The Boy Who Was Raised as a Dog
And Other Stories from a Child Psychiatrist’s Notebook

What Traumatized Children Can Teach Us About Loss, Love, and Healing

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positive values. When Virginia had a second child, she knew how to care for him appropriately, right from the start, and he suffered no growth problems. Virginia went on to college and both of her children are doing well in school. They have friends, an invested church community and, of course, Mama P. just down the street.

Both Laura and Virginia still bear scars from their early childhoods, however. If you were to secretly observe either mother or daughter, you might find her facial expression vacant, or even sad. Once she became aware of your presence, she would put on her social persona and respond appropriately to you, but if you paid close attention to your “gut” you would sense something awkward or unnatural in your interactions. Both can mimic many of the normal social interactive cues, but neither feels naturally pulled to be social, to spontaneously smile or to express warm nurturing physical behaviors such as a hug.

Though we all “perform” for others to some extent, the mask slips easily for those who have suffered early neglect. On a “higher” more cognitive level both mother and daughter are very good people. They have learned to use moral rules and a strong belief system to tame their fears and desires. But in the relational and social communication systems of their brain, the source of emotional connections to others, there are shadows of the disrupted nurturing of their early childhoods. The nature and timing of our developmental experiences shape us. Like people who learn a foreign language late in life, Virginia and Laura will never speak the language of love without an accent.

Chapter 5

The Coldest Heart

Entering a maximum-security prison is always daunting: after the extensive identity check at the gate, you have to hand over your keys, wallet, phone and anything else that could possibly be stolen or used as a weapon. Everything that identifies you, except your clothing, is confiscated. One of the first locked doors you pass through is marked by a sign saying, in effect, that if you are taken hostage past this point, you’re on your own. The policy is ostensibly to prevent visitors from pretending to be held captive by prisoners and enabling their escape, but it also immediately instills an unsettling feeling. There are at least three or four double sets of thick metal doors, with many layers of human and electronic security between them, which slam solidly behind you before you can meet with the kind of prisoner I had been brought in to examine. Leon, at age sixteen, had sadistically murdered two teenage girls, and then raped their dead bodies.

Virginia and Laura demonstrated one way that neglect in early childhood can disrupt the development of the areas in the brain that control empathy and the ability to engage in healthy relationships—a loss that often leaves people awkward, lonely and socially inept. Emotional deprivation in the first years of life, however, can also predispose people to malice or misanthropy. In the mother’s and the daughter’s cases, fortunately, despite their underdeveloped capacity for empathy, both became highly moral people; their early childhood experiences had left them
emotionally crippled and often oblivious to social cues, but not filled with rage and hatred. Leon’s story illustrates a much more dangerous—and fortunately, less common—potential outcome. Leon would teach me more about how much damage parental neglect—even unintentional neglect—can inflict, and how modern Western culture can erode the extended family networks that have traditionally protected many children from it.

Leon had been convicted of a capital offense and faced the death penalty. His defense had hired me to testify during the sentencing phase of his trial. This hearing determines whether there are “mitigating” factors, such as a history of mental health problems or abuse, that should be weighed when sentencing decisions are made. My testimony would help the court decide between life without parole and the ultimate punishment.

I visited the prison on a perfect Spring day, the kind of clear day that makes most people happy to be alive. The cheery sound of chirping birds and the warmth of the sun seemed almost inappropriate as I stood in front of the massive gray building. It was five stories tall and made of cement block. It had too-few barred windows and a tiny green one-room guardhouse with a red door attached to one wall, which looked incongruously small compared to the imposing bulk of the prison. The grounds were surrounded by a twenty-foot wire fence with three coils of barbwire at the top. I was the only person outside. A few old cars were parked in the lot.

I approached the red door, my heart beating fast, my palms sweating. I had to tell myself to calm down. The whole place seemed fenced by tension. I walked in through a double door, passed through a metal detector, was summarily frisked and then taken into the compound by a guard who seemed as caged and resentful as a prisoner.

“You a psychologist?” she asked, looking me over disapprovingly.

“No. I’m a psychiatrist.”

“OK, whatever. You could spend a lifetime here.” She laughed disdainfully. “Here’s the rules. You must read this.” She handed me a one-page document and continued, “No contraband. No weapons. You may not bring gifts or take anything out of the prison.” Her tone and attitude told me she had no use for me. Maybe she was angry that she had to spend this perfect day in prison. Maybe she was resentful because she thought that mental health professionals working with the justice system mainly help criminals escape responsibility for their actions.

“OK,” I said, trying to be respectful. But I could tell she had already made up her mind about me. It’s no wonder that she was hostile, though. Our brains adapt to our environments, and this place wasn’t likely to elicit kindness or trust.

The interview room was small with a single metal table and two chairs. The floor was a tiled institutional gray with green speckles and the walls were painted cinderblock. Leon was brought in by two male guards. He looked small and childlike as he faced me, wearing an orange jumpsuit, his arms and legs shackled and chained to each other. He was thin and short for his age. He didn’t look lethal. Sure, his stance was aggressive, and I could see that he already had jailhouse tattoos, his forearm branded with a crooked “X.” But the toughness came across as phony and artificial, like an undersized tomcat with his hair on end, trying to appear larger than he actually was. It was almost impossible to believe that this now eighteen-year-old boy/man had brutally murdered two people.

