10. DEVELOPMENTAL TRAUMA: THE HIDDEN EPIDEMIC

You are being provided with a book chapter by chapter. I will request you to read the book for me after each chapter. After reading the chapter, 1. shorten the chapter to no less than 300 words and no more than 400 words. 2. Do not change the name, address, or any important nouns in the chapter. 3. Do not translate the original language. 4. Keep the same style as the original chapter, keep it consistent throughout the chapter. Your reply must comply with all four requirements, or it's invalid.
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CHAPTER 10
DEVELOPMENTAL TRAUMA: THE
HIDDEN EPIDEMIC
The notion that early childhood adverse experiences lead to substantial developmental disruptions is more clinical intuition than a research-based fact. There is no known evidence of developmental disruptions that were preceded in time in a causal fashion by any type of trauma syndrome.
—From the American Psychiatric Association's rejection of a Developmental Trauma Disorder diagnosis, May 2011
Research on the effects of early maltreatment tells a different story: that early maltreatment has enduring negative effects on brain development. Our brains are sculpted by our early experiences. Maltreatment is a chisel that shapes a brain to contend with strife, but at the cost of deep, enduring wounds. Childhood abuse isn't something you "get over." It is an evil that we must acknowledge and confront if we aim to do anything about the unchecked cycle of violence in this country.
—Martin Teicher, MD, PhD, Scientific American
here are hundreds of thousands of children like the ones I am about to describe, and they absorb enormous resources, often without appreciable benefit. They end up filling our jails, our welfare rolls, and our medical clinics. Most of the public knows them only as statistics. Tens of thousands of schoolteachers, probation officers, welfare workers, judges, and mental health professionals spend their days trying to help them, and the taxpayer pays the bills.
Anthony was only two and a half when he was referred to our Trauma Center by a child-care center because its employees could not manage his constant biting and pushing, his refusal to take naps, and his intractable crying, head banging, and rocking. He did not feel safe with any staff member and fluctuated between despondent collapse and angry defiance. When we met with him and his mother, he anxiously clung to her, hiding his face, while she kept saying, "Don't be such a baby." He startled when a door banged somewhere down the corridor and then burrowed deeper into his mom's lap. When she pushed him away, he sat in a corner and started to bang his head. "He just does that to bug me," his mother remarked. When we asked about her own background, she told us that she'd been abandoned by her parents and raised by a series of relatives who hit

her, ignored her, and started to sexually abuse her at age thirteen. She'd become pregnant by a drunken boyfriend who left her when she told him she was carrying his child. Anthony was just like his father, she said—a good-for-nothing. She had had numerous violent rows with subsequent boyfriends, but she was sure that this had happened too late at night for Anthony to notice.

If Anthony were admitted to a hospital, he would likely be diagnosed with a host of different psychiatric disorders: depression, oppositional defiant disorder, anxiety, reactive attachment disorder, ADHD, and PTSD. None of these diagnoses, however, would clarify what was wrong with Anthony: that he was scared to death and fighting for his life, and he did not trust that his mother could help him.

Then there's Maria, a fifteen-year-old Latina, one of the more than half a million kids in the United States who grow up in foster care and residential treatment programs. Maria is obese and aggressive. She has a history of sexual, physical, and emotional abuse and has lived in more than twenty out-of-home placements since age eight. The pile of medical charts that arrived with her described her as mute, vengeful, impulsive, reckless, and self-harming, with extreme mood swings and an explosive temper. She describes herself as "garbage, worthless, rejected."

After multiple suicide attempts Maria was placed in one of our residential treatment centers. Initially she was mute and withdrawn and became violent when people got too close to her. After other approaches failed to work, she was placed in an equine therapy program where she groomed her horse daily and learned simple dressage. Two years later I spoke with Maria at her high school graduation. She had been accepted by a four-year college. When I asked her what had helped her most, she answered, "The horse I took care of." She told me that she first started to feel safe with her horse; he was there every day, patiently waiting for her, seemingly glad upon her approach. She started to feel a visceral connection with another creature and began to talk to him like a friend. Gradually she started talking with the other kids in the program and, eventually, with her counselor.

Virginia is a thirteen-year-old adopted white girl. She was taken away from her biological mother because of the mother's drug abuse; after her first adoptive mother fell ill and died, she moved from foster home to foster home before being adopted again. Virginia was seductive with any male who crossed her path, and she reported sexual and physical abuse by various babysitters and temporary caregivers. She came to our residential treatment program after thirteen crisis hospitalizations for suicide attempts. The staff described her as isolated, controlling, explosive, sexualized, intrusive, vindictive, and narcissistic. She described herself as disgusting and said she wished she were dead. The diagnoses in her chart were bipolar disorder, intermittent explosive disorder, reactive attachment disorder, attention deficit disorder (ADD) hyperactive subtype, oppositional defiant disorder (ODD), and substance use disorder. But who, really, is Virginia? How can we help her have a life?1

We can hope to solve the problems of these children only if we correctly define what is going on with them and do more than developing new drugs to control them or trying to find "the" gene that is responsible for their "disease." The challenge is to find ways to help them lead productive lives and, in so doing, save hundreds of millions of dollars of taxpayers' money. That process starts with facing the facts.

