-jean-shorts, black ankle boots, and a tight, white T-shirt to show off his body.

As he walked towards Freddy and me, a stereotypical black dude on a skateboard wearing helmet, kneepads and elbow pads passed close to Mitch. Mitchell tripped the skateboarder, who somersaulted onto his head, then flopped over onto his back. Mitch then calmly proceeded to place the heel of his boot on this dude’s mouth. As I moved to stop Mitchell, my son Freddy grabbed my arm and held me back. With a glance, Freddy made me understand that all this is regular protocol among skateboarders, and, of course, we both know that Mitch is among the greatest skateboarders.

At this moment, the upturned skateboard turned into a leopard-colored Harley Davidson lying on its side. Mitchell easily lifted it, started it, jumped on it, revved the engine and took off. As the street was wet and slippery, he snaked around and skidded. Showing off his talents as a motorcycle rider, he deftly fishtailed, both going and coming back. Uncle Mitch was a good motorcycle rider in his life, but this Mitch, who is both my son and his uncle, was in another class. As he approached us, he skidded, let the motorcycle slide and deftly jumped off. The motorcycle fell on its side and crashed into a column. Through all this, Freddy continued to restrain me, making sure that I didn't interfere with this ritual, which in my dream, everyone except me seemed to know was normal. At the moment when the motorcycle crashed against the column, I woke up.

"Beware of madness in the family," I thought.

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On the morning of October 31, 1979, my bother-in-law Mitchell was flying in from Los Angeles. He wanted to be with my wife Pat and me for the birth of our second son sometime late in November. He told me he was arriving at Mexico City's Benito Juarez International Airport at 5:30 in the morning. When I got there I realized there were two flights from Los Angeles; a Mexicana de Aviacion arriving at 5:25 a.m. and a Western Airlines arriving at 5:28 a.m.

At 5:25 that morning, it was foggy and still dark. I stepped outside the International Arrival and Customs area to smoke a cigarette. The airport seemed deserted. I saw some lights up and to the right of the parking lot through the fog. A few instants later, about eight hundred yards away and very close to the right of the parking lot I saw a huge fireball about three stories high and 150 yards wide. It engulfed the parking lot, which was about 50 yards wide. After one or two seconds, the fireball started subsiding, shrinking. I thought a fuel storage tank had exploded.

I quickly checked inside the Terminal to see if passengers were exiting from the Los Angeles flights. I checked my watch; it read 5:31. I figured I had enough time to run outside to see what had happened, come back and meet my brother-in-law Mitch as he came out after going through Customs and Immigration. I went outside.

There were still some patches of fire in the parking lot. I saw a man walking in a daze in what appeared to be a steward's uniform. I surmised that he had been inside a car and survived the blast. I asked him if he needed help. He responded no with a shake of his head and continued walking drunkenly towards the Airport Terminal.

Two young men passed me running, yelling something about saving their mother and aunt. Then I saw a jetliner's wing entangled in a wire fence. I had witnessed an airplane accident.

I stepped onto the wing. Now I could clearly see a big jetliner engulfed in flames. Two fire trucks arrived at the scene. The two young men who had passed me ran into the conflagration.

As I watched the firefighters start to hose down the plane, another man climbed onto the wing. After a few seconds he asked me if I knew which flight it was. By the size of the plane, I guessed, it was either the flight from Lima or the KLM flight from Amsterdam, as both were scheduled to arrive shortly after the two Los Angeles flights. At the moment I didn't think that the red-eye to Mexico City from Los Angeles could be a "big" airplane.

I saw a man walking quickly toward us on the tarmac. By the four gold bars on his uniform I knew he was an airline captain. He was the Captain of the Boeing 727 Mexicana flight that had just landed. I asked if he knew what flight had crashed. He said, "It's a DC-10, the Western Airlines flight from Los Angeles; the same flight that was behind me all the way," adding, "I have no idea what could've gone wrong."

The man standing next to me asked, with an Italian accent, "Do you have relatives on this flight?"

I automatically answered no, explaining that my brother-in-law was on the Mexicana flight. Turning to me, he said, very matter of factly, "My brother was on this flight." Then, sadly, "My brother is dead".

Looking at the scene in front of us, no one could argue with him. I checked my watch; it read 5:40. I figured I could wait about another five minutes before the passengers of Mexicana de Aviacion would start coming out of customs. I watched as the fires were extinguished by the fire fighters and was amazed to hear sirens approaching, indicating the arrival of some ambulances. I watched as the fire fighters loaded the first ambulance with what I assumed would be dead bodies. I read my watch: 5:45.

"Good luck," I said stupidly to the Italian standing next to me. He nodded. I ran back to the Terminal. Passengers were starting to come out the Immigration area. Passengers stopped coming out of the gate. My watch read 6:01.

For the first time, it dawned on me that perhaps Mitchell was on the Western Airlines flight. After all, when I talked to him the night before, he only said, "I'm arriving from Los Angeles at 5:30." He hadn't mentioned any airline.

Light was coming fast. The fog was lifting. Except for the sounds of ambulances arriving and departing, everything appeared normal at the Terminal. I ran back to the entangled wing. Now I could clearly see the blackened and twisted DC-10. I could see firefighters laying bodies on the tarmac. I saw the first TV crews arriving to report on the scene. I returned to the terminal.

I called my dear friend Mario, a captain flying DC-9's for Aeromexico at the time. He was up and had already heard the news. I asked him what the procedure in a case like this was. He told me, "Do not think the worse yet. There are many survivors in accidents like this."

"Not from what I saw," I answered. "Who could walk away from something like this?"

He briefly explained to me what the next steps should be. Western Airlines should have all the answers. I called my wife, who had stayed home at our friend

Enrique Gomez's house. I told her that there had been a terrible accident involving Western Airlines. I explained that it was possible that her brother could've missed the flight or for some reason had been detained in customs and had arrived on the Mexicana flight. I asked her to call California and see if she could confirm his flight and/or whether he had boarded it.

Later investigations would tell us what happened. As the Western Airlines DC-10 approached the runway in the early dawn, the visibility was less than 100 meters because of the fog.

"Western Airlines you are clear to ILS (instrument landing system) runway 23-Left, step down to runway 23-Right," the controller said.

The DC-10 was instructed to approach runway 23-Left, closed for repairs that morning, then shift to the right (step down) to 23-Right and authorized to land on runway 23-Right, which runs parallel to 23-Left. The approach lights on 23-Left were on to help guide the Captain, even though regulations prohibit having the lights of a closed runway on. The two runways are 500 meters apart, and the start of 23-Right is 500 meters farther away as you approach the airport from the west. Runway 23-Right had no approach lights.

"Roger. We are clear to ILS to runway 23-Left," the captain answered.

"Negative. 23-Left is closed. You should land on 23-Right," the controller answered clearly.

"Roger."

The controller should have asked for a read-back, but didn't. The captain at this moment thought that he was cleared for landing on 23-left, the tower thought the captain understood he was cleared for 23-Right.

NOTAMS (Notice to Airmen, a bulletin) are posted daily describing the operating conditions of all airports in the world; these bulletins include information on lights, approach systems, guidance systems, radar, emergency equipment, capabilities, etc. of each runway. That day's bulletin clearly stated that 23-Left of Benito Juarez International Airport was closed for repairs; it clearly stated that only 23-Left had approach lights.