He’d seen his two young victims in an elevator in the high-rise building where he lived. Although it was only three or four in the afternoon, he’d already been drinking beer. He had crudely propositioned the teenagers. When the girls—not surprisingly—rejected him, he’d followed them into an apartment and, apparently after a physical confrontation, stabbed both of them to death with a table knife. Cherise was twelve and her friend Lucy was thirteen. Both were barely pubescent. The attack had happened so fast and Leon was so much larger than his victims that neither girl had been able to defend herself. He’d managed to quickly restrain Cherise with a belt. After that, while Lucy tried to
fight him off, he killed her and then, either to avoid leaving a witness, or
still in a rage, slaughtered the bound girl as well. He then raped both
bodies. His anger still not sated, he'd kicked and stomped them.

Though he had often been in trouble with the law, Leon's records
didn't indicate that he was capable of anything like this level of vio-
ence. His parents were hard-working, married legal immigrants, solid
citizens without criminal histories. His family had never been in-
volved with child protective services; there was no history of abuse,
nor foster care placements, nor any other obvious red flags for attach-
ment problems. Yet all of his records suggested that he was a master at
manipulating people around him and, more ominously, that he was
completely devoid of emotional connection to others. He was often
described as having little to no empathy: remorseless, callous, indif-
ferent to most of the "consequences" set up in school or in juvenile
justice programs.

Seeing him now, looking so small in his shackles in this terrible
prison, I almost felt sorry for him. But then we began to talk.

"You the doctor?" he asked, looking over, clearly disappointed.
"Yep."

"I told her I wanted a lady shrink," he sneered. He pushed his chair
away from the table and kicked it. I asked him whether he'd discussed
my visit with his lawyer and understood its purpose.

He nodded, trying to act tough and indifferent, but I knew he had to
be scared. He probably would never admit it or even understand it, but
inside he was always on guard, always vigilant and always studying the
people around him. Trying to work out who could help him and who
could hurt him. What is this person's weak point, what does he want,
what does he fear?

From the moment I came in I could see that he was studying me, too.
Probing for weakness, seeking ways to manipulate me. He was smart
even to know the stereotype of the liberal, bleeding-heart shrink. He
had successfully read his lead attorney. She felt sorry for him now; he
had convinced her he was the one who'd been wronged. Those girls had
invited him into the apartment. They promised to have sex with him.
Things got rough and it was an accident. He tripped over their bodies;
that's how he got blood on his boots. He never intended to hurt them.
And now he set out to persuade me, too, that he was a misunderstood
victim of two teen vixens who had teased and tempted him.

"Tell me about yourself." I started with open questions, trying to see
where he would go.

"What do you mean? Is that some kind of shrink trick?" he asked,
suspicious.

"No. I just figured you are the best person to tell me about you. I've
read a whole lot of other people's opinions. Teachers, therapists, proba-
tion officers, the press. They all have opinions. So I want to know yours."

"What do you want to know?"

"What do you want to tell me?" The dance continued. We circled
around each other. It was a game I knew well. He was pretty good. But I
was used to this.

"Well. Let's start with right now. What it is like living in prison?"

"It's boring. It's not so bad. Not too much to do."

"Tell me your schedule." And so it started. He slowly began to loosen
up as he described the routines of the prison and his earlier experiences
in the juvenile justice system. I let him talk and then after a few hours, we
took a break so he could smoke a cigarette. When I came back, it was
time to get to the point. "Tell me what happened with those girls."

"It was no big deal really. I was just hanging out and these two girls
came by. We started talking and they invited me up to their apartment to
fool around. Then when they got me up there, they changed their minds.
It pissed me off." This was different from his original statement and from
other accounts he'd given. It seemed that the more time that passed since
the crime, the less violent he made the story. Each time he told it, he was
less and less responsible for what had happened; he, rather than the girls,
increasingly became the victim.

"It was an accident. I just wanted to scare them. Stupid bitches
wouldn't shut up," he went on. My stomach churned. Don't react. Be
still. If he senses how horrified and disgusted you feel, he won’t be honest. He will edit. Stay calm. I nodded.

“They were loud?” I asked as neutrally as I could manage.

“Yes, I told them I wouldn’t hurt them if they would just shut up.” He was giving me a short, sanitized version of the murders. He left out the rape. He left out how he’d brutally kicked the girls.

I asked whether their screams had enraged him, if that was why he’d kicked the bodies. The autopsy report showed that the thirteen-year-old had been kicked in the face and stomped on the neck and chest.

“Well, I didn’t really kick them. I just tripped. I had been drinking some. So, you know,” he said, hoping I would fill in the blanks. He looked up to see if I had bought his lies. There was little emotion on his face or in his voice. He described the murders as if he were giving a geography report in school. The only trace of emotion was the disdain he expressed that his victims had “made him” kill them, furious with them for fighting back, for resisting.

His coldness was breathtaking. This was a predator, someone whose only concern for other people was what he could get from them, what he could make them do, and how they could serve his selfish ends. He could not even put on a compassionate performance for a shrink hired by his defense, someone looking for the smallest glimmer of goodness or promise in him.