BAD GENES?

With such pervasive problems and such dysfunctional parents we would be tempted to ascribe their problems simply to bad genes. Technology always produces new directions for research, and when it became possible to do genetic testing, psychiatry became committed to finding the genetic causes of mental illness. Finding a genetic link seemed particularly relevant for schizophrenia, a fairly common (affecting about 1 percent of the population), severe, and perplexing form of mental illness and one that clearly runs in families. And yet after thirty years and millions upon millions of dollars' worth of research, we have failed to find consistent genetic patterns for schizophrenia—or for any other psychiatric illness, for that matter.2 Some of my colleagues have also worked hard to discover genetic factors that predispose people to develop traumatic stress.3 That quest continues, but so far it has failed to yield any solid answers.4

Recent research has swept away the simple idea that "having" a particular gene produces a particular result. It turns out that many genes work together to influence a single outcome. Even more important, genes are not fixed; life events can trigger biochemical messages that turn them on or off by attaching methyl groups, a cluster of carbon and hydrogen atoms, to the outside of the gene (a process called methylation), making it more or less sensitive to messages from the body. While life events can change the behavior of the gene, they do not alter its fundamental structure. Methylation patterns, however, can be passed on to offspring—a phenomenon known as epigenetics. Once again, the body keeps the score, at the deepest levels of the organism.

One of the most cited experiments in epigenetics was conducted by McGill University researcher Michael Meaney, who studies newborn rat pups and their mothers.5 He discovered that how much a mother rat licks and grooms her pups during the first twelve hours after their birth permanently affects the brain chemicals that respond to stress—and modifies the configuration of over a thousand genes. The rat pups that are intensively licked by their mothers are braver and produce lower levels of stress hormones under stress than rats whose mothers are less attentive. They also recover more quickly—an equanimity that lasts throughout their lives. They develop thicker connections in the hippocampus, a key center for learning and memory, and they perform better in an important rodent skill—finding their way through mazes.

We are just beginning to learn that stressful experiences affect gene expression in humans, as well. Children whose pregnant mothers had been trapped in unheated houses in a prolonged ice storm in Quebec had major epigenetic changes compared with the children of mothers whose heat had been restored within a day.6 McGill researcher Moshe Szyf compared the epigenetic profiles of hundreds of children born into the extreme ends of social privilege in the United Kingdom and measured the effects of child abuse on both groups. Differences in social class were associated with distinctly different epigenetic profiles, but abused children in both groups had in common specific modifications in seventy-three genes. In Szyf's words, "Major changes to our bodies can be made not just by chemicals and toxins, but also in the way the social world talks to the hard-wired world."7,8

MONKEYS CLARIFY OLD QUESTIONS ABOUT NATURE VERSUS NURTURE

One of the clearest ways of understanding how the quality of parenting and

environment affects the expression of genes comes from the work of Stephen Suomi, chief of the National Institutes of Health's Laboratory of Comparative Ethology.9 For more than forty years Suomi has been studying the transmission of personality through generations of rhesus monkeys, which share 95 percent of human genes, a number exceeded only by chimpanzees and bonobos. Like humans, rhesus monkeys live in large social groups with complex alliances and status relationships, and only members who can synchronize their behavior with the demands of the troop survive and flourish.

Rhesus monkeys are also like humans in their attachment patterns. Their infants depend on intimate physical contact with their mothers, and just as Bowlby observed in humans, they develop by exploring their reactions to their environment, running back to their mothers whenever they feel scared or lost. Once they become more independent, play with their peers is the primary way they learn to get along in life.

Suomi identified two personality types that consistently ran into trouble: uptight, anxious monkeys, who become fearful, withdrawn, and depressed even in situations where other monkeys will play and explore; and highly aggressive monkeys, who make so much trouble that they are often shunned, beaten up, or killed. Both types are biologically different from their peers. Abnormalities in arousal levels, stress hormones, and metabolism of brain chemicals like serotonin can be detected within the first few weeks of life, and neither their biology nor their behavior tends to change as they mature. Suomi discovered a wide range of genetically driven behaviors. For example, the uptight monkeys (classified as such on the basis of both their behavior and their high cortisol levels at six months) will consume more alcohol in experimental situations than the others when they reach the age of four. The genetically aggressive monkeys also overindulge —but they binge drink to the point of passing out, while the uptight monkeys seem to drink to calm down.