"Do you have runway in sight?" Meaning 23-Right.

The DC-10 answered, "Yes." Meaning 23-Left is in sight.

The controller asks, "Do you have all your lights on?"

The copilot answers, "Yes."

The control tower radioed, "We can't see you. If you can see the runway, and have your lights on, we should be able to see you. But we don't."

As the DC-10 approached 23-Left, the control tower saw the lights, and the controller advised him, "You are too far to the left."

"Yes, we are a little bit to the left, but don't worry," the copilot answered. The air controller meant 500 meters to the left of 23Right; the co-pilot thought a few yards to the left of center of runway 23Left.

Silence.

The DC-10 landed on runway 23Left. Shortly after touching ground, the right landing gear slammed into a dump truck that was on the runway, killing the driver. With the impact, and not understanding the problem, the captain, instinctively and by training, pushed the throttles forward to maximum thrust and tried to go back up in the air. Planes are designed to fly, not to run crippled on the ground. The impact against the dump truck wrenched off the right landing gear, as well as damaged the turbine on the right wing. As a consequence, the DC-10 lifted up and veered to the right. At this moment, the captain must have seen 23-Right and realized his mistake. He probably would have lived another day if he had kept flying. These must have been the lights I saw briefly in the fog outside the airport as I stood smoking.

Instead, the captain, fatefully, decided to land on 23-Right. Moving at 180 miles per hour or more, the crippled DC-10 was brought down onto runway 23-Right. The captain was unaware that his right landing gear was missing. When the plane touched down, the right wing hit the ground and dug in. The jet veered sharply to the right, went off the runway headed toward some maintenance buildings next to the parking lot into which I was staring as I stood there smoking. The last words recorded by the black box were by the copilot, "My God, what a joke. We are going to die."

As routine procedure, one hundred miles before starting descent, the Captain should have the copilot read the NOTAMS and communicate with Operations using company frequency (each airline has their own frequency) for additional information or special requests. Operations should, at this time, assign a gate for arrival and remind the Captain of any anomalous situations, in this case, that 23-Left was closed for repairs. On approach to the airport, last minute information is routinely obtained using ATIS (airport terminal information service) frequency, which is specific for each airport. ATIS gives local meteorological information, runways in use, and other important general information. On that day, ATIS included the information that 23-Left was closed.

I was checking if any more passengers from the Mexicana flight were coming out, but my hopes were quickly dashed when I was informed that all the luggage had been picked up and there were no more passengers from that flight in the area.

I called my wife again, and she confirmed that Mitchell had boarded a plane in Fresno, to connect with the Western Airlines flight to Mexico City. "We have no confirmation that he did get on the plane in Los Angeles, but there is also no reason to believe that he missed the flight. He had plenty of time to make his connection. It is unlikely that he would have missed it," she said.

We both let this information hang in the air.

"It doesn't look good here, I'm sorry to say. I'll call you later, when I know more. I love you," I added as I hung up.

It was estimated that the DC-10 crashed into the building at over 100 miles per hour. The inertia of the huge airliner kept it moving forward. The left wing broke off, and as the fuel tanks ripped open on both sides, the fuel ignited. The fireball

engulfed the airliner and continued moving forward with its own inertia across the parking lot. This is the fireball that I witnessed. The left wing was the wing I was standing on.

The tail of the DC-10 broke off, flew over the parking lot and crashed into a house on the other side of the parking lot, across the street, near where the fireball ended. Strapped inside the tail was a steward. He unbuckled his seat belt, jumped out of the tail section and started walking toward the lights of the terminal. This steward was the man I had seen staggering around the parking lot. He was flown back to the States on the first Western Airlines flight out. Of 79 passengers and crew, 11 survived.

I later heard on the TV that the two young men, the ones that rushed past me and ran into this fireball, climbed into the DC-10 as the firemen arrived to fight the fire. Inside the plane with the fire still raging, they located their mother and aunt, got them out and loaded them into the first ambulance that arrived. The women survived.

When the right wing of the DC-10 dug into the ground, the fuselage ruptured. One man sitting next to the right wing was ejected with his set of three seats from the airliner. He bounced on the tarmac as the DC-10 sped on its final journey. He unbuckled his seat belt, and without a scratch, walked away. He was arrested for wandering on the tarmac, a forbidden area for strollers. No one believed that he had been aboard the crashed DC-10. He was released later that evening after he was able to prove the veracity of his story. When I saw him on TV, because of the likeness to the man I had met that morning, I immediately recognized him. He was the brother of the Italian who had been standing next to me on the wing.

Among the few survivors was a fireman. At the time he was studying to become a pilot. After the crash, the fire engulfed him and he wrapped himself in a blanket as he had been trained to do. He had burnt his hands badly undoing his seat belt. As he moved forward in the cabin he felt more heat, so, as he was trained, he retreated. As he did so, he fell out of the DC-10 through a crack in the floor. He was immediately pulled away by the firemen and rushed to the hospital in the second ambulance that left the scene. He spent nine months in intensive care. I heard his story many years later when he flew as a copilot with Mario, my friend, Captain for Aeromexico. The last I heard he had made Captain.

Not counting the Italian that fell unto the tarmac, sixteen people were taken alive in ambulances. By mid morning four had died. The next day, two more. Only three of the eleven survivors were not placed on the critical list.

After I talked to my wife, I proceeded to the Western Airlines counter. I was amazed no one was there. I yelled. When I got no response, I jumped over the counter and started knocking on a few doors. After all, one of their planes had just crashed. I thought that disregarding a few protocols would be appropriate on this occasion. Where was everybody? Finally, I got someone.

“In an accident like this, what is the procedure to reclaim a body?”

She looked at me in disbelief, "What are you talking about? I think you are mistaken. We've never had an accident in all the history of Western."

"I hate to inform you. But if you walk half a mile, outside the terminal, you can see for yourself."

She just stood there nodding her head in disbelief. It was obvious I wouldn't get anywhere. I remembered that I had once accompanied my pilot-friend Mario to a room upstairs, a sort of a pilots-of-Aeromexico waiting room. I went in search of this room. Without much effort I found it. Here, all pandemonium had broken loose. People asking what happened, people asking how it was possible, pilots searching for explanations, pilots offering explanations.

I saw an older Captain who seemed to be just contemplating the situation, rubbing his chin. I introduced myself and explained to him my problem, which in a nutshell, was how and where do you reclaim a body from an airline accident. I didn't mention the blackest thoughts that were crossing my mind: "What if there are no remains?"

He calmly said, "Don't lose hope yet. I heard there are survivors. As to the empty counter, don't worry. They are probably trying to figure out how they are going to react, instruct their personnel on these issues, but eventually someone is going to have to show their face and start answering all your questions. I would hang out by their counter or try their offices in this upper level." He pointed me in the direction of the offices. I thanked him. The hall was dark, the door closed, no sign of life there. I went back down to the Western Airlines counter. A few people were walking, loitering in front of the counter. Other relatives, I presumed.

As I sat there, still stunned, still trying to deny the facts, I thought about Mitchell. The day I met him he was seventeen years old. Ready to check out his sister's potential (in his mind) boyfriend. He was 5' 11" and about 180 pounds of pure muscle with wide shoulders and a waist as small as mine; redheaded with intelligent, bright, olive-colored eyes above a crooked, toothy smile. He wore cut-off-jean shorts and a pair of black ankle-height boots, and no shirt. I was two years older, 5' 10" and 140 pounds. The forty pound difference was impressive enough, but not enough to intimidate me. Still he was harder and stronger than most men I had met.