It wasn’t that he didn’t know that he should try to appear remorseful. He simply wasn’t capable of taking into account the feelings of others in any way other than to take advantage of them. He could not feel compassion for others, so he couldn’t fake it very well, either. Leon was not unintelligent. In fact, his IQ was significantly above average in some ways. However, it was uneven. While his verbal IQ was in the low to normal range, his performance score, which measures things like the ability to properly sequence a series of pictures and manipulate objects in space, was quite high. He scored especially well in his ability to read social situations and understand other people’s intentions. This split between verbal and performance scores is often seen in abused or traumatized children and can indicate that the developmental needs of certain brain regions, particularly those cortical areas involved in modulating the lower, more reactive regions have been not been met. In the general population about 5 percent of people show this pattern, but in prisons and juvenile treatment centers that proportion rises to over 35 percent. It reflects the use-dependent development of the brain: with more developmental chaos and threat the brain’s stress response systems and those areas of the brain responsible for reading threat-related social cues will grow, while less affection and nurturing will result in underdevelopment of the systems that code for compassion and self-control. These test results were the first clues that something had probably gone wrong in his early childhood.

I tried to figure out what might have happened from our interview, but didn’t get very far. Most people don’t remember much from the developmentally critical years of birth through kindergarten, anyway. There was evidence indicating he had been troubled from very early on, however. His records showed reports of aggressive behavior dating back to his preschool years. From our conversation I could also tell that he’d had few friends or lasting relationships with anyone outside his family. His charts showed a history of bullying and of petty crimes like shoplifting and other thefts, but he had never been to an adult prison before now. His run-ins with the law as an adolescent had mainly resulted in probation; he hadn’t even spent much time in juvenile detention, despite having committed some serious assaults.

I did discover, however, that he’d committed, or been suspected of committing, several major offenses for which he had not been charged or convicted because there was not enough evidence to make the charges stick. For example, he’d once been found in possession of a stolen bicycle. The bike’s teenage owner had been beaten so severely that he’d wound up in the hospital with life-threatening injuries. But there were no witnesses to the assault—or none that would come forward—so Leon was only charged with possession of stolen property. Over the course of several evaluation visits he eventually bragged about previous
sexual assaults to me, with the same cold disdain with which he'd discussed the murders.

Looking for any sign of remorse, I finally asked what should have been an easy question.

"Now that you look back on all this, what would you have done differently?" I said, expecting him to at least mouth some platitudes about controlling his anger, about not harming people.

He seemed to think for a minute, then responded, "I don't know. Maybe throw away those boots?"

"Throw away the boots?"

"Yeah. It was the boot prints and the blood on the boots that got me."

Many psychiatrists would have left the prison believing that Leon was the archetypal "bad seed," a genetic freak of nature, a demonic child incapable of empathy. And there are genetic predispositions that appear to affect the brain's systems involved in empathy. My research, however, has led me to believe that behavior as extreme as Leon's is rare among people who have not suffered certain forms of early emotional and/or physical deprivation.

Furthermore, if Leon had the genetic makeup that increased the risk of sociopathic behavior—if such genes even exist—his family history should have revealed other relatives, such as a parent, a grandparent, maybe an uncle, with similar, even if less extreme, problems. Perhaps a history of multiple arrests, for example. But there was none. Also, Leon had been turned in to the police by his own brother, a brother who seemed to be everything that Leon was not.

Frank,* Leon's brother, like his parents and other relatives, was gainfully employed. He was a successful plumber, married, a dutiful father of two who was respected in the community. The day of the crime, he'd come home to find Leon, still wearing his blood-encrusted boots, watching TV in his living room. On the news was an urgent bulletin about the recent discovery of the violated bodies of two young girls in Leon's building. Sneaking occasional glances at the boots, Frank waited until Leon left, then called the police to report his suspicions about his brother's connection to the crime.

Siblings share at least 50 percent of their genes. While Frank could have been genetically blessed with a far greater capacity for empathy than Leon, it was unlikely that this alone accounted for their very different temperaments and life paths. Yet as far as I knew, Leon and Frank had shared the same home and parents, so Leon's environment didn't appear to be a likely culprit either. I would only discover what I now believe to be at the root of Leon's problems after I met with Frank and his parents, Maria* and Alan.* In our first meeting they were all in obvious distress over the situation.

Maria was small and conservatively dressed, wearing a cardigan buttoned all the way up. She sat erect, knees together, with both hands on the handbag in her lap. Alan wore dark green work clothes; his name was sewn into a white oval over his pocket. Frank was wearing a button-down, collared blue shirt and khaki pants. Maria looked sad and fragile, Alan seemed ashamed and Frank seemed angry. I greeted each of them with a handshake and tried to establish eye contact.

"I'm sorry we have to meet under these circumstances," I said, carefully watching them. I wanted to see how they related to others, whether they showed an ability to empathize, whether there were any hints of pathological or odd behavior that might not have shown up in Leon's medical records and family history. But they responded appropriately. They were distressed, guilty, concerned, everything you would expect from family members who'd discovered that one of their own had committed an unspeakable crime.

