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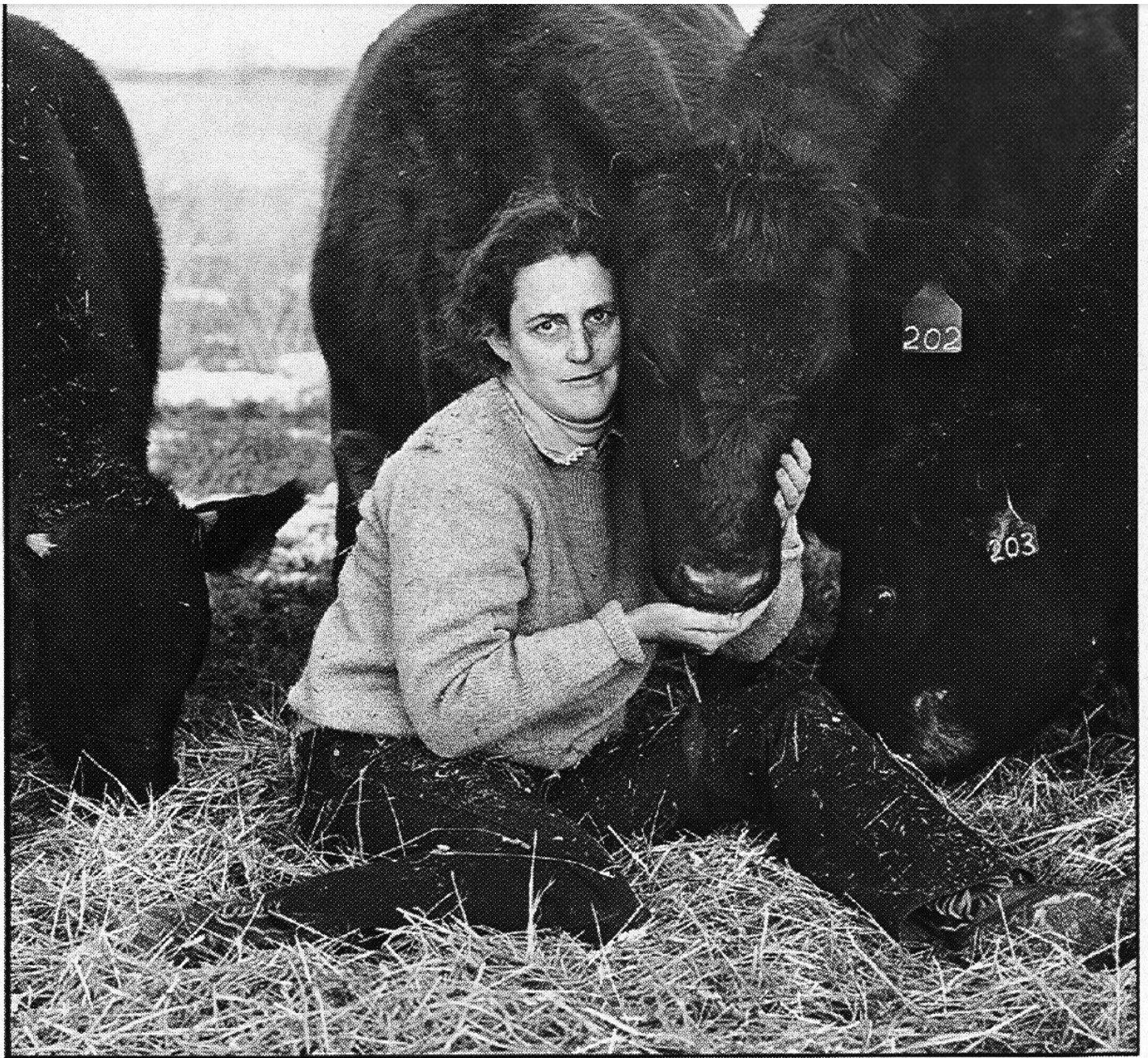
AN ANTHROPOLOGIST ON MARS

What is it like to be keenly intelligent and to care deeply about science and animal life—but to feel absolutely alienated from even the simplest human emotions and interactions? Temple Grandin knows, and her experiences offer rare insight into the enigma of autism.

By Oliver Sacks

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Grandin has made the most of her remarkable rapport with animals. “If I could snap my fingers and be non-autistic, I would not,” she said at a recent lecture. “Autism is part of who I am.” Laura Wilson

I had spent a few days with the prodigious Stephen Wiltshire, an autistic savant in London with incredible drawing ability. I had driven up to Massachusetts to visit another autistic artist, Jessy Park (whose mother describes her in a most beautiful and intelligent personal narrative, “The Siege”), and seen her intensely colored, star-studded drawings (very different from Stephen’s) and something of her labyrinthine, magic world of correlations (between numbers, colors, morality, the weather). I had paid flying visits to several schools for autistic children. I had spent an extraordinary week at a camp for autistic children, Camp Winston, in Ontario—the more so as one of the counsellors there this summer was a

in a way the rest of us were unable to do. Turning west, I had visited an entire autistic family in California—both parents, highly gifted, and their two children, all of them given (between the serious business of life) to jumping on trampolines, flapping their hands, and screaming. And now, finally, I was on my way to Fort Collins, in Colorado, to see Temple Grandin, one of the most remarkable autistic people of all: in spite of her autism, she holds a Ph.D. in animal science, teaches at Colorado State University, and runs her own business.

Autism, clearly, is a condition that has always existed, affecting occasional individuals in every period and culture. It has attracted in the popular mind an amazed, fearful, or bewildered attention (and perhaps engendered mythical or archetypal figures: the alien, the changeling, the child bewitched). And yet it was only in the nineteen-forties that it was medically described—almost simultaneously, as it happened—by Leo Kanner, in Baltimore, and Hans Asperger, in Vienna, both of whom, independently, converged on the term “autism.”

Kanner’s and Asperger’s accounts were in many ways strikingly (at times uncannily) similar—a nice example of historical synchronicity—but Asperger’s account, published in German, remained largely unknown for four decades, and was translated into English only in 1991. Hence Kanner’s formulation—with its strengths, and faults—dominated thought on autism for many years. Both Kanner and Asperger emphasized “aleness”—mental aleness—as the cardinal feature of autism; this, indeed, is why they called it “autism.” In Kanner’s words, this aleness, “whenever possible, disregards, ignores, shuts out anything that comes to the child from the outside.” This lack of contact, he felt, was only in regard to people; objects, by contrast, might be normally enjoyed. The other defining feature of autism, for Kanner, was “an obsessive insistence on sameness”: most simply in the form of repetitive, stereotyped movements and noises (“stereotypes”); then in the adoption of elaborate rituals and routines; finally, in the appearance of strange, narrow preoccupations—highly focussed, intense fascinations and fixations. The appearance of such fascinations and the adoption of such rituals, often before the age of five, were not to be seen, Kanner and Asperger thought, in any other condition.

Asperger brought out other striking features, stressing, “They do not make eye contact . . . they seem to take in things with short, peripheral glances. . . . There is a poverty of facial expressions and gestures. . . . The use of language always appears abnormal, unnatural. . . . The children totally follow their own impulses, regardless of the demands of the environment [but] there can be excellent ability of logical abstract thinking.” While Kanner seemed to see autism as an unmitigated disaster, Asperger felt that it might have certain positive or compensating features—a “particular originality of thought and experience, which may well lead to exceptional achievements in later life.”

It is clear even in these first accounts that there is a wide range of phenomena and symptoms in autism—and many more can be added to those that Kanner and Asperger listed. A majority of Kanner-type

tics, rocking, spinning, finger play, or flapping of the hands; problems of coordination and balance; peculiar difficulties, sometimes, in initiating movements, akin to what is seen in parkinsonism. There may also be, very prominently, a large range of abnormal (and often “paradoxical”) sensory responses, with some sensations being heightened and even intolerable, others (which may include pain perception) being diminished or apparently absent. There may be, if language develops, odd and complex language disorders—a tendency to verbosity, empty chatter, cliché-ridden and formulaic speech; the psychologist Doris Allen describes this aspect of their autism as a “semantic-pragmatic deficit.” In contrast, Asperger-type children are often of normal (and sometimes very superior) intelligence, and generally have fewer neurological problems.

Kanner and Asperger had looked at autism clinically, providing descriptions of such fullness and accuracy that even now, fifty years later, they can hardly be bettered. But it was not until the nineteen-seventies that Beate Hermelin and Neil O'Connor and their colleagues in London, trained in the new discipline of cognitive psychology, focussed on the mental structure of autism in a more systematic way. Their work (and that of Lorna Wing, in particular) suggested that in all autistic individuals there was a core problem, a consistent triad of impairments: impairment of social interaction with others, impairment of verbal and nonverbal communication, and impairment of play and imaginative activities. The appearance of these three together, they felt, was not fortuitous; all were expressive of a single, fundamental developmental disturbance. Autistic people, they felt, had no true concept of, or feeling for, other minds, or even of their own; they had, in the jargon of cognitive psychology, no “theory of mind.” However, this is only one hypothesis among many; no theory, as yet, encompasses the whole range of phenomena to be seen in autism. Kanner and Asperger were still, in the nineteen-seventies, pondering the syndromes they had delineated more than thirty years earlier, and the foremost workers of today have all spent twenty years or more considering them. Autism as a subject touches on the deepest questions of ontology, for it involves a radical deviation in the development of brain and mind. Our insight is advancing, but tantalizingly slowly. The ultimate understanding of autism may demand both technical advances and conceptual ones beyond anything we can now even dream of.