Mitchell informed me, "I'm going to start processing some olives. Do you know how that is done? Have you ever seen an olive tree?" He was delighted at my answers; in both cases, "No."

"Come, I'll show you my tree," he said as he spun and walked out of the garage where we had just met. There was another house across the driveway. I later found out that the milker lived in it. His responsibility was to milk twice a day the 120 or so cows that my future father-in-law had in production. Instead of walking around the house to where the tree was, as normal people would do, Mitchell stopped next to the house and turned his back to the wall. Then he gracefully jumped up, grasped an eave, and, in a combination of pull-up and a somersault, propelled himself upward and landed standing on the roof. "Come," he said smiling.

I considered my options quickly. I certainly couldn't repeat what he did. So I narrowed it down to what was essential: what did he expect from me? "I can jump high enough so you can grab my hand and pull me up. I think you can do that easily. I'm only 140 pounds," I taunted him. He thought an instant, smiled at my indirect acknowledgment that I couldn't perform his feat, and at the fact that I was right, he could pull me up, and I probably could not pull him up. Either way, he had made his point; he was stronger than I. When I jumped up, he grabbed my hand and pulled me up unto the roof.

When I was standing next to him he didn't let go of my hand. I could tell that he was pleasantly surprised at my agility and how high I had jumped; how, with my other arm and the coordination of my body's movement, I had made the task of pulling me up so much easier. Without letting go of my hand he looked into my eyes and smiled. I smiled, staring into his eyes, wondering what it was going to take to have his approval to date his sister. Otherwise, I kept a poker face.

Fortunately, I found out in the next few days, Mitchell liked to play chess. And more fortunately, I played a little better than he, and could generally win. I smiled as I thought of his expression as he concentrated on the chessboard, especially when he realized that checkmate was inevitable. Through chess, I was able to quickly get some respect and approval from him.

"How could this guy be dead?" I thought. "If anyone could survive something like this, it should be him. He seemed to have been preparing all his life just to be able to walk away from something like this. He was the man that ran and swam with chains on. He was determined to get stronger every day. He was always doing things to improve his musculature, as if brute strength could save the day. The welder, the mechanic who could fix anything; intelligent, resourceful and curious. He certainly had enough charm to wiggle himself out of any fix. But no, not this time. This accident was too hard, too fast, no time to plot an escape . . . . No matter how strong he was, this was stronger." I was pulled from my thoughts as lights turned on behind the Western Airlines counter.

There were only a few people, waiting patiently for information, aware that, like us, the employees of Western Airlines were in shock. As unimaginable as this accident might be, it was part of aviation, so it seemed inconceivable that the employees not be trained to deal with a situation as delicate as this one. Then, again, maybe they had been trained, but as years had gone by without an accident, they forgot what it was they were expected to do. The small number of people waiting reflected the fact that only a small fraction of the 71 passengers were Mexican. The majority of passengers were Americans, with a few Canadians. If I remember correctly, there were eleven Mexicans on that flight.

We waited for the person-behind-the counter to speak. We were aware that she knew why we were there.

"We are currently waiting for the official passenger list."

It was a little after nine in the morning, more than three and a half hours since the accident. "They could have flown the information from Los Angeles in that time," I thought.

"We know that twenty-two people have been taken to hospitals. We do not know who or what hospitals. We are also waiting to find that out."

"How hard can it be to send a Western Airlines employee to each hospital and figure out who the three, four perhaps six or seven people arriving from this accident are?" I thought to myself. I sighed in desperation.

"We hope to know more very shortly. I will keep you informed as new information arrives," she said with a smile. "I will be here all day and I will keep you informed. Thank you for your patience." And with that she turned and left through one of the doors behind the counter.

Not one of us had been allowed a question!

A woman in her forties, visibly upset walked towards us. She was surrounded and followed by several family members, probably children and nephews of hers. As she impatiently checked the counter and me, I informed her of what had transpired. "She will be back soon. They are dictating by phone the names from the actual boarding passes. That takes some time," I said as explanation.

A few minutes before ten, the Western Airlines representative returned to the counter.

"First, I would like to read the names of the few people that we have confirmed have been taken to the hospitals, and which hospitals." She named six people placed in two hospitals. "We do not know their condition, but it seems we know their names because they have identified themselves."

The woman with the entourage spoke angrily, "What about my daughter?" When can I get information on her?"

"What is your daughter's name?" the woman-behind-the-counter asked nicely.

She was told. She proceeded to look at a piece of paper as if it were a crystal ball. After a few tense moments, she looked up and said, as if she were talking about some delayed flight, "We don't have any information on your daughter. We are compiling a list from the boarding passes. As soon as we have that list, we will make it available to you."

"Do you know how many passengers were on the flight?" I asked just to check if they knew anything.

"Seventy-one, and a crew of eight," she answered crisply. "I think in about fifteen minutes or so the list should be ready," she said by way of explanation. Then she left.

The entourage was trying to calm the mother. She kept mumbling and crying, "Why can't they tell me? Why don't they know? How is this possible?"

I felt for her, as the size of my own loss seemed small compared to hers. Seventy-one minus twenty-two equals forty-nine. There are at least forty-nine passengers dead. There was hope, as my friend Mario had told me.

During the course of that day, I would become intimately familiar with the names of all the passengers of that flight. I would know who survived; who died on the way to the hospital; who died in the hospital and in some cases which hospital. I would also become painfully familiar with the ones there was no hope from the start, those that were taken directly to the City Coroner from the airport.

At ten forty five, the Western Airlines representative came back to the counter. She looked around uncertainly. Her eyes fixed on a woman in her early thirties standing next to me. "There must be a mistake," she said directly to her. "Your name is on the list. You were not listed as crew either." The woman-in-her-thirties was obviously an employee of Western Airlines.

"It's my daughter. She was on the flight. She had a pass," she managed to squeak out. As this information sank into the woman-behind-the-counter's brain, the woman-in-her-thirties reeled and started sobbing uncontrollably, leaning against the wall for support.

The woman with the entourage interrupted brusquely, "What about my daughter?"

"Please have patience. Don't you see that she needs help?" she answered.

I wondered if the woman-with-the-entourage had done the gruesome math: twenty-two against forty-nine. The woman-behind-the-counter, in her officiousness, obviously couldn't connect the concept that there could be more than one mother losing a child. I guess she couldn't understand that probably everyone on that flight could have a mother.

"I am her mother; I have a right to know what has happened to my daughter!" the woman-with-the-entourage shrieked at the woman-behind-the-counter.

The woman-behind-the-counter motioned to one of her assistants to help the sobbing woman-in-her-thirties. "I know this is hard for you," she said turning to the woman with the entourage.

"No! You don't. You probably don't even have children!" she yelled back.

"I am, please, going to ask you to refrain from yelling at me. I am going to read the list of passengers I have. This is a provisional list. There might be some mistakes, and this list includes the passengers taken to the hospitals, minus the six that I read earlier today."

I could hear the assistant consoling the sobbing woman-in-her-thirties, "Maybe she is one of the survivors; you can't rule that out."