"As you know, your son's attorney has asked me to evaluate him for the sentencing phase of the trial. I've met with Leon now twice. I wanted to spend some time with you to get a better understanding of how he was when he was younger." The parents listened, but neither would look
This pregnancy was a joyous event for both extended families. Maria was pampered, and the family welcomed the new addition. The young couple lived in a small building with their parents. They discussed how to handle the situation and felt relieved. 

Asabric, Frank, and his family were also excited about the new baby. They had been through many challenges, but their love and support helped them overcome them. Frank's mother, Leon, was always there to help and give advice. She was like a second mother to Maria and the baby. 

Frank's father, Albert, was also involved in the family's decision-making. He worked hard to provide for his family and wanted to ensure that they were all taken care of. 

The family lived in a small house with a garden, and they loved spending time together. They would often go on walks in the park, and the children would play games in the yard. They were a close-knit family, and their love for each other was evident in everything they did. 

As the baby grew older, the family was happy to see the little one develop and learn new things. They were proud of the new member of their family and looked forward to many more years together. 

The family's happiness was short-lived, however. They soon faced new challenges that would test their strength and determination. They had to navigate the ups and downs of life, but they never gave up on each other. 

The family's love and support for each other were the foundation of their happiness and strength. They proved that family love can overcome any obstacle, and they were determined to live a life filled with joy and love.
drug use. Few people worked and few had roots in the area. As is often the case in this country, extended families were scattered, not living close together as they had back home. Most of the households with children were headed by single mothers.

Soon Maria became pregnant with Leon. This pregnancy, however, was very different from her first one. Maria was now alone all day long in a small apartment with a toddler as her only companion. She was bewildered by her new life—and lonely. She didn't know anyone and didn't know how to reach out to her neighbors. Alan worked long hours, and when he came home he was exhausted. Maria's three-year-old son became her best friend. They spent hours together. They would walk to a nearby park, take the bus to the free museums in the city, and participate in a mother's drop-in program at a church. Maria developed a routine in which she would leave the apartment early in the morning and stay out all day, picking up groceries just before she returned home. The routine was comforting. She created a repetitive pattern of activity and familiar faces she saw each day were some tiny connections to others, reminding her of the familiarity of the world she left behind. Still, she missed her family. She missed her neighborhood. She missed the group of experienced women who had helped her raise her first baby.

Then, Leon was born. Maria was now overwhelmed by the inevitable neediness of a newborn. She never had to raise a baby alone before. It became clear to me that the family had understood Maria's limitations and, when needed, had stepped in to provide a loving, predictable and safe environment for Frank. But when Leon was born this relational safety net was absent. I was starting to see why Leon and Frank had turned out so differently.

"He was such a fussy baby. He cried," Maria told me, describing Leon. She smiled. I smiled back.

"And how would you calm him down?"

"I tried to feed him. Sometimes he would take the bottle and stop."

"Anything else?"

"Sometimes he would not stop. So we would go on our walk."

"We?"

"Me and Frank."

"Ah."

"Did anyone ever come to help you take care of Leon?"

"No. We would wake up and feed him and then go for our walk."

"Was this like the walks you took before Leon was born?"

"Yes. We go to the park. Play for a while. Take the bus to the church and have lunch. Then go to the children's museum. Take the bus to the market to buy food for dinner. And then go home."

"So you were gone most of the day."

"Yes."

Little by little it became clear that from the time Leon was four weeks old, the mother had resumed her "walks" with her oldest son, by then a four-year-old. She left baby Leon alone in a dark apartment. My heart sank as I listened to the mother—innocent, yet ignorant of the crucial needs of an infant—describe her systematic neglect of her youngest son. It was hard to be critical: she had given her four-year-old loving and attentive care. But at the same time she had deprived her newborn of the experiences necessary for him to form and maintain healthy relationships.

"He stopped crying so much," she said, indicating that she thought that her solution to the problem had worked.

But as he grew older, both parents related, Leon never responded to their parenting the same way that Frank did. Whenever they reprimanded Frank, he felt bad that he had disappointed his parents and he corrected his behaviors. When Frank was told that he'd done well, he smiled and it was easy to see that he found pleasing his parents to be rewarding. The little boy was always hugging someone, running up to Mom or Dad and wrapping his little arms around them.

When Leon was scolded or punished, however, he showed no emotion. He didn't seem to care that he'd let his parents down or hurt someone else emotionally or physically. He didn't correct his behavior. When his parents or teachers were pleased with him and gave him positive
attention, he seemed equally unaffected. He actively avoided being touched, or touching others.

Over time he learned to use flattery, flirtation and other forms of manipulation to get what he wanted. If that did not work, he did what he wanted when he wanted anyway, and if he wasn’t given what he asked for, then he took it. If he got caught doing something wrong, he would lie, and if he got caught in a lie, he was indifferent to lectures and punishment. All he seemed to learn from punishment was how to improve his deception and better hide his bad behavior. Teachers, counselors, youth ministers and coaches all said the same thing: Leon didn’t seem to care about anyone or anything but himself. The normal relational rewards and consequences—making your parents proud, making a friend happy, feeling upset if you hurt a loved one—did not matter to him.