And yet the social environment also contributes significantly to behavior and biology. The uptight, anxious females don't play well with others and thus often lack social support when they give birth and are at high risk for neglecting or abusing their firstborns. But when these females belong to a stable social group they often become diligent mothers who carefully watch out for their young. Under some conditions being an anxious mom can provide much needed protection. The aggressive mothers, on the other hand, did not provide any social advantages: very punitive with their offspring, there is lots of hitting, kicking, and biting. If the infants survive, their mothers usually keep them from making friends with their peers.

In real life it is impossible to tell whether people's aggressive or uptight behavior is the result of parents' genes or of having been raised by an abusive mother—or both. But in a monkey lab you can take newborns with vulnerable genes away from their biological mothers and have them raised by supportive mothers or in playgroups with peers.

Young monkeys who are taken away from their mothers at birth and brought up solely with their peers become intensely attached to them. They desperately cling to one another and don't peel away enough to engage in healthy exploration and play. What little play there is lacks the complexity and imagination typical of normal monkeys. These monkeys grow up to be uptight: scared in new situations and lacking in curiosity. Regardless of their genetic predisposition, peer-raised monkeys overreact to minor

stresses: Their cortisol increases much more in response to loud noises than does that of monkeys who were raised by their mothers. Their serotonin metabolism is even more abnormal than that of the monkeys who are genetically predisposed to aggression but who were raised by their own mothers. This leads to the conclusion that, at least in monkeys, early experience has at least as much impact on biology as heredity does.
Monkeys and humans share the same two variants of the serotonin gene (known as the short and long serotonin transporter alleles). In humans the short allele has been associated with impulsivity, aggression, sensation seeking, suicide attempts, and severe depression. Suomi showed that, at least in monkeys, the environment shapes how these genes affect behavior. Monkeys with the short allele that were raised by an adequate mother behaved normally and had no deficit in their serotonin metabolism. Those who were raised with their peers became aggressive risk takers.10 Similarly, New Zealand researcher Alec Roy found that humans with the short allele had higher rates of depression than those with the long version but that this was true only if they also had a childhood history of abuse or neglect. The conclusion is clear: Children who are fortunate enough to have an attuned and attentive parent are not going to develop this genetically related problem.11
Suomi's work supports everything we've learned from our colleagues who study human attachment and from our own clinical research: Safe and protective early relationships are critical to protect children from long-term problems. In addition, even parents with their own genetic vulnerabilities can pass on that protection to the next generation provided that they are given the right support.

THE NATIONAL CHILD TRAUMATIC STRESS NETWORK

Nearly every medical disease, from cancer to retinitis pigmentosa, has advocacy groups that promote the study and treatment of that particular condition. But until 2001, when the National Child Traumatic Stress Network was established by an act of Congress, there was no comprehensive organization dedicated to the research and treatment of traumatized children.
In 1998 I received a call from Adam Cummings from the Nathan Cummings Foundation telling me that they were interested in studying the effects of trauma on learning. I told them that while some very good work had been done on that subject,12 there was no forum to implement the discoveries that had already been made. The mental, biological, or moral development of traumatized children was not being systematically taught to child-care workers, to pediatricians, or in graduate schools of psychology or social work.
Adam and I agreed that we had to address this problem. Some eight months later we convened a think tank that included representatives from the U.S. Department of Health and Human Services and the U.S. Department of Justice, Senator Ted Kennedy's health-care adviser, and a group of my colleagues who specialized in childhood trauma. We all were familiar with the basics of how trauma affects the developing mind and brain, and we all were aware that childhood trauma is radically different from traumatic stress in fully formed adults. The group concluded that, if we hoped to ever put the issue of childhood trauma firmly on the map, there needed to be a national organization that would promote both the study of childhood trauma and the education of teachers, judges, ministers, foster

parents, physicians, probation officers, nurses, and mental health professionals—anyone who deals with abused and traumatized kids.

One member of our work group, Bill Harris, had extensive experience with child-related legislation, and he went to work with Senator Kennedy's staff to craft our ideas into law. The bill establishing the National Child Traumatic Stress Network was ushered through the Senate with overwhelming bipartisan support, and since 2001 it has grown from a collaborative network of 17 sites to more than 150 centers nationwide. Led by coordinating centers at Duke University and UCLA, the NCTSN includes universities, hospitals, tribal agencies, drug rehab programs, mental health clinics, and graduate schools. Each of the sites, in turn, collaborates with local school systems, hospitals, welfare agencies, homeless shelters, juvenile justice programs, and domestic violence shelters, with a total of well over 8,300 affiliated partners.