The picture of “classical infantile autism” is a formidable one. Most people—and, indeed, most physicians—if asked about autism, summon up a picture of a profoundly disabled child, with stereotyped movements, perhaps head-banging; rudimentary language; almost inaccessible: a creature for whom very little future lies in store.

Indeed, in a strange way, most people speak only of autistic children and never of autistic adults, as if the children somehow just vanished from the earth. But though there may indeed be a devastating picture at the age of three, *some* autistic youngsters, contrary to expectations, may go on to develop fair language, a modicum of social skills, and even high intellectual achievements; they may develop into autonomous human beings, capable of a life that may at least appear full and normal—even though, beneath it, there may remain a persistent, and even profound, autistic singularity. Asperger had a clearer idea of this

us of their experiences, their inner feelings and states, whereas those with classical autism cannot. With classical autism, there is no “window,” and we can only infer. With Asperger’s syndrome there is self-consciousness and at least some power to introspect and report.

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Whether Asperger’s syndrome is radically different from classical infantile autism (in a child of three, all forms of autism may look the same) or whether there is a continuum from the severest cases of infantile autism (accompanied, perhaps, by retardation and various neurological problems) to the most gifted, high-functioning individuals, is a matter of dispute. (Isabelle Rapin, a neurologist who specializes in autism, stresses that the two conditions may be separate at the biological level even if they are sometimes similar at the behavioral level.) It is also unclear whether this continuum should be extended to include the possession of isolated “autistic traits”—peculiar, intense preoccupations and fixations, often combined with relative social withdrawal or remoteness—such as one encounters in any number of people conventionally called “normal,” or seen, at most, as a little odd, eccentric, pedantic, or reclusive.

The cause of autism has also been a matter of dispute. Its incidence is about one in a thousand, and it occurs throughout the world, its features remarkably consistent even in extremely different cultures. It is often not recognized in the first year of life, but tends to become obvious in the second or third year. Though Asperger regarded it as a biological defect of affective contact—innate, inborn, analogous to a physical or intellectual defect—Kanner tended to view it as a psychogenic disorder, a reflection of bad parenting, and most especially of a chillingly remote, often professional “refrigerator mother.” At this time, autism was often regarded as “defensive” in nature, or confused with “childhood schizophrenia.” A whole generation of parents—mothers, particularly—were made to feel guilty for the autism of their children. It was only in the nineteen-sixties that this trend began to reverse, and the organic nature of autism to be fully accepted. (Bernard Rimland’s 1964 text, “Infantile Autism,” played an important part here.)

That the disposition to autism is biological is no longer in doubt, nor the increasing evidence that it is, in some cases, genetic. Genetically, autism is heterogeneous—it is sometimes dominant, sometimes recessive. It is much more common in males. The genetic form may be associated, in the affected individual or the family, with other genetic disorders, such as dyslexia, attention-deficit disorder, obsessive-compulsive disorder, or Tourette’s syndrome. But autism may also be acquired. This was first realized in the nineteen-sixties, with the epidemic of rubella, when a large number of babies exposed to this prenatally went on to develop autism. It remains unclear whether the so-called regressive forms of autism—with sometimes abrupt losses of language and social behavior in two- to four-year-olds who had previously been developing relatively normally—are genetically or environmentally caused. Autism may be a consequence

syndrome. Autism, or autism-like syndromes, may develop even in adult life, though infrequently, especially after certain forms of encephalitis. (Some of my “Awakenings” patients, I think, had elements of autism, too.) And yet the parents of an autistic child, who find their infant receding from them, becoming remote, inaccessible, unresponsive, may still be tempted to blame themselves. They may find themselves struggling to relate to and love a child who, seemingly, no longer loves them back. They may make superhuman efforts to get through, to hold on to a child who inhabits some unimaginable, alien world; and yet all their efforts may seem to be in vain.

The history of autism, indeed, has been in part a desperate search for, and promotion of, “breakthroughs” of various sorts. One father of an autistic boy expressed this to me with some bitterness: “They come up with a new ‘miracle’ every four years—first it was elimination diets, then magnesium and vitamin B6, then forced holding, then operant conditioning and behavior modification—now all the excitement is about auditory desensitization and F.C.” Facilitated communication, which has been widely publicized, is based on the notion that if the hand or arm of a nonverbal autistic child is supported by a “facilitator,” the child may then be able to communicate by typing, or using an electronic communicator or a letter board. This technique was originally used, with considerable success, in children with cerebral palsy, in whom motor difficulties may make it impossible to speak. But autism is not simply a motor problem, like cerebral palsy; it is infinitely more complex. And yet the most extravagant claims have been made for the powers of F.C. in autistic people, too (that previously nonlinguistic children, for instance, have written entire autobiographies), and its proponents range from enthusiastic to evangelical. But rigorous testing suggests that, while F.C. can be useful for children with cerebral palsy or juvenile parkinsonism, its use with autistic children is much more dubious, and that in many cases the facilitator unconsciously guides the child’s hand.

This is not to say that some forms of intervention should not be tried. It is possible that even such methods as F.C. may provide the child with a huge amount of attention and structure that may be helpful. One of the deep frustrations in teaching autistic children must be the great unpredictability in outcome, so that some will do relatively well while others remain unreachable.

No two people with autism are the same; its precise form or expression is different in every case. Moreover, there may be a most intricate (and potentially creative) interaction between the autistic traits and the other qualities of the individual. So, while a single glance may suffice for clinical diagnosis, if we hope to understand the autistic individual, nothing less than a total biography will do.

My own first experience with the autistic was in a grim ward in a state hospital in the mid-sixties. Many of these patients, perhaps a majority, were also retarded; many had seizures; many had violent self-abusive behaviors, such as head-banging; many had other neurological problems. These worst-off patients tended to be multiply handicapped in addition to their autism (and several had been

described—remarkable numerical or graphic powers, for instance. It was these special talents, seemingly isolated from the rest of the mind and personality, and maintained by a passionate, intensely focussed fixation or motivation—these so-called savant syndromes—that engaged my special interest, and which I explored most deeply at the time. And even in this population, of the seemingly hopeless, there were some who responded to individual attention. One young patient, nonverbal, responded to music and danced; another, after some weeks, started to play pool with me, and later, in the botanical garden, said his first word—“dandelion.” Many of these patients, born in the nineteen-forties or early fifties, had not even been diagnosed as autistic when young, but had been lumped together indiscriminately with the retarded and psychotic, and warehoused in huge institutions since early childhood. This is probably how the severely autistic have been treated for centuries. It has only been in the last two decades or so that the picture for such youngsters has decisively changed, with increasing medical and educational awareness of their special strengths and problems, and the widespread introduction of special schools and camps for autistic children.

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Visiting a few of these during August, I had seen a variety of children, some intelligent, some mildly retarded, some outgoing, some timid, all with their own individual personalities. At one such school, as I approached, I had seen some children in the playground, swinging and playing ball. How normal, I thought—but when I got closer I saw one child swinging obsessively in terrifying semicircles, as high as the swing would go; another throwing a small ball monotonously from hand to hand; another spinning on a roundabout, around and around; another not building with bricks but lining them up endlessly, in neat, monotonous rows. All were engaged in solitary, repetitive activities; none was really playing, or playing with any of the others. Some of the children inside, when not in classes, would rock back and forth; some would flap their hands or jabber unintelligibly. Occasionally, one of the teachers told me, a few of the children would have sudden panics or rages, and scream or hit out uncontrollably. Some of the children would echo any words that were spoken to them. One boy apparently had an entire television show by heart, and would “replay” it all day, in a peculiar loud voice. At Camp Winston, in Ontario, an attractive six-year-old boy had been given a pair of scissors and was cutting minute “H”s, a fraction of an inch high, each perfect, from a piece of paper. Most of the children looked physically normal—it was their remoteness, their inaccessibility, that was so uncanny.

Some, in adolescence, were starting to emerge—to speak fluently, to learn social skills (much more difficult for such children than any academic learning), to create social surfaces they could present to the world.

Without special schooling—schooling that for many had started in the nursery or at home—these autistic youngsters, despite their often good intelligence and background, might have remained profoundly isolated and disabled. They had certainly learned, many of them, to “operate” after a fashion, to show at least a formal or external recognition of social conventions—and yet the very formality or externality of their behavior was itself disconcerting. I felt this especially at one school I visited, where children would stick out rigid hands and say in loud, unmodulated voices, “Good morning my name is Peter . . . I am very well thank you how are you,” without any punctuation or intonation, affect or tone, in a sort of litany. Would any of them, I wondered, ever achieve true autonomy? Use their social automatisms pragmatically, as a way of functioning in the world, but, beyond this, achieve a true inwardness of their own, perhaps a profoundly different inner life, of an autistic sort—perhaps an inner life known or shown only to a few others?