So he started to get in trouble, first at preschool, then kindergarten, then elementary school. At first it was little things: stealing candy, minor bullying, poking classmates with pencils, talking back to teachers, ignoring the rules. But by third grade he had been referred for mental health services. By fifth grade he was a regular in the juvenile justice system, brought up on charges of truancy, theft and vandalism. This callous and criminal behavior qualified him for the diagnosis of “conduct disorder” by age ten.

When Maria had taken Frank out for walks, Leon had wailed in his crib at first. But he’d soon learned that crying would bring no aid, so he stopped. He lay there, alone and uncared for, with no one to talk to him and no one to praise him for learning to turn over or crawl (and not much room to explore anyway). For most of the day he heard no language, saw no new sights, and received no attention.

Like Laura and Virginia, Leon had been deprived of the critical stimuli necessary to develop the brain areas that modulate stress and link pleasure and comfort with human company. His cries had gone unanswered, his early need for warmth and touch unmet. At least Virginia had known consistent care in her foster homes, even though she was moved from one to another repeatedly, and at least Laura had known the constant presence of her mother, even if she hadn’t received enough physical affection from her. But Leon’s early life was maddeningly inconstant. Sometimes Maria would pay attention to him, others times she would leave him home alone for the whole day. Occasionally Alan was home and would play with him, but more often he was out working or too exhausted from his long days to cope with a baby. An environment of such intermittent care punctuated by total abandonment may be the worst of all worlds for a child. The brain needs patterned, repetitive stimuli to develop properly. Spastic, unpredictable relief from fear, loneliness, discomfort and hunger keeps a baby’s stress system on high alert. Receiving no consistent, loving response to his fears and needs, Leon never developed the normal association between human contact and relief from stress. What he learned instead was that the only person he could rely on was himself.

When he did interact with others, his neediness made him seem alternately demanding, aggressive and cold. In vain attempts to get the love and attention he desperately required, Leon would lash out, hit people, take things, and destroy them. Receiving only punishment, his rage grew. And the “worse” he behaved, the more he confirmed to those around him that he was “bad” and didn’t deserve their affection. It was a vicious cycle, and as Leon got older his misbehavior escalated from bullying into crime.

Leon could see that other people liked to be hugged and touched, but since his own needs for that had been neglected, he began to find it repellent. He could see that other people enjoyed interacting with each other, but because he’d been denied early attention, it now mostly left him cold. He just didn’t understand relationships.

Leon could enjoy food, could enjoy material pleasures like toys and television, and could relish physical sensations, including those associated with his developing sexuality. But because he’d been neglected when key social circuitry of the brain was developing he couldn’t really appreciate the pleasure of pleasing someone else or receiving their praise, nor did he suffer particularly from the rejection that followed if
his behavior displeased teachers or peers. Having failed to develop an association between people and pleasure, he saw no need to do as they wished, felt no joy in making them happy, and didn't care whether or not they got hurt.

When he was two-and-a-half, Leon's behavioral problems qualified him for an early intervention preschool program, which could have been a great opportunity, but in fact only worsened his problems. Now his mother no longer left him alone during the day, and he was exposed to enough cognitive stimulation to learn to talk and to intellectually understand what was expected of him. But this didn't make up for what he'd missed. While well intentioned, the program had only one caregiver to handle five or six severely troubled toddlers, a child to adult ratio that may not be enough to give appropriate attention to normal children that age, let alone those with emotional disorders.

The cognitive development of his cortex did, however, allow Leon to take note of how other people behaved. Over time he became able to mimic appropriate behavior when he wanted to. This allowed him to manipulate others into getting what he wanted, though his underdeveloped limbic and relational neural systems limited him to shallow, superficial relationships. For him people were just objects that either stood in his way or acceded to his needs. He was a classic sociopath (the psychiatric diagnosis is antisocial personality disorder, or ASPD), and one I think who was almost entirely a product of his environment, not his genes. I believe that if he had been raised the way his brother Frank had been, he probably would have grown up to have a normal life, and would almost certainly have never become a murderer and rapist.

Even the steps taken to help him—for example the preschool intervention program that placed him in a group of other disturbed children—only worsened his condition. Research has repeatedly found that surrounding a child with other troubled peers only tends to escalate bad behavior. This pattern of backfiring interventions would continue through his childhood and adolescence as he was shunted into "special ed" and other programs. There, he also found other antisocial peers who reinforced each other's impulsivity. They became partners in crime, egging each other on and modeling for each other the idea that violence is the best way to solve problems. Furthermore, through what he saw in his neighborhood, at the movies and on the TV that was always on in most of the places where he spent his time, he also got the message that violence solves problems and that there was pleasure to be had in wielding physical power over others. Leon learned to copy the worst of human behavior, but remained unable to understand why he should imitate the best.

There are other brain disorders that diminish the ability to empathize that provide insight on sociopathy like Leon's. Most notable is autism and its less severe form, Asperger's syndrome, both of which appear to be strongly genetically influenced. About one-third of autistic children never learn to speak and all of them tend to isolate themselves from others and focus more on objects than on people. They don't usually engage in imaginative play and have great difficulty forming and understanding relationships. The condition is often accompanied by sensory integration problems and sensory oversensitivities, such as being unable to tolerate "itchy" fabrics and being overwhelmed by loud noises or bright lights. Autistic children have repetitive behaviors like rocking and odd obsessions, typically with moving objects—for example, trains or the wheels on toy cars. Some autistic people are highly talented at math or drawing, and most develop focused interests in particular objects or ideas. People with Asperger's have greater abilities to connect with others and function in the world than those with more severe forms of autism, but their obsessions and inability to read social cues often keep them isolated. Their poor social skills can also make it hard for them to get or keep a job, although in some cases their mathematical and engineering abilities more than compensate for their awkwardness. Many children tagged as "geeks" or "nerds" because of their inability to relate to their peers may have Asperger’s syndrome or come close to meeting the criteria for its diagnosis.