"She's only twelve," she repeated disconsolately as if that were reason why she couldn't be a survivor.

The woman-behind-the-counter proceeded to read the list. They were not in any order I could discern. When she read the name of the daughter of the woman with the entourage, the woman collapsed on the floor, crying hysterically. No one could console her. Nothing could calm her down. I thought, as she probably thought herself, that she was going to die.

With fits and starts, the reading of the list resumed. During the reading the woman with the entourage cried, yelled and sobbed on the floor.

When the name "Mitchell Arias" was read, even though mispronounced, I felt a knife go through my head. "Forty-nine to twenty-two minus six," I repeated to myself with the increasing realization the unthinkable was possible.

Mitchell was dead.

Another woman brought a note to the woman-behind-the-counter. She read it. Looked up and beamed at us, as if she was the bearer of incredibly good news. "We have confirmed another six names of people in the hospital. These have been confirmed positively through identification carried on the persons. Again, I repeat I don't know their condition."

I guess it could be good news if your loved one was on that list. Mine wasn't. The odds were now sixty-one to ten that he was dead. Not good odds. My heart sank more.

"I'll be back as soon as I have more news." With this she turned to go.

"Where do we pick up the bodies? What is the procedure?" I asked, determined to see how much they knew or didn't know.

She turned before closing the door behind her, "I will find that out, and let you know."

Only the sound of the sobbing of the woman with the entourage filled the air. Otherwise the airport seemed eerily quiet.

"How is this possible?" I thought to myself. "A few hours ago I was picking up my buddy, my brother-in-law. Mitchell is only twenty-six years old! He was coming to be with his sister when our second son would be born in a few weeks. He was coming to help me build my grinding plant. He was a very talented mechanic and welder, even before he was a helicopter mechanic in the army. What could I tell my wife? What could I tell Mitchell's parents? I had already talked to Enrique Gomez, our dear friend, who was with Pat. My sisters had already arrived there. Pat would be all right without me for a while. I should concentrate on reclaiming his body as quickly as possible and then doing whatever Mitchell's parents decided."

A doctor mercifully had put the woman with the entourage to sleep with an injection. She was sleeping on the floor next to the counter. The Western Airlines employee, the woman with the twelve-year-old daughter had been whisked away by other airline employees.

The woman-behind-the-counter returned and announced, "The bodies are going to be sent for identification purposes to the Mexico City Coroner." She gave us the address and informed us that the process of identifying and reclaiming the bodies would start at 6:00 that afternoon. She identified one who had died in the hospital, three more names of injured people and the hospitals they were at.

There was nothing more for me to do there.

My wife, I found, when I returned to her side, was doing fairly well. Perhaps her pregnancy was shielding her from the terrible news. I sat down, held her hand.

I thought about Mitchell's invention. Inspired by observing the flight of insects, he had designed a propeller. He had given me a detailed description of it and had asked me to make some engineering calculations. The propeller consisted of two blades, 180 degrees apart. As each blade made a complete revolution, it would also turn on its axis 360 degrees, its movement mirroring the opposite motion of the other. My calculations, using classical mechanics, indicated that nothing would happen. Because the amount of air moved forward would equal the amount of air moved backward, there would be no net propulsion force.

More detailed calculations, which I was planning to do with him when he arrived, might yield some wobble effects. This could only be a problem producing vibrations in the bearings of the transmission. Mitchell, however, insisted that when you connected the propeller to a small engine and both to a boat, the boat would move forward without the typical wake normally associated with a boat's propeller. Even more interesting, he told me that if you held a lit cigarette in front of the propeller, the stream of smoke would be sucked into it, and emerged on the other side undisturbed.

"How could this be?" he had asked me enthusiastically.

Now, none of our experiments would come to be. At least not with him. Nothing with him forever more.

I reminisced with my wife about my first meetings with Mitchell at their dairy farm in Los Banos, California. The day after the episode with the olive tree, Mitchell told me, "We get ten cents for each magpie we kill. With two people it's a slam dunk; we can get 40 or 50 in a few minutes." He went inside the house and returned with a shotgun and some shells. He loaded the shotgun. "You are familiar with shotguns, right?"

"As a matter of fact, I have never shot one in my life." From the expression on his face, obviously, the wrong answer. I added as an explanation, "I grew up in Mexico City. You don't use shotguns there. I'm sure it can't be too hard to learn, can it?"

He explained the safety lock, aiming, and pulling the trigger.

"What we are doing is very simple. You see that levee over there?" he said pointing to a small ridge with a few trees about two hundred yards away. I nodded. "Well," he continued, "I'll go around and come towards the ridge from behind. You hide here. I'll scare the birds, and hundreds of them will come flying in your direction. You wait until they are straight overhead and as quickly as you can, take two shots. The pellets should get at least 50 birds. The trick is to fire when they are flying exactly overhead." He set out in a trot to go around the levee. I waited as instructed.

Suddenly, hundreds of black birds start flying towards me abandoning the safety of the trees. I waited; I pressed the shotgun against my shoulder as I had been instructed. I pointed the gun straight up in the air and waited for the precise moment when they would be overhead. As they passed over me, I pressed the trigger. The recoil of the shotgun at the angle I used it bore into my shoulder with tremendous force. If it wasn't for the fact that I was in superb physical shape, it surely

could have broken my clavicle. As it was, I wasn't really sure if I could move my arm. Still, I hit about twenty birds, which rained down on me.

Mitchell came walking towards me laughing his head off. I immediately understood the trap he had carefully laid for me. I proceeded to pick up the birds as if nothing had happened. When he reached my side, he was still laughing. In the most serious tone I could muster I said, "We should do it again. Look how many I got."

"They are gone. The birds won't congregate in those trees again for a few hours. It's not worth it. Let's go back to the house." As we walked home, he continued to laugh occasionally, as I pretended that nothing was amiss. I wasn't sure whether I had passed the test.

The next day, I got my chance to beat him at chess. I scored a few points with that, but I would soon be in another contest. Mitchell went to his bedroom and came back with two pairs of boxing gloves.

"I think that we should go at it for a few rounds," he said, throwing a pair of gloves at me. I knew that what little respect I had gained from the chess match would dissolve quickly if I didn't agree. And so I found myself boxing with Mitchell.

Luckily, I was very fast and could get out of the way of his punches, but my forearms took a beating that would show the next day as black and blue patches of skin. But I survived the barrage.

Next day, after I beat him at chess again, he wanted to have another contest. This time it would be a race. We would run from the ranch house, down the gravel driveway, about a quarter of a mile, to the highway. He was barefoot, and I pointed that out to him.

"I don't want to hear any excuses after I beat you. You better put on some running shoes," I chided him. I was starting to think that perhaps he had trained for the four-hundred race, the toughest there is, and that this was just another set up. I remembered, from my high school days, you simply go all out, and hope not to pass out at the end of the four-hundred-and-forty yards.

"I don't need any shoes to beat you," he said confidently. I was confident that I could beat him in the first two hundred yards, but after that it would depend on who was in better shape, and he was obviously in great shape.

We took off running. After the first one hundred yards, I was about fifteen yards ahead of him, and still pulling away. As I approached the halfway point, I started to fear seriously that I might pass out before I got to the end of the driveway. Then I heard Mitchell yell behind me, "O.K. you win. You win."