Uta Frith has written, in her book “Autism: Explaining the Enigma,” “Autism . . . does not go away . . . Nevertheless, autistic people can, and often do, compensate for their handicap to a remarkable degree. [But] there remains a persistent deficit . . . something that cannot be corrected or substituted.” She also implies, in a speculative mood, that there may be a reverse side to this “something,” a sort of moral or intellectual intensity or purity, so far removed from the normal as to seem noble, ridiculous, or fearful to the rest of us. She wonders, in this regard, about the blessed fools of old Russia, about the ingenuous Brother Juniper, an early follower of St. Francis, and, interestingly, about Sherlock Holmes, with his oddness, his peculiar fixations—his “little monograph on the ashes of 140 different varieties of pipe, cigar and cigarette tobacco,” his “clear powers of observation and deduction, unclouded by the everyday emotions of ordinary people,” and the extreme unconventionality that often allows him to solve a case that the police, with their more conventional minds, are unable to solve. Asperger himself wrote of “autistic intelligence,” and saw it as a sort of intelligence scarcely touched by tradition and culture—unconventional, unorthodox, strangely “pure” and original, akin to the intelligence of true creativity.

Dr. Frith, when we met in London, expanded on these themes, and said I must be sure to visit one of the most remarkable autistic people she knew—to see her at work and at home, to spend time with her. “Go see Temple,” Dr. Frith said as I left her office.

book, I could not help being suspicious of it: the autistic mind, it was supposed at that time, was incapable of self-understanding and understanding others, and therefore of authentic introspection and retrospection. How *could* an autistic person write an autobiography? It seemed a contradiction in terms. When I observed that the book had been written in collaboration with a writer, Margaret Scariano, I wondered whether some of its fine and unexpected qualities—its coherence, its poignancy, its often “normal” tone—might in fact be due to her. Such suspicions have continued to be voiced, in regard to Grandin’s book and to autistic autobiographies in general, but as I read Temple’s papers (and her many autobiographical articles) I found a detail and consistency, a directness, that changed my mind.

Reading her autobiography and her articles, one gets a feeling of how strange, how different she was as a child, how far removed from “normal.” At six months, she started to stiffen in her mother’s arms, at ten months to claw her “like a trapped animal.” Normal contact was almost impossible in these circumstances. Temple describes her world as one of sensations heightened, sometimes, to an excruciating degree (and inhibited, sometimes to annihilation): she speaks of her ears, at the age of two or three, as helpless microphones, transmitting everything, irrespective of relevance, at full, overwhelming volume—and there was an equal lack of modulation in all her senses. She showed an intense interest in odors and a remarkable sense of smell. She was subject to sudden impulses and, when these were frustrated, violent rage. She perceived none of the usual rules and codes of human relationship. She lived, sometimes raged, inconceivably disorganized, in a world of unbridled chaos. In her third year, she became destructive and violent:

Normal children use clay for modelling; I used my feces and then spread my creations all over the room. I chewed up puzzles and spit the cardboard mush out on the floor. I had a violent temper, and when thwarted, I’d throw anything handy—a museum quality vase or leftover feces. I screamed continually . . .

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And yet, like many autistic children, she soon developed an immense power of concentration, a selectivity of attention so intense that it could create a world of its own, a place of calm and order, in the chaos and tumult: “I could sit on the beach for hours dribbling sand through my fingers and fashioning miniature mountains,” she writes. “Each particle of sand intrigued me as though I were a scientist looking through a microscope. Other times I scrutinized each line in my finger, following one as if it were a road on a map.” Or she would spin, or spin a coin, so raptly that she saw and heard nothing else. “People around me were transparent. . . . Even a sudden loud noise didn’t startle me from my world.”

At three, she was taken to a neurologist, and the diagnosis of autism was made; it was hinted that lifelong institutionalization would probably be necessary. The total absence of speech at this age seemed especially

How, I had to wonder, had she ever moved from this almost unintelligible childhood, with its chaos, its fixations, its inaccessibility, its violence—this fierce and desperate state, which had almost led to her institutionalization at the age of three—to the successful biologist and engineer I was going to see?

I phoned Temple from the Denver airport to reconfirm our meeting—it was conceivable, I thought, that she might be somewhat inflexible about arrangements, so time and place should be set as definitely as possible. It was an hour and a quarter's drive to Fort Collins, Temple said, and she provided minute directions for finding her office at Colorado State University, where she is an assistant professor in the Animal Sciences Department. At one point, I missed a detail, and asked Temple to repeat it, and was startled when she repeated the entire directional litany—several minutes' worth—in virtually the same words. It seemed as if the directions had to be given as they were held in Temple's mind, entire—that they had fused into a fixed association or program, and could no longer be separated into their components. One instruction, however, had to be modified. She had told me at first that I should turn right onto College Street at a particular intersection marked by a Taco Bell restaurant. In her second set of directions, Temple added an aside here, said the Taco Bell had recently had a facelift and been housed in a fake cottage, and no longer looked in the least “bellish.” I was struck by the charming, whimsical adjective “bellish”—autistic people are often called humorless, unimaginative, and “bellish” was surely an original concoction, a spontaneous and delightful image.

I made my way to the university campus and located the Animal Sciences Building, where Temple was waiting to greet me. She is a tall, strongly built woman in her mid-forties; she was wearing jeans, a knit shirt, Western boots, her habitual dress. Her clothing, her appearance, her manner were plain, frank, and forthright; I had the impression of a sturdy, no-nonsense cattlegirl, with an indifference to social conventions, appearance, or ornament, an absence of frills, an absolute directness of manner and mind. When she raised her arm in greeting, the arm went too high, seemed to get caught for a moment in a sort of spasm or fixed posture—a hint, an echo, of the stereotypes she once had. Then she gave me a strong handshake and led the way down to her office. (Her gait seemed to me slightly clumsy or uncouth, as is often the case with autistic adults. Temple attributes this to a simple ataxia associated with impaired development of the vestibular system and part of the cerebellum. Later I did a brief neurological exam, focussing on her cerebellar function and balance; I did indeed find a little ataxia, but insufficient, I thought, to explain her odd gait.)

She sat me down with little ceremony, no preliminaries, no social niceties, no small talk about my trip or how I liked Colorado. Her office, crowded with papers, with work done and to do, could have been that of any academic, with photographs of her projects on the wall, and animal knickknacks she had picked up on her travels. She plunged straight into talking of her work, speaking of her early interests in psychology and animal behavior, how they were connected with self-observation and a sense of her own needs as an autistic person, and how this had joined with the visualizing and engineering part of her mind to point her

She handed me a book containing some of the layouts she had developed over the years—the book was titled “Beef Cattle Behaviors, Handling, and Facilities Design”—and I admired the complex and beautiful designs inside, and the logical presentation of the book, starting with diagrams of cattle and sheep and hog behavior and moving through designs of corrals to ever more complex ranch and feedlot facilities.

She spoke well and clearly, but with a certain unstoppable impetus and fixity. A sentence, a paragraph, once started, had to be completed; nothing was left implicit, hanging in the air.

I was feeling somewhat exhausted, hungry, and thirsty—I had been travelling all day and had missed lunch—and I kept hoping Temple would notice and offer me some coffee. She did not, so, after an hour, almost fainting under the barrage of her overexplicit and relentless sentences, and the need to attend to several things at once (not only what she was saying, which was often complex and unfamiliar, but also her mental processes, the sort of person she was), I finally asked for some coffee. There was no “I’m sorry, I should have offered you some before,” no intermediacy, no social junction. Instead, she immediately took me to a coffeepot that was kept brewing in the secretaries’ office upstairs. She introduced me to the secretaries in a somewhat brusque manner, giving me the feeling, once again, of someone who had learned, roughly, “how to behave” in such situations without having much personal perception of how other people felt—the nuances, the social subtleties involved.

“Time to get some dinner,” Temple suddenly announced after we had spent another hour in her office. “We eat early in the West.” We went to a nearby Western restaurant, one with swinging doors, and with guns and cattle horns on the walls—it was already crowded, as Temple had said it would be, at five in the afternoon—and we ordered a classic Western meal of ribs and beer. We ate heartily and talked throughout the meal about the technical aspects of Temple’s work and the ways in which she sets out every design, every problem, visually, in her mind. As we left the restaurant, I suggested we go for a walk, and Temple took me out to a meadow along an old railway line. The day was cooling rapidly—we were at five thousand feet—and in the long evening light gnats darned the air and crickets were stridulating all around us. I found some horsetails (one of my favorite plants) in a muddy patch below the tracks and became excited about them. Temple glanced at them, said “*Equisetum*,” but did not seem stirred by them, as I was.