Once the NCTSN was up and running, we had the means to assemble a clearer profile of traumatized kids in every part of the country. My Trauma Center colleague Joseph Spinazzola led a survey that examined the records of nearly two thousand children and adolescents from agencies across the network.13 We soon confirmed what we had suspected: The vast majority came from extremely dysfunctional families. More than half had been emotionally abused and/or had a caregiver who was too impaired to care for their needs. Almost 50 percent had temporarily lost caregivers to jail, treatment programs, or military service and had been looked after by strangers, foster parents, or distant relatives. About half reported having witnessed domestic violence, and a quarter were also victims of sexual and /or physical abuse. In other words, the children and adolescents in the survey were mirrors of the middle-aged, middle-class Kaiser Permanente patients with high ACE scores that Vincent Felitti had studied in the Adverse Childhood Experiences (ACE) Study.

THE POWER OF DIAGNOSIS

In the 1970s there was no way to classify the wide-ranging symptoms of hundreds of thousands of returning Vietnam veterans. As we saw in the opening chapters of this book, this forced clinicians to improvise the treatment of their patients and prevented them from being able to systematically study what approaches actually worked. The adoption of the PTSD diagnosis by the DSM III in 1980 led to extensive scientific studies and to the development of effective treatments, which turned out to be relevant not only to combat veterans but also to victims of a range of traumatic events, including rape, assault, and motor vehicle accidents.14 An example of the far-ranging power of having a specific diagnosis is the fact that between 2007 and 2010 the Department of Defense spent more than $2.7 billion for the treatment of and research on PTSD in combat veterans, while in fiscal year 2009 alone the Department of Veterans Affairs spent $24.5 million on in-house PTSD research.

The DSM definition of PTSD is quite straightforward: A person is exposed to a horrendous event "that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others," causing "intense fear, helplessness, or horror," which results in a variety of manifestations: intrusive reexperiencing of the event (flashbacks, bad dreams, feeling as if the event were occurring), persistent and crippling avoidance (of people, places, thoughts, or feelings associated with the trauma, sometimes with amnesia for important parts of it), and increased arousal (insomnia, hypervigilance, or irritability). This description suggests

a clear story line: A person is suddenly and unexpectedly devastated by an atrocious event and is never the same again. The trauma may be over, but it keeps being replayed in continually recycling memories and in a reorganized nervous system.

How relevant was this definition to the children we were seeing? After a single traumatic incident—a dog bite, an accident, or witnessing a school shooting—children can indeed develop basic PTSD symptoms similar to those of adults, even if they live in safe and supportive homes. As a result of having the PTSD diagnosis, we now can treat those problems quite effectively.

In the case of the troubled children with histories of abuse and neglect who show up in clinics, schools, hospitals, and police stations, the traumatic roots of their behaviors are less obvious, particularly because they rarely talk about having been hit, abandoned, or molested, even when asked. Eighty two percent of the traumatized children seen in the National Child Traumatic Stress Network do not meet diagnostic criteria for PTSD.15 Because they often are shut down, suspicious, or aggressive they now receive pseudoscientific diagnoses such as “oppositional defiant disorder,” meaning “This kid hates my guts and won’t do anything I tell him to do,” or “disruptive mood dysregulation disorder,” meaning he has temper tantrums. Having as many problems as they do, these kids accumulate numerous diagnoses over time. Before they reach their twenties, many patients have been given four, five, six, or more of these impressive but meaningless labels. If they receive treatment at all, they get whatever is being promulgated as the method of management du jour: medications, behavioral modification, or exposure therapy. These rarely work and often cause more damage.

As the NCTSN treated more and more kids, it became increasingly obvious that we needed a diagnosis that captured the reality of their experience. We began with a database of nearly twenty thousand kids who were being treated in various sites within the network and collected all the research articles we could find on abused and neglected kids. These were winnowed down to 130 particularly relevant studies that reported on more than one hundred thousand children and adolescents worldwide. A core work group of twelve clinician/researchers specializing in childhood trauma16 then convened twice a year for four years to draft a proposal for an appropriate diagnosis, which we decided to call Developmental Trauma Disorder.17

As we organized our findings, we discovered a consistent profile: (1) a pervasive pattern of dysregulation, (2) problems with attention and concentration, and (3) difficulties getting along with themselves and others. These children’s moods and feelings rapidly shifted from one extreme to another—from temper tantrums and panic to detachment, flatness, and dissociation. When they got upset (which was much of the time), they could neither calm themselves down nor describe what they were feeling. Having a biological system that keeps pumping out stress hormones to deal with real or imagined threats leads to physical problems: sleep disturbances, headaches, unexplained pain, oversensitivity to touch or sound. Being so agitated or shut down keeps them from being able to focus their attention and concentration. To relieve their tension, they engage in chronic masturbation, rocking, or self-harming activities (biting, cutting, burning, and hitting themselves, pulling their hair out, picking at their skin until it bled). It also leads to difficulties with language processing and fine-

motor coordination. Spending all their energy on staying in control, they usually have trouble paying attention to things, like schoolwork, that are not directly relevant to survival, and their hyperarousal makes them easily distracted.