The next day, after I beat him again in chess, it was time for a motorcycle ride. I basically decided to just hang on to Mitchell, close my eyes and trust him blindly. I hoped he knew what he was doing. He interpreted that as being fearless; a couple of more points. Another chess match, and I added a few more points. Eventually I scored enough points. We became very good friends. Soon, I would have to go identify his remains.

That afternoon, Rogelio, my sister Pelusa's husband, and I arrived early at the Coroner's Office for the gruesome task of identifying Mitchell's body. His full name was Mitchell John Areias; he was twenty-six years old and single, with no children. Red hair, five-feet eleven inches tall, green eyes, one hundred and eighty pounds. Muscular and good looking. What else did they need? How many guys like that could there be on a flight?

There were many more people there that afternoon than in the morning at the airport. Some relatives of the Americans and Canadians had arrived that day, and more would come in the next. We proceeded to fill in some forms—these included physical description, clothing if known, jewelry or watches they were known to be wearing. I filled in the form as best I could.

The woman-with-the-entourage was arguing vehemently with some official, "I insist that I will go in and identify my daughter!"

He was gently trying to dissuade her, explaining that dead and badly burned or mangled bodies were not what she might want to contemplate. Several volunteered from the entourage to do the identification. "I am her mother. It is my duty! It must be me, I need to go see my baby," she wailed in response. Nobody could dissuade her.

The official called one of the forensic team, who stuck his head out the door, and smiled. The woman was motioned to follow him. She disappeared through the door.

I tried to follow the paper trail, hoping that I could discover a quicker means to get in and be done with all this. I noticed a young man dressed in doctor's garb coming to the door occasionally. I approached him and introduced myself. I explained quickly that the sooner some bodies were identified, the fewer people they would have to deal with later. It would be helpful if he assisted the family members that were already present to start the process. More would be showing up as soon as they could. He warned me of how terrible the scene was. When I calmly assured him I could handle it, he asked for my paper work. "Follow me," he said. "There are only two redheads here; this should be quick."

The victims of the accident lay all over the hall and in a couple of rooms. Many were laid out on the floor. The smell of jet fuel and the sweetness of burned flesh assaulted my nostrils. It is a smell that I will never forget.

"We aren't prepared to handle so many victims at one time," he said as an explanation. The bodies lay in all possible states. Some with missing limbs, others, with fractures. Some badly burnt and mangled. Others with no burns, nothing more than crushed skulls. I noticed that most of the women had the tops of their heads pushed in. Most of the men, in contrast, seemed to have part of their faces, from the mouth up to slightly behind their hairline, smashed inwards. Young and old; women and men. Some of the bodies seemed so peaceful, as if they were just sleeping. When the young doctor realized that I could handle this Dantesque scene, he asked me, "Would you like to see the bodies of the guys responsible for this tragedy?"

I must have nodded, as he quickened his pace. I followed without thinking. There were two black charcoal lumps lying side by side. Each resembled a torso with a head. On what was the left side of the chest, you could see the metallic glimmer of a pair of wings. I don't know what the young doctor was thinking. To me it seemed another terrible loss.

"Well, let me show you the redheads," he said after an appropriate pause. I followed. The first redhead he took me to see was definitely not Mitchell. I shook my head. He took me to the next room. There, lying next to the wall was Mitchell's body. I remembered the strange detachment I had when my grandfather had died in my presence three years before. I had felt no connection between my grandfather and his dead body. I was experiencing the same detachment. "This body is not Mitchell. It is the body that represented Mitchell," I thought to myself. I kneeled down next to him. A few years back he had caught his arm in a motorcycle chain as he made repairs on it. I turned his arm to look for the scar; it was shaped like a crescent moon. The scar was there. "It is my brother-in-law Mitchell," I said, intent on the official business of identifying a body as belonging to a certain person. Just a bureaucratic procedure.

"Are you sure? Look more closely. This is important," the young doctor emphasized gently.

I didn't need to see more, but I followed the forensic's instructions. On closer inspection, I saw he had fractured his left arm and leg, for sure the result of bracing himself for that final impact. From his nose up, his face had been smashed inward. There was no recognizable nose, eyes, or forehead. His mouth and teeth were the only facial features that were intact. I had no doubt that this fantastically well-built body was Mitchell; but from looking only at his face, I could not with any certainty identify him.

As I stood kneeling next to him, I looked for clues, anything about his last moments. I touched his body to see if maybe it would speak to me, tell me something, anything I could tell his sister, brothers and parents.

Today, after twenty-four years, I can still see his face clearly. There was no blood in his wounds. There had been no pain, but tragically, I could see the last frozen expression in his mouth, that of intense fear. I could not share this with his family. It would have to remain as a personal memory.

After a moment of respect, I tried to be somewhat casual, certainly more than I felt, about the whole affair.

"He died instantly." I said.

"Yes," the young doctor agreed. "He felt no pain. It was too quick. He didn't suffer. I can guarantee that." He looked at me kindly, then added, "Are you still sure it is your brother-in-law?"

"Yes, I'm sure."

He scribbled some things in a form, and asked me to sign it. He explained the procedure. A funeral parlor would take care of the body. In Mitchell's case, because he was a foreigner, the Mexican authorities were making the Social Security Funeral Service available at no charge. All that would happen tomorrow.

I walked out of there.

The woman-with-the-entourage was outside. She was explaining that, yes, her daughter was dead beyond a doubt. "I have positively identified my baby. I am her mother after all. I know my daughter better than anyone. She is coming home with us right now. They told me we could take her whenever we want." I hoped her daughter was one of the beautiful young women I had seen with hardly any injuries or burns.

The next day when I came to make sure that Mitchell's body was being taken care of properly, I found out the following: early that morning, the daughter of the woman-with-the-entourage arrived in Mexico City from Los Angeles. Her ticket said clearly that she was arriving in Mexico City at 5:28 a.m. on October 31. She had thought that she was boarding the plane, on October 31, but this daily flight was scheduled to depart at 11:58 p.m. the previous day. She had missed her flight by twenty-four hours.

Somehow she hadn't heard any news about the plane accident during that next day. At the airport in Los Angeles, naturally, no one talked about the accident of the previous day. Upon arrival in Mexico City, she, of course, was very surprised to see that no one was waiting to pick her up. So she hailed a taxi and went home. When she arrived at her house, she realized why no one had gone to the airport. There was a funeral and a wake going on.

"I wonder who died?" she thought.

Even at this early morning hour, as the sun was just starting to rise, many cars were parked outside and people talked in hushed tones on the driveway in front of the house. She proceeded to walk unnoticed into her house. I can't even imagine the commotion when someone saw her alive. The body that had been taken the night before was returned to the Coroner's with the finest dress of the girl-that-had-just-walked-into-her-own-funeral. I felt very happy for the woman-with-the-entourage. So much for how well that woman knew her own daughter's body!

Her name hadn't been erased from the reservation list and somehow stayed on the passenger manifest. This young woman had missed her flight accidentally and lived. Mitchell didn't miss the flight and died.

The Mexican Government assigned an agent to help me expedite all the bureaucratic paperwork to take Mitchell's body back home to California. His was the first to leave Mexico. There was some consolation in that fact. I had done all the red tape as quickly as possible. I had done all I could.