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On the plane to Denver, I had been reading a remarkable piece of writing by a highly gifted, normal nine-year-old—a fairy story she had created, with a wonderful sense of myth, a whole world of magic, animism, and cosmogonies. What, I wondered as we walked through the horsetails, of Temple’s cosmogony? How

particular—how he had flown too near the sun and his wings had melted and he had plummeted to his death. “I understand Nemesis and Hubris,” she said. But the loves of the gods, I ascertained, left her unmoved—and puzzled. It was similar with Shakespeare’s plays. She was bewildered, she said, by *Romeo and Juliet* (“I never knew what they were up to”), and with “*Hamlet*” she got lost with the back-and-forth of the play. Though she ascribed these problems to “sequencing difficulties,” they seemed to arise from her failure to empathize with the characters, to follow the intricate play of motive and intention. She said that she could understand “simple, strong, universal” emotions but was stumped by more complex emotions and the games people play. “Much of the time,” she said, “I feel like an anthropologist on Mars.”

She was at pains to keep her own life simple, she said, and to make everything very clear and explicit. She had built up a vast library of experiences over the years, she went on. They were like a library of videotapes, which she could play in her mind and inspect at any time—“videos” of how people behaved in different circumstances. She would play these over and over again, and learn, by degrees, to correlate what she saw, so that she could then predict how people in similar circumstances might act. She had complemented her experience by constant reading, including reading of trade journals, and the *Wall Street Journal*—all of which enlarged her knowledge of the species. “It is strictly a logical process,” she explained.

In one plant she had designed, she said, there had been repeated breakdowns of the machinery, but these occurred only when a particular man, John, was in the room. She “correlated” these incidents and inferred at last that John must be sabotaging the equipment. “I had to learn to be suspicious, I had to learn it cognitively. I could put two and two together, but I couldn’t see the jealous look on his face.” Such incidents have not been uncommon in her life: “It bends some people out of shape that this autistic weirdo can come in and design all the equipment. They want the equipment, but it galls them that they can’t do it themselves, but that Tom”—an engineering colleague—“and I can, that we’ve got hundred-thousand-dollar Sun workstations in our heads.” In her ingenuousness and gullibility, Temple was at first a target for all sorts of tricks and exploitations; this sort of innocence or guilelessness, arising not from moral virtue but from failure to understand dissembling and pretense (“the dirty devices of the world,” in Traherne’s phrase), is almost universal among the autistic. But over the years Temple has learned, in her indirect way, by inspecting her “library,” some of the ways of the world. She has, in fact, been able to found her own company and to work as a freelance consultant to and designer of animal facilities all over the world. By professional standards, she is extraordinarily successful, but other human interactions—social, sexual—she cannot “get.” “My work is my life,” she told me several times. “There is not that much else.”

There seemed to me pain, renunciation, resolution, and acceptance all mixed together in her voice, and these are the feelings that sound through her writings. In one article she writes:

I do not fit in with the social life of my town or university. Almost all of my social contacts are with livestock people or people interested in autism. Most of my Friday and Saturday nights are spent writing papers and drawing. My interests are factual and my recreational reading consists mostly of science and livestock publications. I have little interest in novels with

did not have my challenging career.

Early the next morning, a Saturday, Temple picked me up in her four-wheel-drive, a rugged vehicle she drives all over the West to visit farms, ranches, corrals, and meat plants. As we headed for her house, I quizzed her about the work she had done for her Ph.D.; her thesis was on the effects of enriched and impoverished environments on the development of pigs' brains. She told me about the great differences that developed between the two groups—how sociable and delightful the “enriched” pigs became, how hyperexcitable and aggressive (and almost “autistic”) the “impoverished” ones were by contrast. (She wondered whether impoverishment of experience was not a contributing factor in human autism.) “I got to love my enriched pigs,” she said. “I was very attached. I was so attached I couldn’t kill them.” The animals had to be sacrificed at the end of the experiment so their brains could be examined. She described how the pigs, at the end, trusting her, let her lead them on their last walk, and how she had calmed them, by stroking them and talking to them, while they were killed. She was very distressed at their deaths—“I wept and wept.”

She had just finished the story when we arrived at her home—a small two-story town house, some distance from the campus. Downstairs was comfortable, with the usual amenities—a sofa, armchairs, a television, pictures on the wall—but I had the sense that it was rarely used. There was an immense sepia print of her grandfather's farm in Grandin, North Dakota, in 1880; her other grandfather, she told me, had invented the automatic pilot for planes. These two were the progenitors, she feels, of her agricultural and engineering talents. Upstairs was her study, with her typewriter (but no word processor), absolutely bursting with manuscripts and books—books everywhere, spilling out of the study into every room in the house. (My own little house was once described as “a machine for working,” and I had a somewhat similar impression of Temple's.) On one wall was a large cowhide with a huge collection of identity badges and caps, from the hundreds of conferences she has lectured at. I was amused to see, side by side, an I.D. from

autism. The intimate blending of the two was epitomized by the medley of badges side by side.

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Finally, without diffidence or embarrassment (emotions unknown to her), Temple showed me her bedroom, an austere room with whitewashed walls and a single bed, and, next to the bed, a very large, strange-looking object. “What is *that*?” I asked.

“That’s my squeeze machine,” Temple replied. “Some people call it my hug machine.”

The device had two heavy, slanting wooden sides, perhaps four by three feet each, pleasantly upholstered with a thick, soft padding. They were joined by hinges to a long, narrow bottom board, to create a V-shaped, body-sized trough. There was a complex control box at one end, with heavy-duty tubes leading off to another device, in a closet. Temple showed me this as well. “It’s an industrial compressor,” she said, “the kind they use for filling tires.”

“And what does this *do*?”

“It exerts a firm but comfortable pressure on the body, from the shoulders to the knees,” Temple said. “Either a steady pressure or a variable one or a pulsating one, as you wish,” she added. “You crawl into it—I’ll show you—and turn the compressor on, and you have all the controls in your hand, here, right in front of you.”

When I asked her why one should seek to submit oneself to such pressure, she told me. When she was a little girl, she said, she had longed to be hugged, but had at the same time been terrified of all contact. When she was hugged, especially by a favorite (and vast) aunt, she felt overwhelmed, overcome by sensation; she had a sense of peacefulness and pleasure, but also of terror and engulfment. She started to have daydreams—she was just five at the time—of a magic machine which could squeeze her powerfully but gently, in a huglike way, and in a way entirely commanded and controlled by her. Years later, as an adolescent, she had seen a picture of a squeeze chute designed to hold or restrain calves, and realized that that was *it*: a little modification to make it suitable for human use, and it could be her magic machine. She had considered other devices—inflatable suits, which could exert an even pressure all over the body—but the squeeze chute, in its simplicity, was quite irresistible.

Being of a practical turn of mind, she soon made her fantasy come true. The early models were crude, with some snags and glitches, but she soon evolved a totally comfortable, predictable system, capable of administering a “hug” with whatever parameters she desired. Her squeeze machine had worked exactly as she hoped, yielding the very sense of calmness and pleasure she had dreamed of since childhood. She

neither exhibited nor concealed but kept openly in her room at college, excited derision and suspicion, and was seen by psychiatrists as a “regression” or “fixation”—something that needed to be psychoanalyzed and resolved. With her characteristic stubbornness, tenacity, single-mindedness, and bravery—along with a complete absence of inhibition or hesitation—Temple ignored all these comments and reactions, and determined to find a scientific “validation” of her feelings.

Both before and after writing her doctoral thesis, she made a systematic investigation of the effects of deep pressure in autistic people, college students, and animals, and last year a paper of hers on this was published in the *Journal of Child and Adolescent Psychopharmacology*. Today, her squeeze machine, variously modified, is receiving extensive clinical trials. She has also become the world’s foremost designer of squeeze chutes for cattle, and has published, in the meat-industry and veterinary literature, many articles on the theory and practice of humane restraint and gentle holding.

While telling me this, Temple knelt down, then eased herself, face down and at full length, into the V, turned on the compressor (it took a minute for the master cylinder to fill), and twisted the controls. The sides converged, claspings her firmly, and then, as she made a small adjustment, relaxed their grip slightly. It was the most bizarre thing I had ever seen, and yet, for all its oddness, it was moving and simple. Certainly there was no doubt of its effect. Temple’s voice, often loud and hard, became softer and gentler as she lay in her machine. “I concentrate on how gently I can do it,” she said, and then spoke of the necessity of “totally giving in to it. . . . I’m getting real relaxed now,” she added quietly. “I guess others get this through relation with other people.”

It is not just pleasure or relaxation that Temple gets from the machine but, she maintains, a feeling for others. As she lies in her machine, she says, her thoughts often turn to her mother, her favorite aunt, her teachers. She feels their love for her, and hers for them. She feels that the machine opens a door into an otherwise closed emotional world and allows her, almost teaches her, to feel empathy for others.

After twenty minutes or so, she emerged, visibly calmer, emotionally less rigid (she says that a cat can easily sense the difference in her at these times), and asked me if I would care to try the machine.