Having been frequently ignored or abandoned leaves them clinging and needy, even with the people who have abused them. Having been chronically beaten, molested, and otherwise mistreated, they can not help but define themselves as defective and worthless. They come by their self-loathing, sense of defectiveness, and worthlessness honestly. Was it any surprise that they didn't trust anyone? Finally, the combination of feeling fundamentally despicable and overreacting to slight frustrations makes it difficult for them to make friends.

We published the first articles about our findings, developed a validated rating scale,18 and collected data on about 350 kids and their parents or foster parents to establish that this one diagnosis, Developmental Trauma Disorder, captured the full range of what was wrong with these children. It would enable us to give them a single diagnosis, as opposed to multiple labels, and would firmly locate the origin of their problems in a combination of trauma and compromised attachment.

In February 2009 we submitted our proposed new diagnosis of Developmental Trauma Disorder to the American Psychiatric Association, stating the following in a cover letter:

Children who develop in the context of ongoing danger, maltreatment and disrupted caregiving systems are being ill served by the current diagnostic systems that lead to an emphasis on behavioral control with no recognition of interpersonal trauma. Studies on the sequelae of childhood trauma in the context of caregiver abuse or neglect consistently demonstrate chronic and severe problems with emotion regulation, impulse control, attention and cognition, dissociation, interpersonal relationships, and self and relational schemas. In absence of a sensitive trauma-specific diagnosis, such children are currently diagnosed with an average of 3–8 co-morbid disorders. The continued practice of applying multiple distinct co-morbid diagnoses to traumatized children has grave consequences: it defies parsimony, obscures etiological clarity, and runs the danger of relegating treatment and intervention to a small aspect of the child's psychopathology rather than promoting a comprehensive treatment approach.

Shortly after submitting our proposal, I gave a talk on Developmental Trauma Disorder in Washington DC to a meeting of the mental health commissioners from across the country. They offered to support our initiative by writing a letter to the APA. The letter began by pointing out that the National Association of State Mental Health Program Directors served 6.1 million people annually, with a budget of $29.5 billion, and concluded: "We urge the APA to add developmental trauma to its list of priority areas to clarify and better characterize its course and clinical sequelae and to emphasize the strong need to address developmental trauma in the assessment of patients."

I felt confident that this letter would ensure that the APA would take our proposal seriously, but several months after our submission, Matthew Friedman, executive director of the National Center for PTSD and chair of the relevant DSM subcommittee, informed us that DTD was unlikely to be included in the DSM-5. The consensus, he wrote, was that no new diagnosis

was required to fill a “missing diagnostic niche.” One million children who are abused and neglected every year in the United States a “diagnostic niche”?

The letter went on: “The notion that early childhood adverse experiences lead to substantial developmental disruptions is more clinical intuition than a research-based fact. This statement is commonly made but cannot be backed up by prospective studies.” In fact, we had included several prospective studies in our proposal. Let’s look at just two of them here.

HOW RELATIONSHIPS SHAPE DEVELOPMENT

Beginning in 1975 and continuing for almost thirty years, Alan Sroufe and his colleagues tracked 180 children and their families through the Minnesota Longitudinal Study of Risk and Adaptation.19 At the time the study began there was an intense debate about the role of nature versus nurture, and temperament versus environment in human development, and this study set out to answer those questions. Trauma was not yet a popular topic, and child abuse and neglect were not a central focus of this study—at least initially, until they emerged as the most important predictors of adult functioning.

Working with local medical and social agencies, the researchers recruited first-time (Caucasian) mothers who were poor enough to qualify for public assistance but who had different backgrounds and different kinds and levels of support available for parenting. The study began three months before the children were born and followed the children for thirty years into adulthood, assessing and, where relevant, measuring all the major aspects of their functioning and all the significant circumstances of their lives. It considered several fundamental questions: How do children learn to pay attention while regulating their arousal (i.e., avoiding extreme highs or lows) and keeping their impulses under control? What kinds of supports do they need, and when are these needed?

After extensive interviews and testing of the prospective parents, the study really got off the ground in the newborn nursery, where researchers observed the newborns and interviewed the nurses caring for them. They then made home visits seven and ten days after birth. Before the children entered first grade, they and their parents were carefully assessed a total of fifteen times. After that, the children were interviewed and tested at regular intervals until age twenty-eight, with continuing input from mothers and teachers.