In order to function socially people need to develop what is known as a "theory of mind." They need to know, in other words, that other
people are distinct from them, have different knowledge about the world and have different desires and interests. In autism this distinction is blurred. One reason autistic children may not talk is that they don't recognize the need to communicate; they aren't aware that other people don't know what they know. In one famous experiment, researchers put a pencil in a tube that ordinarily held candy and asked autistic children what someone outside the room would expect to find in it. Normal and even Down syndrome preschoolers said candy. But the autistic children insisted that others would expect the pencil, not realizing that people who hadn't seen the candy removed would think it was still there. The children knew the candy was gone, so their logical assumption was that everyone else must know, too. (The brain regions involved in coding “theory of mind” are believed to be in the left medial frontal cortex, just over the eyes.)

Unlike sociopaths like Leon, however, autistic people, although often odd, do not tend toward violence or crime despite their inability to empathize and recognize, for example, that ignoring someone might be hurtful to him. Their lack of empathy is conceptual. Autistic people may often be insensitive to the feelings and needs of others, but this is because they cannot fully perceive these feelings, not because they wish to cause harm or to be unkind. They have the capacity to love and feel emotional pain, but not the wiring that allows them to fully understand how to interact and have relationships. They lack empathy in that they have difficulty imagining what it’s like to be in someone else’s shoes—sometimes called “mind-blindness”—but they do not lack sympathy for those people’s experiences when they become aware of them.

Sociopaths like Leon are different. Their inability to empathize is a difficulty with mirroring the feelings of others coupled with a lack of compassion for them. In other words, they not only don't completely recognize what other people feel, but they don't care if they hurt them or they even actively desire to do so. They can imagine walking in someone else’s shoes, and they can predict how other people will behave based upon this ability to put themselves in someone else’s place, but they don’t care what it's like there. Their only concern is how others will affect them.

In essence, they have a “theory of mind,” but it is twisted. Not being able to fully experience love, they see it as something you promise in order to get sex, for example, not as a genuine feeling. Because they use other people’s feelings as a way to manipulate them, sociopaths assume that’s what everyone else does, too. Not feeling pleasure from relationships, they don’t believe others genuinely feel it, either. Since they are selfish, they believe others act only in their own self-interest as well. As a result, they dismiss appeals for attention or mercy as manipulative attempts to take power, not as genuine emotional pleas. They are emotionally frozen, in an ice that distorts not only their own feelings, but also how they see the feelings of others and then respond to them.

Unsurprisingly, research has now identified that some of the chemical correlates of sociopathy can be found in some of the same neurotransmitter systems that compose our stress response systems: alterations in serotonin, norepinephrine and dopamine systems have been implicated in aggressive, violent or antisocial behavior. Young people exhibiting antisocial traits and callous behavior tend to have abnormal levels of the stress hormone cortisol (which can be measured in a saliva test). Sociopaths are notorious for being able to fool lie detector tests, which actually measure physical responses related to anxiety and stress, not deception. It appears that their stress systems—either because they were placed on overdrive due to early trauma or because of genetic vulnerability or, most likely, some combination of both—are dysregulated, no longer responsive to anything except extreme stimulation. This makes them appear “cold” and unemotional and allows them to lie with impunity, as they do not show the signs of fear of detection that tend to give others away. It may also mean that far higher levels of painful or pleasurable stimulation are necessary in order for them to feel anything at all. Unlike people whose response to trauma is to get stuck in a highly sensitized state in which any stress at all triggers
a massive response, sociopaths' systems appear to have gotten stuck at the other end of the spectrum, in deadening—and sometimes deadly—numbness.

While preparing my testimony, I thought hard about what I would say about Leon and what I believed about his own responsibility for his actions. Why did he kill? Why does anyone kill? Are these even the right questions? Maybe, I thought, I should try to understand what keeps the rest of us from killing, what didn't put the brakes on Leon's behavior. How exactly had things gone so wrong for this boy? How had he forged his misfortune, neglect and trauma into hate—or did those things forge him entirely?

He was unquestionably guilty and did not meet the legal definition of insanity, which requires that a person be unable to tell right from wrong. Leon knew that murder was against that law and that it was reprehensible; he'd admitted it and he did not have any diagnosable mental illness that would impair his moral reasoning.

He met criteria for attention deficit disorder and conduct disorder during most of his childhood and youth. As an adult, Leon certainly fit the profile for both ADHD and ASPD, but those diagnoses, which simply describe symptoms like defiance, callous behavior and an inability to focus attention, do not imply mental clouding that would overwhelm one's ability to know that killing and raping people is not acceptable. These disorders involve decreased impulse control, but impaired impulse control does not mean complete lack of free will.