Indeed, I was curious, and scrambled into it, feeling a little foolish and self-conscious—but less so than I might have been, because Temple herself was so wholly lacking in self-consciousness. She turned the compressor on again and filled the master cylinder, and I experimented gingerly with the controls. It was indeed a sweet, calming feeling—one that reminded me of my deep-diving days long ago, when I felt the pressure of the water on my diving suit as a whole-body embrace.

After my own trial in the squeeze machine, and with both of us suitably relaxed, we drove out to the university’s experimental farm, where Temple does much of her basic field work. I had earlier thought there might be a separation, even a gulf, between the personal—and, so to speak, private—realm

outward, were completely fused.

“Cattle are disturbed by the same sorts of sounds as autistic people—high-pitched sounds, air hissing, or sudden loud noises; they cannot adapt to these,” Temple told me. “But they are not bothered by low-pitched, rumbling noises. They are disturbed by high visual contrasts, shadows or sudden movements. A light touch will make them pull away, a firm touch calms them. The way I would pull away from being touched is the way a wild cow will pull away—getting me used to being touched is very similar to taming a wild cow.” It was precisely her sense of the common ground (in terms of basic sensations and feelings) between animals and people that allowed her to show such sensitivity to animals, and to insist so forcefully on their humane management.

She had been primed to this knowledge, she felt, partly through the experience of her own autism and partly because she came from a long line of farmers and, as a child, had spent much of her time on farms. And her own mode of thinking allowed her no escape from these realities. “If you’re a visual thinker, it’s easier to identify with animals,” she said as we drove to the farm. “If all your thought processes are in language, how could you imagine that cattle think? But if you think in pictures . . .” Temple has always been a powerful visualizer. She was astonished when she discovered that her own near-hallucinatory power of visual imagery was not universal—that there were others who, apparently, had other ways to think. She is still very puzzled by this. “How do *you* think?” she kept asking me. But she had no sense that she could draw, make blueprints, until she was twenty-eight, when she met a draftsman and watched him drawing plans. “I saw how he did it,” she told me. “I went and got exactly the same instruments and pencils as he used—a 0.5-mm. HB Pentel—and then I started pretending I *was* him. The drawing did itself, and when it was all done I couldn’t believe I’d done it. I didn’t have to learn how to draw or design, I pretended I was David—I appropriated him, drawing and all.”

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Temple constantly runs “simulations,” as she calls them, in her head: “I visualize the animal entering the chute, from different angles, different distances, zooming in or wide-angle, even from a helicopter view—or I turn myself into an animal, and feel what it would feel entering the chute.”

But if one thinks only in pictures, I could not help reflecting, one might not understand what nonvisual thinking was like, and one would miss the richness and ambiguity, the cultural presupposition, the depth, of language. All autistics, Temple had said earlier, were intensely visual thinkers, like her. If this was true, was it, I wondered, more than a coincidence? Was Temple’s intense visuality a vital clue to her autism?

A cattle farm, even a large one, is often a quiet place, but when we arrived we could hear a great tumult of bellowing. “They must have separated the calves from the cows this morning,” Temple said, and, indeed,

baby. Bellowing for it, hunting for it. She'll forget for a while, then start again. It's like grieving, mourning—not much written about it. People don't like to allow them thoughts or feelings. Skinner wouldn't allow them."

As an undergraduate in New Hampshire, she had written to B. F. Skinner, the great behaviorist, and finally she had visited him. "It was like having an audience with God," she said. "It was a letdown. He was just a regular human being. He said, 'We don't have to know how the brain works—it's just a matter of conditioned reflexes.' No way *I* could believe it was just stimulus-response." The Skinner era, Temple concluded, was one that denied feelings to animals, and rationalized regarding them as automatons; it was an era of exceptional cruelty, both in animal experimentation and in the management of farms and slaughterhouses. She had read somewhere that behaviorism was an uncaring science, and this was exactly how she herself felt about it. Her own aspiration was to bring a vivid sense of animals' feelings back into husbandry.

Seeing the grieving cow and hearing the bereft bellows angered Temple and turned her mind toward inhumanities in slaughter. She had nothing to do with chickens, she said, but the killing of chickens was particularly loathsome. "When it's time for chickens to go to McNuggetland, they pick 'em up, hang 'em upside down, cut their throats." A similar shackling of cattle, and hanging them upside down so that the blood rushes to their heads before their throats are cut, is a common sight in old kosher slaughterhouses, she said. "Sometimes their legs get broken, they scream in pain and terror." Mercifully, such practices are now starting to change. Properly performed, "slaughter is more humane than nature," she went on. "Eight seconds after the throat's cut, endorphins are released; the animal dies without pain. It is similar in nature, after sheep have been ripped up by coyotes. Nature has done this to ease the pain of a dying animal." What is terrible, the more so because it is avoidable, she feels, is pain and cruelty, the introduction of fear and stress before the lethal cutting; and it is this that she is most concerned to prevent. "I want to reform the meat industry. The activists want to shut it down," she said, and added, "I don't like radical anything, left or right. I have a radical dislike of radicals."

Away from the bellowing of the separated calves and mothers, whose distress Temple seemed to feel in her bones, we found a calm, quiet area of the farm, where cattle were browsing placidly. Temple knelt and held out some hay, and a cow came over to her and took the hay, nudging her hand with its soft muzzle. A soft, happy look came over Temple's face. "Now I'm at home," she said. "When I'm with cattle, it's not at all cognitive. I know what the cow's feeling."

The cattle seemed to sense this, sensed her calm, her confidence, and came up to her hand. They did not come up to me, sensing, perhaps, the unease of the city dweller, who, living mostly in a world of cultural conventions and signals, is unsure how to behave with huge, nonverbal animals.

animals.”

I was struck by the enormous difference, the gulf, between Temple’s immediate, intuitive recognition of animal moods and signs and her extraordinary difficulties understanding human beings, their codes and signals, the way they conducted themselves. One could not say that she was devoid of feeling or had a fundamental lack of sympathy. On the contrary, her sense of animals’ moods and feelings was so strong that these almost took possession of her, overwhelmed her at times. She feels she can have sympathy for what is physical or physiological—for an animal’s pain or terror—but lacks empathy for people’s states of mind and perspectives. When she was younger, she was hardly able to interpret even the simplest expressions of emotion; she learned to “decode” them later, without necessarily feeling them. (Similarly, Dr. Hermelin, in London, had told me a story about an intelligent autistic girl of twelve who came to her and said, of another student, “Joanie is making a funny noise.” Upon going to investigate, Hermelin found Joanie crying bitterly. The meaning of weeping had been completely missed by the autistic girl: she had merely registered it as something physical, “a funny noise.” I was reminded, too, of Jessy Park, and how she was fascinated by the fact that onions could make one weep but was totally unable to comprehend that one could also weep for joy.)

At the level of the sensorimotor, the concrete, the unmediated, Temple is enormously sensitive. “I can tell if a human being is angry,” she told me, “or if he’s smiling.” At this primal, almost animal level, then, she has no difficulty. What about children, I asked her. Were they not intermediate between animals and adults? On the contrary, Temple said, she had great difficulties with children—trying to talk with them, to join in their games (she could not even play peekaboo with a baby, she said, because she would get the timing all wrong)—as she had had such difficulties herself as a child. Children, she feels, are already far advanced, by the age of three or four, along a path that she, as an autistic person, has never advanced far on. Little children, she feels, already “understand” other human beings in a way she can never hope to do.

What is it, then, I pressed her further, that goes on between normal people, from which she feels herself excluded? It has to do, she has inferred, with an implicit knowledge of social conventions and codes, of cultural presuppositions of every sort. This implicit knowledge, which every normal person accumulates and generates throughout life on the basis of experience and encounters with others, Temple seems to be largely devoid of. Lacking it, she has instead to “compute” others’ feelings and intentions and states of mind, to try to make algorithmic, explicit, what for the rest of us is second nature. She herself, she infers, may never have had the normal social experiences from which a normal social knowledge is constructed.

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And it may be from this, too, that her difficulties with gesture and language stem—difficulties that were

It is extraordinary to hear Temple speak of this time, or to read of it in her book. When she was three, as an outside chance, although her family did not have much belief in its promise, she was sent to a special nursery school for disturbed and handicapped children, and a trial of speech therapy was suggested. Somehow, the school and the speech therapist got through to Temple, rescued her (she later came to feel) from the abyss, and started her on her slow emergence. She remained clearly autistic, but her new powers of language and communication now gave her an anchor, some ability to master what had been total chaos before. Her sensory system, with its violent oscillations of oversensitivity and undersensitivity, started to stabilize a little. There were many periods of backsliding and regression, but it is clear that by the age of six she had achieved fair language and, with this, had crossed the Rubicon that divides “high functioning” people like her from “low functioning” ones, who never achieve proper language or autonomy. With the access of language, the terrible triad of impairments—social, communicative, and imaginative—began to yield somewhat. Temple started having some contact with others, especially one or two teachers who could appreciate her intelligence, her specialness, and could withstand her pathology—her now incessant talking and questioning, her strange fixations, her rages. No less crucial was the emergence of some genuine playfulness and creativity—painting, drawing, making cardboard models and sculptures, as well as “unique and creative ways of being naughty.” At eight, Temple was starting to achieve the “pretend play” that normal children achieve as toddlers but the lower-functioning autistic child never achieves at all.