Sroufe and his colleagues found that quality of care and biological factors were closely interwoven. It is fascinating to see how the Minnesota results echo—though with far greater complexity—what Stephen Suomi found in his primate laboratory. Nothing was written in stone. Neither the mother’s personality, nor the infant’s neurological anomalies at birth, nor its IQ, nor its temperament—including its activity level and reactivity to stress—predicted whether a child would develop serious behavioral problems in adolescence.20 The key issue, rather, was the nature of the parent-child relationship: how parents felt about and interacted with their kids. As with Suomi’s monkeys, the combination of vulnerable infants and inflexible caregivers made for clingy, uptight kids. Insensitive, pushy, and intrusive behavior on the part of the parents at six months predicted hyperactivity and attention problems in kindergarten and beyond.21

Focusing on many facets of development, particularly relationships with caregivers, teachers, and peers, Sroufe and his colleagues found that

caregivers not only help keep arousal within manageable bounds but also help infants develop their own ability to regulate their arousal. Children who were regularly pushed over the edge into overarousal and disorganization did not develop proper attunement of their inhibitory and excitatory brain systems and grew up expecting that they would lose control if something upsetting happened. This was a vulnerable population, and by late adolescence half of them had diagnosable mental health problems. There were clear patterns: The children who received consistent caregiving became well-regulated kids, while erratic caregiving produced kids who were chronically physiologically aroused. The children of unpredictable parents often clamored for attention and became intensely frustrated in the face of small challenges. Their persistent arousal made them chronically anxious. Constantly looking for reassurance got in the way of playing and exploration, and, as a result, they grew up chronically nervous and nonadventurous.

Early parental neglect or harsh treatment led to behavior problems in school and predicted troubles with peers and a lack of empathy for the distress of others.22 This set up a vicious cycle: Their chronic arousal, coupled with lack of parental comfort, made them disruptive, oppositional, and aggressive. Disruptive and aggressive kids are unpopular and provoke further rejection and punishment, not only from their caregivers but also from their teachers and peers.23

Sroufe also learned a great deal about resilience: the capacity to bounce back from adversity. By far the most important predictor of how well his subjects coped with life's inevitable disappointments was the level of security established with their primary caregiver during the first two years of life. Sroufe informally told me that he thought that resilience in adulthood could be predicted by how lovable mothers rated their kids at age two.24

THE LONG-TERM EFFECTS OF INCEST

In 1986 Frank Putnam and Penelope Trickett, his colleague at the National Institute of Mental Health, initiated the first longitudinal study of the impact of sexual abuse on female development.25 Until the results of this study came out, our knowledge about the effects of incest was based entirely on reports from children who had recently disclosed their abuse and on accounts from adults reconstructing years or even decades later how incest had affected them. No study had ever followed girls as they matured to examine how sexual abuse might influence their school performance, peer relationships, and self-concept, as well as their later dating life. Putnam and Trickett also looked at changes over time in their subjects' stress hormones, reproductive hormones, immune function, and other physiological measures. In addition they explored potential protective factors, such as intelligence and support from family and peers.

The researchers painstakingly recruited eighty-four girls referred by the District of Columbia Department of Social Services who had a confirmed history of sexual abuse by a family member. These were matched with a comparison group of eighty-two girls of the same age, race, socioeconomic status, and family constellation who had not been abused. The average starting age was eleven. Over the next twenty years these two groups were thoroughly assessed six times, once a year for the first three years and again at ages eighteen, nineteen, and twenty-five. Their mothers participated in the early assessments, and their own children took part in the last. A remarkable 96 percent of the girls, now grown women, have stayed in the

study from its inception.

The results were unambiguous: Compared with girls of the same age, race, and social circumstances, sexually abused girls suffer from a large range of profoundly negative effects, including cognitive deficits, depression, dissociative symptoms, troubled sexual development, high rates of obesity, and self-mutilation. They dropped out of high school at a higher rate than the control group and had more major illnesses and health-care utilization. They also showed abnormalities in their stress hormone responses, had an earlier onset of puberty, and accumulated a host of different, seemingly unrelated, psychiatric diagnoses.

The follow-up research revealed many details of how abuse affects development. For example, each time they were assessed, the girls in both groups were asked to talk about the worst thing that had happened to them during the previous year. As they told their stories, the researchers observed how upset they became, while measuring their physiology. During the first assessment all the girls reacted by becoming distressed. Three years later, in response to the same question, the nonabused girls once again displayed signs of distress, but the abused girls shut down and became numb. Their biology matched their observable reactions: During the first assessment all of the girls showed an increase in the stress hormone cortisol; three years later cortisol went down in the abused girls as they reported on the most stressful event of the past year. Over time the body adjusts to chronic trauma. One of the consequences of numbing is that teachers, friends, and others are not likely to notice that a girl is upset; she may not even register it herself. By numbing out she no longer reacts to distress the way she should, for example, by taking protective action.

Putnam's study also captured the pervasive long-term effects of incest on friendships and partnering. Before the onset of puberty nonabused girls usually have several girlfriends, as well as one boy who functions as a sort of spy who informs them about what these strange creatures, boys, are all about. After they enter adolescence, their contacts with boys gradually increase. In contrast, before puberty the abused girls rarely have close friends, girls or boys, but adolescence brings many chaotic and often traumatizing contacts with boys.