The next day my wife, eight months pregnant with our second baby, and my son Freddy, not two years old, boarded the same plane that was carrying Uncle Mitchell home. We were going to his funeral.

My wife remained in California for our second child's birth. Our Mitchell was born around noon on November 23, 1979. I was there to witness his first breath.

# Suicide

*Why do people commit suicide? Like most airplane accidents, several elements have to converge to produce a situation conducive to an act so contrary to life and the survival drive. Even though I am enumerating them in a particular order, the first condition is the only one that is truly necessary, although not the only one, for suicide to occur.*

*First, and probably foremost, a person must experience a loss of the sense of self. This condition is often, but not always, produced during depression and the depressed phase of manic-depression and occasionally in schizophrenia and schizophreniform disorder. With slowed thinking or disorganized thinking, negative emotions are triggered and brought to the surface. At the same time, because of the effect of the negative emotions on the brain, certain modes of thinking, primarily all the memories associated with positive emotions, are partially inaccessible. The inaccessibility of these memories produces a distortion of the sense of self that generates a condition that skilled writers cannot begin to describe adequately. There are no words for it and the best one can hope for is a good image: I could not find love in myself, a skittering black darkness, had a berth in a pounding hell, a veritable howling tempest, downwards into hell's loneliest black depths. I feel that by combining several descriptions, a better sense of this condition can be conveyed: the hidden, shadowy terror of devouring misery crashed down on me with a clammy chill.*

*Because it is so important to understand this mental state, I have given it its own special name, *idiozimia* (from the Greek, *idios*=self and *zimia*=loss). And, I have named a partial reduction or diminution of a sense of self, *archidiozimia* (from the Greek *archi*=beginning).*

*Idiozimia is perceived as a menagerie of simultaneous negative feelings, which produce in the individual who suffers from it, a torment greater than the sum of each of its parts. The combination of negative feelings is individual to each person, and this makes each individual's experience different. Just as each person has unique memories, so each person will experience depression uniquely. Each individual's thoughts and experiences are unique, and when they are activated by the negative emotions, will be expressed in special ways.*

*A history of a diminution or loss of the sense of self must be the most important predictive symptom of a potential suicide as this is a necessary precondition for suicide to become possible. But *archidiozimia* or *idiozimia* is not a sufficient condition either; other elements must be present. Suicidal thoughts might be a manifestation that *archidiozimia* or a complete loss of self are present but are not in themselves proof of anything. Suicidal thoughts could have been caused by a previous *idiozimia* even if at the present moment the self is intact. The problem, however, is that *archidiozimia* or *idiozimia* can present itself abruptly and unpredictably. And the loss of self cannot be judged by outward appearances either.*

*A second element is suicidal thoughts. The state of archidiazimonia allows suicidal thoughts to emerge which otherwise would be unthinkable. The possibility of inflicting damage to oneself becomes less illogical. There is a huge gap between suicidal thoughts and acting on them, but once the thoughts are part of a possible solution, the gap becomes smaller. The continued intrusion of these suicidal thoughts slowly makes them seem more possible, more likely. A plan might emerge; this is a real danger sign. The tools or methods for suicide might be perfected or put into place; a very serious sign. At this point, if idiazimonia is present, it might just be a matter of time.*

*Third element: the slow vanishing of inner strength. The intense suffering that accompanies depression and some combination of symptoms in schizophrenia and schizophreniform disorder can be so acute that ending one's life becomes a real alternative. The effort to stay alive in the face of extreme torment seems insurmountable. The struggle to continue a semblance of normalcy uses up all possible energy; only in the mildest or very moderate cases can this outward appearance be achieved to begin with. Hardly any energy remains to do anything else. The desire for calm and peace might be overwhelming but the effort necessary to achieve this seems elusive and impossible. The strength to continue living erodes slowly until death seems a welcome act.*

*Fourth element: hopelessness. The suffering becomes so great that the situation starts to feel hopeless. Relief from the pain seems beyond one's grasp. That the suffering might eventually subside does not seem possible. Slowly, death becomes a longed-for relief. The renewed negative feelings, after having enjoyed a respite, can spiral out of control. Disappointment and frustration add up to all other negative feelings. Perspective on the nature of the pain is lost, magnifying its intensity like a long felt toothache pushing the individual slowly to a form of insanity. The seeming hopelessness of the situation needs to be obsessively ended. A quick solution becomes imperative. The wrong solution, if continued existence is considered a desired goal, is quickly equated with death. However, if ending the hopelessness of relieving the suffering is considered a necessary goal, death becomes a logical act.*

*Fifth element: damage to the hippocampus. Because of prolonged and intense stress, secretions of glucocorticoids damage the hippocampus. The hippocampus will store and retrieve the memories of all related objects to the event, in this way creating a context. When the hippocampus is damaged, the emotional context will be perceived wrongly. The negative emotions, put into the wrong context, will exacerbate the effect of the first four elements.*

*Sixth element: this is so important that I have given it a special name, the phobothymic switch (from Greek, phobos=fear and thymos=wrath or anger). This element might be independent of the second, third, fourth and fifth elements just described. It is common that depression or schizophrenia is accompanied by anxiety or panic attacks. Depression and schizophrenia are states that clearly indicate that something is wrong, and the fear and anxiety associated with these states could be normal responses to a dangerous mood disorder. In order for the amygdala to build up a fear response the prefrontal region must be shut down, otherwise the prefrontal lobes signal the amygdala and fear slowly dissipates when danger is not present. However, when the amygdala is completely unchecked by the prefrontal lobes, the fear escalates and a panic attack ensues.*

*The first step of the fight-flight response is freezing, a strategy that helps fool predators into thinking that you are dead, or makes it harder for them to detect you. At this moment the*

*phobothymic switch can go either way, fear or aggression can be equally possible. Freezing also provides a small amount of time to evaluate the threat and determine to flee, attack, or simply return to a resting state: false alarm. This state feels strangely both like anger and fear, like a prickling sensation down the spine.*

*When the anxiety attack or the fear escalates into a full-blown panic attack, there can come a moment, when suddenly the phobothymic switch is activated: the flight mechanism switches to a fight response. The uncontrolled fear turns into uncontrolled aggression. In this aggressive mode, the perceived threat, in this case an irrational panic, which is translated to a feeling of imminent death, is immediately faced down with an anger attack. A confrontation with the biggest known fear, imminent death, becomes not only logical, but seems the only solution, the only way to win, the only way to survive. When the tiger has chased us into a dead-end canyon and there is nowhere to flee, we inevitably turn to face it and fight it to the death. There is no other choice. In a normal, healthy situation, at some point the threat is evaluated (not rationally, there is no time) by the cortex and determined that escape is impossible, or conversely, that the threat can be removed by quick action. Either way, the amygdala receives a signal from the cortex, and automatically the response changes from flight to fight mode; from fear to anger; from a panic attack to an anger attack. It is two sides of the same coin. The phobothymic switch is an elegant engineering solution to automatically and quickly change the strategy for survival; at some point, the organism is better off fighting than fleeing.*

*The question then becomes when, not if, the panic turns into a fight mode. In this particular instance, when the individual is also experiencing idiozimia, or even archidiozimia, this switch into an aggressive mode becomes lethal. Each individual, according to his or her experience, will have a different point at which he or she will go from a flight mode to a full fight response. This point is probably impossible to determine in advance. Being young and male probably increases the probability that this will happen. I suspect that the stronger, mentally and physically, an individual is, the lower the threshold for the panic attack to switch to aggression.*