Her mother, an aunt, and several teachers were crucial, but also crucial, on the long journey up, was the slow development that many autistics show; autism, being a developmental disorder, tends to become less extreme as one grows older, and one may learn to cope with it better.

Temple had longed for friends at school, and would have been totally, fiercely loyal to a friend (for two or three years, she had an imaginary friend), but there was something about the way she talked, the way she

that I was different. I thought the other kids were different. I could never figure out why I didn't fit in." Something was going on between the other kids, something swift, subtle, constantly changing—an exchange of meanings, a negotiation, a swiftness of understanding so remarkable that sometimes she wondered if they were all telepathic. She is now aware of the existence of these social signals. She can infer them, she says, but she herself cannot perceive them, cannot participate in this magical communication directly, or conceive the many-levelled, kaleidoscopic states of mind behind it. Knowing this intellectually, she does her best to compensate, bringing immense intellectual effort and computational power to bear on matters that others understand with unthinking ease. This is why she often feels excluded, an alien.

A crucial event occurred when she was fifteen. She had become fascinated with the squeeze chutes used to hold cattle. A science teacher took her fixation seriously, instead of scoffing, and suggested she actually build her own squeeze chute. From this beginning, he guided her from particular considerations of farm animals and machinery to a general interest in biology and all science. And here Temple, still quite abnormal in her understanding of ordinary or social language—she still missed allusions, presuppositions, irony, metaphors, jokes—found the language of science and technology a huge relief. It was much clearer, much more explicit, with far less depending on unstated assumptions. Technical language was as easy for her as social language was difficult, and it now provided her with an entry into science.

But if there was a resolution at this level, with the focussing of much of her intellectual and emotional energy into science, other tensions, anxieties—even agonies—remained. With the onset of adolescence, Temple started to confront the realization that she might never lead a “normal” life, or enjoy the “normal” satisfactions—love and friendship, recreation and society—that went with it. This realization may be devastating for gifted young autistic people at this stage, and has been a cause of depression in some and even of suicide on occasion. Temple dealt with this realization, partly, by renunciation and dedication: she would be celibate, she decided, and would make science her whole life.

Adolescence also taught her that not only her emotional state but her whole mental and physical being were very finely tuned, and could easily be thrown out of balance by overwhelming sensory stimuli, stress, exhaustion, or conflict. The hormonal turbulences of adolescence, in particular, threw her up and down. But there was also a passion, an intensity, at this turbulent time; and it was only when she had finished college and was launched on her career, she said, that she could afford to calm down. Indeed, she felt she had to; otherwise her body would destroy itself. At this point, she started on a small dose of imipramine, a drug marketed as an antidepressant. In her book, Temple speaks of the pros and cons of this:

Gone are the frenzied searches for the basic meaning of life. I no longer fixate on one thing since I am no longer driven. During the last four years I have written very few entries in my diary because the anti-depressant has taken away much of the fervor. With the passion subdued, my career and . . . business is going well. Since I am more relaxed, I get along better with people, and stress-related health problems, such as colitis, are gone. Yet if medication had been prescribed for me in

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I was reminded, reading this, of what Robert Lowell once told me about being on lithium for his manic-depressive disorder: “I feel much ‘better,’ in a way, calmer, stabler—but my poetry has lost much of its force.” While Temple, too, is well aware of the cost of being calmed down, she feels, at this point in her life, that it is well worth paying. Yet she sometimes misses the emotions, the frenzies, she once felt.

VIDEO FROM THE NEW YORKER

Why Hong Kong's Protests Exploded

The other side of a much retarded development may be a continuing ability to develop social skills and perceptions throughout life, and the last twenty years have indeed been years of a continuing development for Temple. Ten years ago, when she first started lecturing, I had been told, she often seemed not to be addressing the audience—she would have no eye contact, and might actually be facing in another direction—and she could not take questions after the lecture. Now she spends almost ninety per cent of her time on the road, lecturing around the world. She has become much more fluent in her lecturing style, has more eye contact with the audience, and may even add humorous asides and improvisations; she answers

achieving genuine friendship, appreciating other people for their otherness, for their own minds, may be the most difficult of all achievements for an autistic person. Uta Frith, in “Autism and Asperger Syndrome,” writes, “Asperger syndrome individuals . . . do not seem to possess the knack of entering and maintaining intimate two-way personal relationships, whereas routine social interactions are well within their grasp.” Her colleague Peter Hobson writes of an intelligent but autistic man who could not comprehend the meaning of “a friend.” Yet it seemed to me, as I listened to her, that Temple, now in her forties, had grasped at least something of the nature of friendship.

On this note—we had been walking and talking for almost two hours—we finished our visit to the university farm and took a break for lunch. Temple, it seemed to me, was happy to stop talking, stop thinking for a while; there had been an almost ferocious intensity in the self-examination I had forced on her (although it was not unlike the self-examination she forces on herself daily, struggling, as always, to understand and live with autism in a non-autistic world). “Normality” had been revealed more and more, as we spoke, as a sort of front, or façade, for her, albeit a brave and often brilliant front, behind which she remained, in some ways, as far “outside,” as unconnected, as ever. “I can really relate to Data,” she said as we drove away from the farm. She is a “Star Trek” fan, as I am, and her favorite character is Data, an android who, for all his emotionlessness, has a great curiosity, a wistfulness, about being human. He observes human behavior minutely, and sometimes impersonates it, but longs, above all, to *be* human. A surprising number of people with autism identify with Data, or with his predecessor, Mr. Spock.

This was the case with the B.s, the autistic family I had visited in California—the older son, like the parents, with Asperger’s syndrome, the younger with classical autism. When I first arrived at their house, the whole atmosphere was so “normal” that I wondered if I had been misinformed, or if I had not, perhaps, ended up at the wrong house, for there was nothing obviously “autistic” about them or it. It was only after I had settled down that I noticed the well-used trampoline, where the whole family, at times, likes to jump and flap their arms; the huge library of science fiction; the strange cartoons pinned to the bathroom wall; and the ludicrously explicit directions, pinned up in the kitchen, for cooking, laying the table, and washing up—suggesting that these had to be performed in a fixed, formulaic way (this, I learned later, was an autistic in-joke). Mrs. B. spoke of herself, at one point, as “bordering on normality,” but then made clear what such “bordering” meant: “We know the rules and conventions of the ‘normal,’ but there is no actual transit. You act normal, you learn the rules, and obey them, but . . .”

“You learn to ape human behavior,” her husband interpolated. “I still don’t understand what’s behind the social conventions. You observe the front—but . . .”

The B.s, then, had learned a front of normality, which was necessary, given their professional lives, their living in the suburbs and driving a car, their having a son in regular school, etc. But they had no illusions about themselves. They recognized their own autism, and they had recognized each other’s, at college,

of their autism, they had a respect for their differentness, even a pride. Indeed, in some autistic people this sense of radical and ineradicable differentness is so profound as to lead them to regard themselves, half-jokingly, almost as members of another species (“They beamed us down on the transporter together,” as the B.s liked to say), and to feel that autism, while it may be seen as a medical condition, and pathologized as a syndrome, must also be seen as a whole mode of being, a deeply different mode or identity, one that needs to be conscious (and proud) of itself.

Temple’s attitudes seem similar to this: she is very aware (if only intellectually, inferentially) of what she is missing in life, but equally (and directly) aware of her strengths—her concentration, her intensity of thought, her single-mindedness, her tenacity; her incapacity for dissembling, her honesty, her directness. She suspects—and I, too, was coming more and more to suspect—that these strengths, the positive aspects of her autism, go with the negative ones. And yet there are times when she needs to forget that she is autistic, to feel at one with others, not outside, not different.

Having spent the morning among beef cattle, and planning to visit a slaughterhouse (or “meat-packing plant,” in the industry’s euphemism) in the afternoon, we found ourselves a little averse to meat, and had a Mexican meal of rice and beans. After lunch, we drove to the airport and took a tiny commuter plane, then drove out to the plant. Temple was proud of its layout and wanted to show me how it looked. Such plants are closed to the public and maintain a high degree of security. Temple had designed the facilities a couple of years earlier, and still had her overalls and I.D. with the plant’s insignia. But I was a problem: What was to be done with me? Temple had thought of this in the morning, and had selected from her hat collection a sanitary-engineer’s bright-yellow hard hat. She handed it to me, saying, “That’ll do. You look good in it. It goes with your khaki pants and shirt. You look exactly like a sanitary engineer.” (I blushed; no one had ever told me this before.) “Now all you have to do is behave like one, think like one.” I was astounded at this, for autistic people, it is said, have no pretend-play, and here Temple had, very coolly, and without the slightest hesitation, determined on a subterfuge and was all set to smuggle me into the plant.