Lacking friends in elementary school makes a crucial difference. Today we're aware how cruel third-, fourth-, and fifth-grade girls can be. It's a complex and rocky time when friends can suddenly turn on one another and alliances dissolve in exclusions and betrayals. But there is an upside: By the time girls get to middle school, most have begun to master a whole set of social skills, including being able to identify what they feel, negotiating relationships with others, pretending to like people they don't, and so on. And most of them have built a fairly steady support network of girls who become their stress-debriefing team. As they slowly enter the world of sex and dating, these relationships give them room for reflection, gossip, and discussion of what it all means.

The sexually abused girls have an entirely different developmental pathway. They don't have friends of either gender because they can't trust; they hate themselves, and their biology is against them, leading them either to overreact or numb out. They can't keep up in the normal envy-driven inclusion/exclusion games, in which players have to stay cool under stress. Other kids usually don't want anything to do with them—they simply are too weird.

But that's only the beginning of the trouble. The abused, isolated girls

with incest histories mature sexually a year and a half earlier than the nonabused girls. Sexual abuse speeds up their biological clocks and the secretion of sex hormones. Early in puberty the abused girls had three to five times the levels of testosterone and androstenedione, the hormones that fuel sexual desire, as the girls in the control group.

Results of Putnam and Trickett's study continue to be published, but it has already created an invaluable road map for clinicians dealing with sexually abused girls. At the Trauma Center, for example, one of our clinicians reported on a Monday morning that a patient named Ayesha had been raped—again—over the weekend. She had run away from her group home at five o'clock on Saturday, gone to a place in Boston where druggies hang out, smoked some dope and done some other drugs, and then left with a bunch of boys in a car. At five o'clock Sunday morning they had gang-raped her. Like so many of the adolescents we see, Ayesha can't articulate what she wants or needs and can't think through how she might protect herself. Instead, she lives in a world of actions. Trying to explain her behavior in terms of victim/perpetrator isn't helpful, nor are labels like "depression," "oppositional defiant disorder," "intermittent explosive disorder," "bipolar disorder," or any of the other options our diagnostic manuals offer us. Putnam's work has helped us understand how Ayesha experiences the world—why she cannot tell us what is going on with her, why she is so impulsive and lacking in self-protection, and why she views us as frightening and intrusive rather than as people who can help her.

THE DSM-5: A VERITABLE SMORGASBORD OF "DIAGNOSES"

When DSM-5 was published in May 2013 it included some three hundred disorders in its 945 pages. It offers a veritable smorgasbord of possible labels for the problems associated with severe early-life trauma, including some new ones such as Disruptive Mood Regulation Disorder,26 Non-suicidal Self Injury, Intermittent Explosive Disorder, Dysregulated Social Engagement Disorder, and Disruptive Impulse Control Disorder.27

Before the late nineteenth century doctors classified illnesses according to their surface manifestations, like fevers and pustules, which was not unreasonable, given that they had little else to go on.28 This changed when scientists like Louis Pasteur and Robert Koch discovered that many diseases were caused by bacteria that were invisible to the naked eye. Medicine then was transformed by its attempts to discover ways to get rid of those organisms rather than just treating the boils and the fevers that they caused. With DSM-5 psychiatry firmly regressed to early-nineteenth-century medical practice. Despite the fact that we know the origin of many of the problems it identifies, its "diagnoses" describe surface phenomena that completely ignore the underlying causes.

Even before DSM-5 was released, the American Journal of Psychiatry published the results of validity tests of various new diagnoses, which indicated that the DSM largely lacks what in the world of science is known as "reliability"—the ability to produce consistent, replicable results. In other words, it lacks scientific validity. Oddly, the lack of reliability and validity did not keep the DSM-5 from meeting its deadline for publication, despite the near-universal consensus that it represented no improvement over the previous diagnostic system.29 Could the fact that the APA had earned $100 million on the DSM-IV and is slated to take in a similar amount with the DSM-5 (because all mental health practitioners, many lawyers, and other professionals will be obliged to purchase the latest

edition) be the reason we have this new diagnostic system?

Diagnostic reliability isn't an abstract issue: If doctors can't agree on what ails their patients, there is no way they can provide proper treatment. When there's no relationship between diagnosis and cure, a mislabeled patient is bound to be a mistreated patient. You would not want to have your appendix removed when you are suffering from a kidney stone, and you would not want have somebody labeled as "oppositional" when, in fact, his behavior is rooted in an attempt to protect himself against real danger.

In a statement released in June 2011, the British Psychological Society complained to the APA that the sources of psychological suffering in the DSM-5 were identified "as located within individuals" and overlooked the "undeniable social causation of many such problems."30 This was in addition to a flood of protest from American professionals, including leaders of the American Psychological Association and the American Counseling Association. Why are relationships or social conditions left out?31 If you pay attention only to faulty biology and defective genes as the cause of mental problems and ignore abandonment, abuse, and deprivation, you are likely to run into as many dead ends as previous generations did blaming it all on terrible mothers.