*The phobothymic switch described is probably the reason why we lose so many young with no forewarning signs. They, themselves are not even aware that this could happen. The first time they experience this is their last. If they survive this first experience, because of some distraction or interruption, they will then move into the category of potentially suicidal. Most of us don't know how we are going to react to a huge threat we have never encountered before, until we are faced with it. Similarly, the phobothymic switch will flip over to attack mode during a panic attack without warning. When this happens, the greatest possible type of aggression, the suicide, lashing out and killing the source of danger, killing oneself, the cause of the panic attack, is a response that the victim hadn't even contemplated before.*

*In some instances, mostly in the case of women, the choice of method for suicide is benevolent enough that the chances for surviving the attempt are greatly increased. Women in general choose less violent physical means to end their lives, increasing the number of suicide attempts in comparison to young men who in turn have a higher suicide rate than women.*

*Out of the despairing darkness, a calm collectedness came over Mitchell as he embarked on facing the greatest fear, death, itself. He went from panic to complete aggression; using what was readily available he fashioned his weapons. He fought his last battle and won. But by winning could never rise again to fight.*

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The day before Mitch died, I was reading an article in *Time* magazine related to Freudian ideas. Four days after his passing, I stumbled on the open *Time* article, and the word “aggression” jumped out at me from the page. Immediately, intuitively, I understood that aggression was deeply connected with fear and panic attacks; that the fight-flight response has two sides. My intimate knowledge of my son allowed me to quickly understand a part of why and how he committed suicide. His panic had turned into anger. Mitch was a special case. If I wanted to help others, I needed to explain, not only the specific case of my son, but also all suicide cases. Eventually I was able to put it all into a scientific framework.

Independent of everything, the truth is the system is not equipped to deal with cases like Mitch’s. First, Mitch failed to understand the true nature of his affliction because there was no one to explain to him the potential dangers. He underestimated the powerful forces of his depression and overestimated what he could achieve mentally and willfully. Partly for these reasons, and perhaps because of a certain shyness or even embarrassment, he did not share with others much of what did go on under the surface.

Second, I was caught almost completely unaware of how dangerous and how quickly Mitch’s situation could deteriorate. In our family I had made it my responsibility to oversee and help Mitch get through his depression and panic attacks. My ignorance led to a false sense of security.

Third, there was no one at his high school that was familiar with mental illness in general and suicide in particular, especially when this problem has been on the rise among the young for the last few decades. At college there were medical services that included several psychiatrists, but they diagnosed him as not suicidal.

Fourth, the privacy laws concerning a doctor’s diagnosis do not, unless special forms are signed, allow doctors to communicate with friends or relatives. Therefore, the necessary education of family to help achieve a successful resolution becomes less probable. If the patient denies the seriousness of his or her condition, as often happens, and she stops either her medication or the visits to the doctor or both, the family is not alerted of the lack of follow-up that is so necessary. The privacy laws are such that physicians need to go out of their way for release of information. They are too busy to do so. The privacy laws need to be changed so that family and friends, not everybody, can easily be alerted and warned about particular symptoms that can be lethal or which could be potentially indicative of suicidal behaviors in order to help prevent more unnecessary deaths.

Fifth, the failure of the medical profession is partly due to certain arrogance “that we are experts and know how things are supposed to be”. I am not implying that such an attitude pertains to all doctors. And this attitude, present in most branches of human knowledge, is widespread in the rest of the medical community. Medical practitioners spend little time explaining why they diagnose something, or

what the diagnosis means, even less on how they decided on a particular treatment and definitely, say nothing about what they don't know. I am not implying that there is malice. In many cases it is expedient, quick and easy. Doctors are just following a standard routine or procedures, get paid for them, and move on to the next patient.

Many times, perhaps, doctors should say, "I don't know," or "I don't understand." There should be some humility in the face of uncertainty and ignorance.

In many cases the message that gets through to the patient is, "The doctor is not listening to me." Or the patient yields to the professional in the white coat, "The doctor knows best." Or, as in Mitch's case, "They can't help me," or "There is very little they can do."

Sixth, the system failed to educate the public. Doctors fail to educate patients and their relatives on the possible outcomes, particularly in the case of depression, manic depression and schizophrenia. It should be imperative that they alert their patients and family about dangerous possibilities, even though these might be considered low (by the doctors), like a one in five or one in six. At the very least, educate their patients in what they know and what they don't know. Educate their patients on dangerous signs, or if ignorant of this, at least alert the patients about the limitations of their knowledge. Schools and Universities should have some programs to educate their students and faculty on the basics of mental disorders and suicide among the young. Even if only a few students or faculty are aware of some of the signs, help could be provided quicker in some cases.

We need to eliminate the shame or embarrassment we feel about mental illness, and see it for what it is—a disease like any other. This requires extensive education of all. In particular, the people in contact with our young in our schools should be made much more aware of suicide, its signs, its prevention and cure. Psychiatrists and psychologists are continuously coming into contact with people suffering from mood disorders, and they are not alerting friends and families to the terrible dangers of these illnesses that in the extreme culminate in self-destruction.

Seventh, concerning certain mental disorders, there are severe limitations in what can be accomplished with medication or therapy today. Most therapies and medications are only scratching the periphery of the problem. For example, in depression, medications are concentrating on serotonin enhancing properties, instead of addressing the glutamate and GABA imbalance I propose. Low levels of serotonin, norepinephrine or dopamine are a result of this imbalance, and when medications correct levels of one of these neurotransmitters, in a few cases it helps, but in many it doesn't. In manic depression psychiatrists are mostly trying to control mood swing with lithium or other medications, again not paying attention to the glutamate and GABA relationship. Lithium contributes to slowing down the effects of sodium in producing neural pulses and indirectly regulates the excitatory nature of glutamate. In the case of schizophrenia, the use of psychotic drugs, mostly dealing with dopamine, is partially on track, but psychiatrists are disregarding the fine balance between dopamine and acetylcholine that I propose.

We need improved therapies. Therapies are only partially successful, and sometimes only in a small percentage of cases, because they are not addressing the real connections between memory, thinking and emotions. Emotions have the purpose of eliciting certain modes of thinking and activating related memories. Certain types of thinking or memories can elicit related emotions. Therapies for certain mental disorders, like medications, fail to address this fundamental issue except in a roundabout way. When therapies achieve a partial improvement, or even enjoy a success, it is only in very specific cases when the issues in a peripheral way indirectly alleviate the problem. However, at the very minimum, therapy helps to make some sense of the confusion, can return some sense of control, and gives hope.

Eighth, we need to change the laws concerning insurance of medical benefits with respect to mental disorders so they are properly covered and included in all health policies. This requires education of politicians. It is imperative that financial reasons should not get in the way of treating mental sickness.

Over a period of five years, in part, because most of the time Mitch was fine, all these things conspired against him. Like in the case of his uncle's death, many small mistakes led to a deadly end. Anyone of these small mistakes, alone, would not have been fatal. Paradoxically, if Mitch's condition had been worse, any one of these factors might have been changed, and affected some of the others, and his death avoided.

Changing or improving the situation in each and every one of the system's shortcomings is the ideal goal. But any change that can be effected will decrease the chances of suicide.