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Our entry, in the event, went off without trouble. Temple drove through the gate with a sublime air of confidence, waved cheerily to the security guard, and was as cheerily waved in. “Keep the hard hat on,” she said to me when we parked. “Keep it on the whole time. You’re a sanitary engineer here.”

We stopped to lean over the fence where the cattle are corralled outside the large plant building, and then followed the path that the cattle follow when they go on their last journey, up and up a curving ramp leading into the main plant building—“the stairway to Heaven,” Temple called it. Here, again, I was

heard the phrase—perhaps it seemed to her literally true. She describes in her autobiography a similar literalization of a symbol when, as an adolescent, she heard a minister quote John 10:9—“I am the door: by me if any man enter in, he shall be saved”—and the minister added, “Before each of you there is a door opening into Heaven. Open it and be saved.” Temple writes:

Like many autistic children, everything was literal to me. My mind centered on one thing. Door. A door opening to Heaven. . . . I had to find that door. . . . The closet door, the bathroom door, the front door, the stable door—all were scrutinized and rejected as *the door*. Then one day . . . I noticed that an addition to our dorm was being constructed. . . . A small platform extended out from the building and I climbed on it. And there was *the door*! It was a little wooden door that opened out onto the roof. . . . A feeling of relief flooded me. . . . A feeling of love and joy . . . I’d found it! The door to my Heaven.

Later, Temple told me that she believed in some sort of existence after death (even if it was only as “an energy impression” in the universe). Intensely conscious of animals’ emotions, their “humanity,” she had to grant them some sort of immortality, too.

We walked slowly up by the side of the gently curving, high-walled ramp, where cattle walk in single file, blithely unconscious of what is to come, up to the stunner, with its lethal bolt. Temple has been a pioneer in the design of such ramps, and her name is associated, in the trade, with the introduction of curved chutes. As we ascended the catwalk, looking over the chute’s walls, Temple told me of their special virtues, how curved chutes prevented the animals from seeing what was at the other end of the ramp until they were almost there (thus preventing any apprehension), and, at the same time, took advantage of the cow’s natural tendency to circle. The high walls prevented upsetting distractions, and served to concentrate the animals on their walk.

At the top of the ramp, inside the building, the animals found themselves moved, almost insensibly, onto a conveyor belt running under their bellies. (This “double-rail restrainer” was another innovation of Temple’s.) A few seconds later, the animal is instantly killed by a bolt shot by compressed air through the brain. A very similar system, Temple told me, might be used for hogs as well, though typically these would be killed by electrical stunning, not a bolt. She added an interesting gloss: “An electroshock machine”—such as is used in some psychiatric facilities—“and a hog stunner have almost exactly the same parameters: around one ampere, at three hundred volts.” A slight misplacement of the leads, she added, and the patient would be killed, stunned, like a hog. She was a bit shocked, she allowed, when she realized this.

I got a sense of horror as Temple showed me the stunner, but the cattle, she assured me, had no intimation, no apprehension of what was to happen to them; her whole effort, indeed, was to remove anything that could frighten or stress the animals, so that they could go peacefully, gently, unknowingly to their death. But I still felt queasy about the whole thing. How did she feel, how did others feel, working in such places?

Temple has explored this, and has written a classic paper on the subject. Some employees in slaughterhouses, she notes, rapidly develop a protective hardness and start killing animals in a purely mechanical way: “The person doing the killing approaches his job as if he was stapling boxes moving along a conveyor belt. He has no emotions about his act.” Others, she reveals, “start to enjoy killing and . . . torment the animals on purpose.” Speaking of these attitudes turned Temple’s mind to a parallel: “I find a very high correlation,” she said, “between the way animals are treated and the handicapped. . . . Georgia is a snake pit—they treat [handicapped people] worse than animals. . . . Capital-punishment states are the worst animal states and the worst for the handicapped.”

All this makes Temple passionately angry, and passionately concerned for humane reform: she wants to reform the treatment of the handicapped, especially the autistic, as she wants to reform the treatment of cattle in the meat industry.

It was an enormous relief getting out of the slaughter plant, away from the hideous smell, which seemed to permeate every inch of the place and had made me hold my stomach and my breath sometimes, in an effort not to puke; an enormous relief, once we were outside, to breathe the sharp, clear air, untainted with the smell of blood and offal; an enormous relief, morally, to get away from the idea of killing. I asked Temple about this as we drove away. “Nobody should kill animals all the time,” she said, and she told me she had written much on the importance of rotating personnel, so that they would not be constantly employed in killing, bleeding, or driving. She herself is in need of other atmospheres and occupations, and these form a vital and altogether pleasanter part of her life. Her understanding of the psychology and behavior of herd animals is sought not only by feedlots and slaughterhouses all over the world but by sheep shearers as far away as New Zealand, and by game parks and zoos. I had the feeling that she might like to spend time on the African veldt, as a consultant on elephant herds and prey animals like antelopes and wildebeests. But would she, I wondered, be able to understand apes as well as she understood cattle? Or would she find them bewildering, impenetrable, the way she found children and other human beings? (“With farm animals, I *feel* their behavior,” she said later. “With primates I intellectually understand their interactions.”)

Temple's deepest feelings are for cattle; she feels a tenderness, a compassion for them that is akin to love. She spoke of this at length as we made our way to our next destination, a feedlot—how she sought gentleness, holding cattle in the chute, how she sought to transmit calmness to the animals, to bring them peace in the last moments of their lives. This, for her, is half physical, half sacred, this cradling of an animal in the last moments of its life; and it is something she endlessly tries to teach the people who operate the chutes in the slaughter plants. She told me a story of how one plant manager, while very defensive about being advised on this by her, was fascinated by her power to calm excited animals, and how, unknown to her, he had spied on her through a hole in the ceiling as she worked. This had occurred when she was consulting at a slaughterhouse in the South, and the entire scene, and its context, kept returning to her mind: she told me the story half a dozen times in the afternoon, each time at length, and in virtually the same words.

I was struck both by the vividness of the reëxperience, the memory for her—it seemed to play itself in her mind with extraordinary detail—and by its unwavering quality. It was as if the original scene, its perception (with all its attendant feelings), was reproduced, replayed, with virtually no modification. This quality of memory seemed to me both prodigious and pathological—prodigious in its detail and pathological in its fixity, more akin to a computer record than to anything else. Such computational analogies, indeed, are frequently brought up by Temple herself: “My mind is like a CD-ROM in a computer—like a quick-access videotape. But once I get there, I have to play that whole part.” She could not just focus, for instance, on the cradling of an animal in its last moments; she had to play, in memory, the entire scene, from the animal entering the chute and progressing steadily (“no fast-forward, it takes about two minutes”) until the death of the animal and its collapse, after its throat has been cut. “I can do anything the computers in ‘Jurassic Park’ do,” she continued. “I can do all that stuff in my head. . . . I actually have that machine in my head. I run it in my mind. I play the tape—it’s a slow method of thinking.” But an ideal sort of thinking for much of her work. She designs the most elaborate facilities in her mind, visualizing every component of the system, juxtaposing them in different ways, viewing them from different angles, from near and far. Once the design is complete, she will “run a simulation” in her mind—that is, imagine the entire plant in operation. This simulation may show an unexpected problem, and when this happens she will pinpoint the problem, modify the design, do another simulation—several simulations, if need be—until the design is perfect. Only at this point, when all is clear in her mind, does she make an actual blueprint of it. No more attention is needed at this point; the rest is mechanical. “Once I get the basic thing laid out, I just put it on paper. I can listen to the TV. There’s no emotion in it. I just turn on my Sun workstation and do it.”

But this sort of simulation or concrete imagery is much less appropriate when she has to do other kinds of thinking—symbolic or conceptual or abstract thinking. To understand the proverb “A rolling stone gathers no moss,” she said, “I have to run a video of the rock rolling and getting the moss off before I can think of

wires and a blazing sun, the word ‘trespass’ . . . a ‘No Trespassing’ sign on a tree.”

In her autobiography, and, more concisely, in a thirty-page article published a little before the book—“My Experiences as an Autistic Child,” which appeared in the *Journal of Orthomolecular Psychiatry* in 1984—Temple indicates how, even as a child, she scored at the top of the recorded norms in spatial tests and visual tests but did rather badly in abstract and sequential tasks. (Such “profiles” are characteristic of autistic people: they tend to show “scatter,” or extreme unevenness, on so-called intelligence tests.) In some cases, Temple writes, the scores were misleading, because tasks that might have been very difficult for her if she had done them in the “normal” way were easy because she did them in an idiosyncratic, visual way: thus sentences and poems, and strings of numbers, instantly generated visual images, and these were what she remembered, not the words or numbers as such. Complex calculations, impossible for her in the normal way, might become possible if she transformed them into visual images.