The most stunning rejection of the DSM-5 came from the National Institute of Mental Health, which funds most psychiatric research in America. In April 2013, a few weeks before DSM-5 was formally released, NIMH director Thomas Insel announced that his agency could no longer support DSM's "symptom-based diagnosis."32 Instead the institute would focus its funding on what are called Research Domain Criteria (RDoC)33 to create a framework for studies that would cut across current diagnostic categories. For example, one of the NIMH domains is "Arousal/Modulatory Systems (Arousal, Circadian Rhythm, Sleep and Wakefulness)," which are disturbed to varying degrees in many patients.

Like the DSM-5, the RDoC framework conceptualizes mental illnesses solely as brain disorders. This means that future research funding will explore the brain circuits "and other neurobiological measures" that underlie mental problems. Insel sees this as a first step toward the sort of "precision medicine that has transformed cancer diagnosis and treatment." Mental illness, however, is not at all like cancer: Humans are social animals, and mental problems involve not being able to get along with other people, not fitting in, not belonging, and in general not being able to get on the same wavelength.

Everything about us—our brains, our minds, and our bodies—is geared toward collaboration in social systems. This is our most powerful survival strategy, the key to our success as a species, and it is precisely this that breaks down in most forms of mental suffering. As we saw in part 2, the neural connections in brain and body are vitally important for understanding human suffering, but it is important not to ignore the foundations of our humanity: relationships and interactions that shape our minds and brains when we are young and that give substance and meaning to our entire lives.

People with histories of abuse, neglect, or severe deprivation will remain mysterious and largely untreated unless we heed the admonition of Alan Sroufe: "To fully understand how we become the persons we are—the complex, step-by-step evolution of our orientations, capacities, and behavior over time—requires more than a list of ingredients, however important any one of them might be. It requires an understanding of the

process of development, how all of these factors work together in an ongoing way over time."34

Frontline mental health workers—overwhelmed and underpaid social workers and therapists alike—seem to agree with our approach. Shortly after the APA rejected Developmental Trauma Disorder for inclusion in the DSM, thousands of clinicians from around the country sent small contributions to the Trauma Center to help us conduct a large scientific study, known as a field trial, to further study DTD. That support has enabled us to interview hundreds of kids, parents, foster parents, and mental health workers at five different network sites over the last few years with scientifically constructed interview tools. The first results from these studies have now been published, and more will appear as this book is going to print.35

WHAT DIFFERENCE WOULD DTD MAKE?

One answer is that it would focus research and treatment (not to mention funding) on the central principles that underlie the protean symptoms of chronically traumatized children and adults: pervasive biological and emotional dysregulation, failed or disrupted attachment, problems staying focused and on track, and a hugely deficient sense of coherent personal identity and competence. These issues transcend and include almost all diagnostic categories, but treatment that doesn't put them front and center is more than likely to miss the mark. Our great challenge is to apply the lessons of neuroplasticity, the flexibility of brain circuits, to rewire the brains and reorganize the minds of people who have been programmed by life itself to experience others as threats and themselves as helpless.

Social support is a biological necessity, not an option, and this reality should be the backbone of all prevention and treatment. Recognizing the profound effects of trauma and deprivation on child development need not lead to blaming parents. We can assume that parents do the best they can, but all parents need help to nurture their kids. Nearly every industrialized nation, with the exception of the United States, recognizes this and provides some form of guaranteed support to families. James Heckman, winner of the 2000 Nobel Prize in Economics, has shown that quality early-childhood programs that involve parents and promote basic skills in disadvantaged children more than pay for themselves in improved outcomes.36

In the early 1970s psychologist David Olds was working in a Baltimore day-care center where many of the preschoolers came from homes wracked by poverty, domestic violence, and drug abuse. Aware that only addressing the children's problems at school was not sufficient to improve their home conditions, he started a home-visitation program in which skilled nurses helped mothers to provide a safe and stimulating environment for their children and, in the process, to imagine a better future for themselves. Twenty years later, the children of the home-visitation mothers were not only healthier but also less likely to report having been abused or neglected than a similar group whose mothers had not been visited. They also were more likely to have finished school, to have stayed out of jail, and to be working in well-paying jobs. Economists have calculated that every dollar invested in high-quality home visitation, day care, and preschool programs results in seven dollars of savings on welfare payments, health-care costs, substance-abuse treatment, and incarceration, plus higher tax revenues due to better-paying jobs.37

When I go to Europe to teach, I often am contacted by officials at the ministries of health in the Scandinavian countries, the United Kingdom,

Germany, or the Netherlands and asked to spend an afternoon with them sharing the latest research on the treatment of traumatized children, adolescents, and their families. The same is true for many of my colleagues. These countries have already made a commitment to universal health care, ensuring a guaranteed minimum wage, paid parental leave for both parents after a child is born, and high-quality childcare for all working mothers.