This has been the story of how I came to find some answers to the question of why, less to the question of when. In most cases suicide is preventable, but more needs to be done. It is definitely possible to change some of the connections in the brain through the two-way avenue of thoughts and memories with emotions and their deep interrelatedness. The profound connections between emotions and their facial and bodily expressions should also be explored as potential tools in the war against mental illness. From my explorations, new and more effective therapies can be developed.

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A few years ago, Mitch and I were alone, looking out into Carmel Valley from the heights of the back terrace of our house. Two rainbows suddenly materialized over the valley. The event was memorable, not only because of the double rainbow, but also the intensity and proximity of them. The colors of the rainbows were very sharp and had an almost solid quality to them. From our perspective we could clearly see down into the field where the rainbows touched the ground. The rainbows seemed to hover a few feet above the field, almost, but not quite touching the earth, arching upwards, high into the sky.

“Look, Mitch, there is no pot of gold at the end of the rainbow,” I said jokingly, pointing to the field below us.

“You can’t be sure of that. What about the other end?” he answered grinning.

~

Lying on my terrace one afternoon, looking out on the oak and pine covered mountains, I was thinking about Mitch and rainbows. I closed my eyes, and gradually felt a calmness and peacefulness cover me like a down blanket. Under the warm sun, my mind began to drift, and my body with it, until I could see myself far below sleeping on my deck chair. I was drifting away. Then I heard a familiar voice:

“Who loves you, baby?”

I saw Minnie bathed in a radiant light. I had never seen her so beautiful. Her green eyes sparkled and her brown hair glistened like gold. She looked twenty-five years old. We were in a beautiful garden, filled with plants of every color of the rainbow. She came up to me and put her hand around my waist. I put my arm around her shoulder, as if it were just yesterday we had seen each other.

“Come with me,” she said. “Tito is here. He’s been having a great time.”

The most beautiful music floated in the air ever so subtly increasing in volume. Then I saw him. Tito seemed younger, about my age. He was directing a huge ensemble of musicians. Every imaginable instrument was represented, some of which I’d never seen. Tito was dressed all in black, in long tails and had a long luminous baton with a greenish hue in his right hand. The horns added to the strings, the percussion to the horns, slowly building a crescendo. It was so beautiful! Turning to me, Tito flashed a smile. “Freddy. Welcome!” He continued directing the orchestra with his baton. I stood there mesmerized.

Then, materializing out of nowhere, Vincent stood there with a smile on his face. His eyes were the exact same green as Tito’s. “Good to see you,” he said to me. “You always had hope. You never let up. I see you have been writing. That is good.” His red hair was unkempt, his beard of several days’ growth, but I didn’t care. I tussled his hair, I was so happy to see him. We laughed.

“I still can’t get over how much you look like my brother-in-law.”

“You mean how much he looks like me.”

And suddenly, Captain Lewis was standing there in front of the three of us, his teeth showing with his special smile. “You have been in the wilderness for some time. I see you’ve been on a long journey. That is good.”

“I couldn’t have done it without you. Let me hug you,” I said as I embraced him. Meriwether held me tenderly.

“But you did it,” Meriwether whispered in my ear. “You have furthered the possibility of happiness and advanced the information of the succeeding generation. You have opened new paths. You have found some answers. That is good.”

Suddenly the whole orchestra went silent. The sound of a clavichord permeated the air. It was music of such sweetness, as I had never heard before. It vaguely reminded me of the concert of Aranjuez. I tried to locate the source of the music.

“Come,” Minnie said, pulling my hand, and she led me towards the huge assembly of musicians. In a small garden, next to a pond, I saw Juan playing, swaying his head to the rhythm of the sweet music with his eyes closed. I turned to Tito, and he nodded. As he conducted with his baton, the orchestra joined in, first the strings, then the percussion, then the horns. Juan finished his part and the orchestra continued softly but intensely. He turned to me and gave me the thumbs up. Then he stood and walked slowly to me and, when he reached me, he placed his hands on my shoulders.

“That music was beautiful.”

“It is about success and friends. It is never finished, it is a labor of love. I know your labors have been fruitful. That is good.”

I heard another familiar voice calling me as I turned to face Miguel. “It has been a long, long time,” he said as he rubbed his bronzed hands reminding me of the old man in Amacuzac. Miguel noticed and smiled, “Love is the most important thing. If you find it, hang on to it tightly. Hang on to it, because you never know how long it is going to last.” He opened his hands, palms up, and then slowly he pressed my shoulders. As he lifted me up, he increased the pressure and stared into my eyes. I smiled in recognition, remembering my fear in my dream. His green eyes reflected mine. He slowly put me down, and let go. His perfect straight teeth shone with a smile.

“Too long, indeed, Miguel.”

“I see you have been digging deep. That is good.”

“There still is unfinished business,” Minnie said.

“Yes,” I nodded and held her as she laughed.

“Who loves you, baby?” Minnie said, then put an arm around my waist. It felt good to have her next to me again.

“Remember what Susana told us, ‘As you travel, lighten your load by giving. The lighter the load, the farther and faster you can go. In life it is all about giving love.’ You sure did that, Minnie.” I reminded her.

I heard a familiar giggle and I turned to see Michelle and Lillian standing next to Minnie and me. The three seemed bathed by a golden light.

“You look well,” Michelle said enthusiastically as he took my hand and shook it. “Well done. Good Job. A tremendous effort.”

“It’s good to be with you,” I said.

“I see you put your engineering skills to excellent use. That is good.”

Lillian smiled at me and gave me a kiss on the cheek. “Welcome back. It’s great to see you again.”

“Yes, indeed. But I have never left. You look as beautiful as ever, Lillian.”

“Thanks. I see you have cried a lot. That is good.”

“Perhaps you don’t understand this, Lillian. But you saved me countless times in my moments of solitude.”

And there behind them was my brother-in-law Mitchell. He was sitting in a chair with his legs casually stretched out, right boot crossed over left ankle, arms relaxed on the armrests. A blue tail hawk was standing on his shoulder. To one side, a small table was set up with a chessboard.

“Yeah, I know,” he said after I stood before him, speechless, for what seemed a thousand moments. “You did superb, Fred. You’re doing well, all things considered. Come join me for a game of chess. Like old times, just relax and take it easy. That is good.”

The hawk stared back at me; he seemed to be smiling enigmatically. I stroked his head, and it warmed to my touch. The feathers felt soft. I rubbed his head again with my index finger. He closed his eyes and stood perfectly still.

The music came to an end on a sweet chord that faded, it seemed, interminably slowly. I smiled inwardly, then I turned to Tito as he silenced the orchestra with his baton and my sister pushed me forward.

“Go greet him,” Minnie whispered.

And there he was, in a soft, warm light, walking briskly with his hands in his pockets, timidly looking at the ground, then at me; he smiled his typical smirk, his straight teeth shining, his red hair floated in the breeze, a red tail hawk flew a couple of feet in front of him seemingly suspended in the air; a circular rainbow shone behind them. The hawk’s golden eyes focused on me.

I realized Mitch had always been and would always be with me. As he neared, he made a fist with each hand and stretched his arms upwards in a sign of victory. “Well done, Dad. We did it! That’s good.”

Indeed we had found some answers.

The hawk floated towards me and landed gently on my right arm. And it felt good.

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