But what about Leon's inability to give and receive love? Can we blame him for having a childhood that withered the part of his brain that allows him to feel the greatest joys most of us have in life: the pain and pleasure of human connection? Of course not. He is responsible, I believe, for his reactions to his vulnerabilities. Virginia and Laura struggled with similar problems, but they did not become violent people, let alone murderers.

One might argue that this difference in outcome is due to gender and, indeed, male gender is the biggest predictor of violent behavior. Male murderers outnumber females by at least nine to one, though it appears that very recently, women have begun to close the gap. Nonetheless, throughout history, in every culture and even in most species, male violence predominates. Among our closest evolutionary cousins, the chimps, it is the males who make war on others, the males who are prone to use force. Yet I'd treated other adolescent boys with far worse histories of neglect, abuse and abandonment, and far fewer opportunities for love and affection than Leon had. Some had literally been raised in cages with no loving family at all, unlike Leon who had two parents and a brother, and who was neglected out of ignorance, not malice. Most of these boys who I'd treated grew up awkward and lonely, many were severely mentally ill, but the vast majority were not male.

What about genetics? Could that explain Leon's behavior? Disadvantageous genetics combined with a less-than-ideal environment was likely a factor in how he was raised and who he became. If Leon had had an easier temperament, for example, Maria might not have been so overwhelmed by his needs; if Maria had been more intelligent, she might have discovered better ways to cope with her challenging baby.

But what I think happened in Leon's life was an escalation of small, in-themselves-inconsequential negative decisions made by him and for him that gradually led to a horrendous outcome for his victims, his family and himself. You may have heard of the “butterfly effect”: the idea that complex systems—most famously, that which determines the earth's weather—are extraordinarily sensitive to minor fluctuations at certain critical points. Such systems are so responsive to tiny perturbations that, as the example goes, if a butterfly flutters its wings at the wrong instant in Brazil, it can trigger a series of events that may ultimately result in a tornado that devastates a small Texas town. The human brain, the ultimate complex system—in fact, the most complicated object in the known universe—is equally vulnerable to a version of the butterfly effect.

This might also be called a "snowball effect": when things go right early on, they will tend to continue to go right and even to self-correct if
there are minor problems. But when they go wrong at first, they will tend to continue to go wrong.

This effect is literally built into the architecture of our brains and bodies. For example, it is a tiny chemical gradient that determines which of our early cells will become skin, which will become brain and which will become bone, heart and bowel. Other extremely tiny differences tell one neuron to become part of the cerebellum, another to become cerebrum and similar slight differences in position and in concentration of certain chemicals determine which cells live and which will die.

We don’t have nearly enough genes to begin to determine the location or even the type of every cell: there are just 30,000 for the whole body and yet the brain alone has 100 billion nerve cells (and ten supporting glial cells for each of those). Each one of those billions of neurons makes between 5,000 and 10,000 connections, producing extraordinarily complex networks. Our bodies and especially our brains are built to magnify practically imperceptible initial incongruities into massively differentiated results. And this, in turn, allows us to respond to the complicated social and physical environment that we face.

So, while for most babies, being born colicky does little more than frustrate their parents, for Leon it overwhelmed his mother’s already limited emotional resources. Without the presence of her extended family there was no one to hand him off to when she was at her wit’s end, as there had been with Frank. Abandoning her infant during the day, she left him without the critical input he needed to soothe and, ultimately, organize his already slightly dysregulated stress response systems, making them even more chaotic and disorganized.

This, in turn, left Leon alternately clingy and aggressive, hampering his social skills, which could potentially have allowed him to elicit the warmth and care he needed from elsewhere. It also further alienated him from his parents and created a cycle of misbehavior, punishment and increasing rage and distress. Then he was placed with a negative peer group, from preschool onwards, which further magnified the harm.

Surrounded by normal peers, he might have found people who could reach out to him, who might have offered him healthy friendships that could have led him away from antisocial behavior. But in the company of other angry, distressed and needy children, and additionally stigmatizing by the labels applied to them, he instead became more distressed and out of control, leading him to react with escalating impulsivity and aggression.

At no one point did Leon make a conscious decision to become malevolent, but each small choice he or his family made pushed him further toward sociopathy, and each consequence of those choices made further negative choices increasingly likely. There were numerous forks in the road where different circumstances might have led Leon to become a better person, where better choices could have led to the start of a virtuous—not vicious—cycle. But unfortunately, he rejected every opportunity to turn away from his rage and impulsivity, and at none of those crossroads did he receive the appropriate help and support he needed from other people to pull him from the rut in which he’d become stuck.

The brain is built—our selves are built—from millions of tiny decisions—some conscious, most not. Seemingly irrelevant choices can result in tremendously different later outcomes. Timing is everything. We don’t know when the smallest choice, or “stimuli,” will push a developing brain onto the path of genius, or onto the highway to hell. I want to stress that this doesn’t mean that parents have to be perfect. But it’s important to know that young children are extraordinarily susceptible to the spiraling consequences of the choices we—and later they—make, for good and for ill.

Fortunately, the virtuous cycle is every bit as cascading and self-amplifying as the vicious cycle. A word of praise at just the right time, for example, can lead a child with a moderate interest in art to become more passionate about it. That intensity can escalate, leading him to develop greater skill, receive more praise and, ultimately, build into his brain artistic genius, where once there may only have been modest potential.
Some recent research emphasizes the power of this effect in sports. Half of England's elite young soccer players on the teams that feed their professional leagues are born in the first three months of the year. The rest are equally distributed among the other months. Why should this be? Well, all youth teams have age cutoffs; if you are born earlier in the year, you are likely to be more physically mature, more skilled and receive more rewards for your competence than those who are born later in that group. The pleasure of reward leads to more practice; we gravitate toward our competence. And, in the positive feedback cycle within the virtuous cycle, practice creates skill, skill attracts reward and reward fuels practice. This small difference, enhanced over time by practice, leads to a huge difference, giving the earlier-born players a far better chance of making the cut by the time they reach the pros. These positive spirals are hard to predict, however. We just don't know when the butterfly will bellow its tiny breeze into a hurricane.

So what could I tell the court about Leon, and what did I believe about his chances for rehabilitation? I would testify that the development of his brain had been skewed by what had happened to him as an infant. And I would confirm the diagnoses of attention deficit disorder and conduct disorder, which are mitigating factors, even if they do not absolve him of responsibility for his actions.

I would tell the court that his emotional, social and cognitive problems and neuropsychiatric diagnoses were related to his mother's unintentional neglect. His stress response systems had certainly received aberrant input: being left alone as an infant, and a resultant increased demand for stimuli that the brain could not respond to. And at the same time that these lower systems of the brain became overdeveloped, the higher, cortical regions surrounding them, the areas that modulate our responses to the world, our focus, and our self-control, were left underdeveloped.

I would also have to take into consideration the fact that Leon had been drinking when he committed his crime. Alcohol is disinhibiting; it reduces self-control and increases impulsiveness. Leon was already prone to acting without thinking; alcohol only exacerbated this tendency, with deadly consequences for his victims. Would he have committed the crime had he not been drinking first? I suspect not. The alcohol released the already-overwhelmed and improperly developed brakes on his behavior, allowing his rage and lust to take over. Had he not been drunk, he might have stopped himself long before he killed or even assaulted the girls.

I ultimately testified about Leon's early childhood and its effects on his ability to maintain relationships, his impulse control and his attentiveness. I discussed how early neglect can predispose children to reduced empathy and violence. I included all the mitigating factors that I had found. It was all I could do: there was no case to be made that he was not legally responsible for his actions, and I could not deny that he was an ongoing danger to those around him.

During a break I happened to be near the defendant as he watched the victims' families cry and try to soothe each other. They were despondent, tears running down their cheeks, clinging to each other like survivors on a life raft. Leon said to me, "Why are they crying? I'm the one who's going to jail." Again, his emptiness was chilling. He was emotionally blind.

Afterwards, when Leon had been removed as the jury retired to deliberate, Cherise's mother approached me. Her pain was visible in every step, in the slow movement of her hands, in her expression. "Doctor! Doctor!" she called to me, with great urgency, afraid I might leave before she could talk to me. I stopped, turned, and watched her slowly approach. Almost pleading, she asked, "Why did he do it? You talked to him. Why did he kill my baby? Please tell me. Why?"

I shook my head, acknowledging that, even with my expertise, I couldn't give her a satisfactory answer.

Crying and holding my arm, she asked again. "You know about these things. Why did he kill my baby?"

"Honestly, I just don't know for sure," I said, feeling embarrassed at the inadequacy of my words. I sought out something to help this grieving
mother. “I think his heart is cold. Something in him is broken. He’s not able to love like you can—like your daughter could. You hurt so much because you loved her so much. He doesn’t feel things like you do—good things or bad.”

She was quiet for a moment. I could see her bring her daughter’s image to mind with a fleeting smile, then more tears. She sighed and nodded. “Yes. He must be broken inside to kill such a beautiful child. She never hurt anyone.” I awkwardly hugged her for a moment and then she walked out toward the rest of her family. I thought of Maria and Alan and Frank. Our research is beginning to unlock the secrets of the brain and the causes of tragedies such as this one, but in that moment I was painfully aware of how much we still don’t know.

chapter 6

The Boy Who Was Raised as a Dog

What allows someone to make the right choice, even if he hasn’t been given the optimal developmental opportunities he needs? What made Virginia continue to seek help for her baby, rather than simply abandoning her? What could we take from Mama P’s book and prescribe for other children like Laura? Could the right treatment help prevent children like Leon from becoming a threat? Is there anything new I could say today to Cherise’s mom—and to Frank, Alan and Maria—about why Leon had committed his terrible crimes?

Just as we only gradually came to understand how the sequential development of a child’s brain is affected by trauma and neglect, it also only gradually dawned on us that this understanding could help us find possible treatments. These insights led us to develop what we came to call the neurosequential approach to therapeutic services for maltreated and traumatized children. One of the first children on whom we used this method had suffered neglect far, far worse than what had been done to Leon.

I met Justin in 1995 when he was six years old. He was in the Pediatric Intensive Care Unit (PICU). I had been invited by the PICU staff to come and, using that-psychiatric-voodoo-that-you-do-so-well, try to stop him from throwing feces and food at the staff. The PICU was almost