Visual thinking in itself is not abnormal, and Temple was quick to point out that she knows several non-autistic people—engineers, designers—who seem able to “see” what they need to do, to make designs in their mind and test them in simulations, just as she does. Indeed, she often gets on very well with such people, especially her friend Tom. He is a powerful, creative visualizer, like her, and is also, like her, unorthodox, roguish, fond of pranks. “I get on the same wavelength as Tom,” Temple said, “though it’s a childish wavelength.” But, above all, she enjoys working with Tom—this, too, is “childish,” but a form of childishness which is essentially creative. “Tom and I are little children,” she said. “Concrete is grown-up mud, steel is grown-up cardboard, building is grown-up play.”

I was moved by Temple’s words, with their lovely analogizing of creativity and child’s play, and thought what a healthy development this had been in her. And moved, too, when she spoke of her relation to Tom. I wondered whether indeed she loved him, and had ever thought of a sexual relationship or marriage with him. I asked her about this—asked whether she had ever had sexual relationships, or dated, or fallen in love.

No, she said. She was celibate. Nor had she ever dated. She found such interactions completely baffling, and too complex to deal with; she was never sure what was being said, or implied, or asked, or expected. She did not know, at such times, where people were coming from, or their assumptions or presuppositions, or intentions. This was common with autistic people, she said, and one reason why, though they had sexual feelings, they rarely succeeded in dating or having sexual relationships.

But the problem was not just in actual dating or relating. “I have never fallen in love,” she told me. “I don’t know what it’s like to rapturously fall in love.”

“What do you imagine ‘falling in love’ is like?” I asked.

“Maybe it’s like swooning—if not that, I don’t know.”

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“Caring for somebody else . . . I think gentleness would have something to do with it.”

“Have you cared for somebody else?” I asked her.

She hesitated for a moment before answering. “I think lots of times there are things that are missing from my life.”

“Is this painful?”

“Yeah . . . I guess.” Then she added, “When I started holding the cattle, I thought, What’s happening to me? Wondered if *that* was what love is . . . it wasn’t intellectual anymore.”

She is wistful about love, in a sense, but cannot actually imagine how it might be to feel passion for another person. “I couldn’t understand how my roommate would swoon over our science teacher,” she recalled. “She was overwhelmed with emotion. I thought, He’s nice, I can see why she likes him. But there was no more than that.”

The capacity to “swoon,” to experience a passionate emotional response, seems diminished in other areas, too—not merely in relation to other people. For, after speaking of her roommate, Temple immediately said, “It’s similar with music—I don’t swoon.” She has absolute pitch, she added (this is normally very rare, but is relatively common in people with autism), and a precise and tenacious musical memory, but, on the whole, music fails to move her. She finds it “pretty,” but it evokes nothing deep in her, only literal associations: “Whenever I hear that ‘Fantasia’ music, I see those stupid dancing hippos.” It doesn’t seem to “call” her. She didn’t “get” music, she said—didn’t see what it was “about.” One might suppose that Temple is simply not “musical,” despite her absolute pitch and her ear. But her inability to respond deeply, emotionally, subjectively is not confined to music. There is a similar poverty of emotional or aesthetic response to most visual scenes: she can describe them with great accuracy but they do not seem to correspond to or evoke any strongly felt states of mind.

Temple’s own explanation of this is a simple mechanical one: “The emotion circuit’s not hooked up—that’s what’s wrong.” For the same reason, she does not have an unconscious, she says; she does not repress memories and thoughts, like normal people. “There are no files in my memory that are repressed,” she asserted. “You have files that are blocked. I have none so painful that they’re blocked. There are no secrets, no locked doors—nothing is hidden. I can infer that there are hidden areas in other people, so that they can’t bear to talk of certain things. The amygdala locks the files of the hippocampus. In me, the amygdala doesn’t generate enough emotion to lock the files of the hippocampus.”

imagine organic conditions in which repression might fail to develop, or be destroyed, or might be overwhelmed. This seems to have been the case with the “Mnemonist” (described by A. R. Luria), who, though not autistic, had memories of such vividness as to be inextinguishable—even though some of these were so painful that they would surely have been repressed, had this been (physiologically) possible. I myself had had a patient in whom damage to the frontal lobes of the brain “released” some of the most deeply repressed memories—memories of a murder he had committed—and forced them upon his terror-stricken consciousness.

I had another patient, an engineer, with massive frontal-lobe damage from a hemorrhage, whom I would often see reading *Scientific American*. He was still well able to understand most of the articles, but he said that they no longer evoked any sense of wonder in him—the very sense that, formerly, had been central to his passion for science.

Another man, a former judge, who is described in the neurological literature, had frontal-lobe damage from shell fragments in the brain, and, in consequence, found himself totally deprived of emotion. It might be thought that the absence of emotion, and of the biases that go with it, would have rendered him more impartial—indeed, uniquely qualified—as a judge. But he himself, with great insight, resigned from the bench, saying that he could no longer enter sympathetically into the motives of anyone concerned, and that since justice involved feeling, and not merely thinking, he felt that his injury totally disqualified him.

Such cases show us how the whole affective basis of life can be undercut by neurological damage. But there is something much more selective about the affective problems in autism; there is by no means an over-all flatness or blandness, despite Temple’s comments about the “emotion circuits,” or amygdala. An autistic person can have violent passions, intensely charged fixations and fascinations, or, like Temple, an almost overwhelming tenderness and concern in certain areas. In autism, it is not affect in general that is faulty but affect in relation to complex human experiences, social ones predominantly, but perhaps allied ones—aesthetic, poetic, symbolic, etc. No one, indeed, brings this out more clearly than Temple herself.

Both as a person struggling to understand herself and as a scientist exploring animal behavior, Temple is constantly exercised by her own autism, constantly seeks models or similes to understand it. She feels that there is something mechanical about her mind, and she often compares it to a computer, with many elements in parallel (a parallel-distributed processor, to use the technical term), seeing her own thinking as “computation” and her memory as computer files. She surmises that her mind is lacking some of the “subjectivity,” the inwardness, that others seem to have. She sees the elements of her thoughts as concrete and visual images, to be permuted or associated in different ways. She believes that the visual parts of her brain and those concerned with processing a great mass of data simultaneously are very highly developed, and that this is generally so in autistic people; and she believes that the verbal parts of her brain, and those designed for sequential processing, are comparatively underdeveloped, and that this, too, is very common in autistic people. She is conscious of the “stickiness” of attention in herself, so that there is great tenacity

defects are significant in autism, though scientific opinion is divided on this.

She feels that there are usually genetic determinants in autism; she suspects that her own father, who was remote, pedantic, and socially inept, had Asperger's—or, at least, autistic traits—and that such traits occur with significant frequency in the parents and grandparents of autistic children. Though she feels early environment (in pigs or people) plays a crucial role in psychic development, she does not hold (as Bruno Bettelheim did) that parental behavior is responsible for autism; it is more likely, she thinks, that autism itself presents barriers to contact and communication which parents may be unable to penetrate, so that the entire range of sensory and social experiences (especially holding and deep pressure) becomes severely impoverished.

Temple's own formulations and explanations generally correspond with the range of existing scientific ones, except that her emphasis on the necessity of early hugging and deep pressure is very much her own—and, of course, has been a mainspring in directing her thoughts and actions from the age of five. But she thinks that there has been too much emphasis on the negative aspects of autism, and insufficient attention, or respect, paid to the positive ones. She believes that, if some parts of the brain are faulty or defective, others are very highly developed—spectacularly so in those who have savant syndromes, but to some degree, in different ways, in all individuals with autism. She thinks that she and other autistic people, though they unquestionably have great problems in some areas, may have extraordinary, and socially valuable, powers in others—provided that they are allowed to be themselves, autistic.

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Moved by her own perception of what she possesses so abundantly and lacks so conspicuously, Temple

book, "Frames of Mind." He feels that while the visual and musical and logical intelligences, for instance, may be highly developed in autism, the "personal intelligences," as he calls them—the ability to perceive one's own and others' states of mind—lag grossly behind.

Temple is impelled by two drives: a theorizing part of herself, which makes her want to find some general explanation of autism, some key that will be applicable to all of its phenomena, and to every case; and a practical, empirical part of herself, which constantly faces the range and irreducible complexity and unpredictability of her own disorder, and the great range of phenomena in other autistic people, too. She is fascinated by the cognitive and existential aspects of autism, and their possible biological basis, even though she is intensely aware that they are only part of the syndrome. She herself faces, almost every day, extreme variations, from over-response to nonresponse, in her own sensory system, which cannot be explained, she feels, in terms of "theory of mind." She herself was already asocial at the age of six months, and stiffened in her mother's arms at this time, and such reactions, common in autism, she also finds inexplicable in terms of "theory of mind." (No one supposes that even normal children develop a theory of mind much before the age of three or four.) And yet, given these reservations, she is strongly attracted by Uta Frith and other cognitive theorists; by Hobson and others who see autism as foremost a disorder of affect, of empathy, and by Gardner and his theory of multiple intelligences. Perhaps, indeed, all these theories, despite their different emphases, hover about the same point.

Temple has dipped into the chemical and physiological and brain-imaging researches on autism, and emerged with the sense that they are still, at this point, fragmentary and inconclusive. But she holds to her notion of an impaired "emotion circuit" in the brain (sometimes she speaks of "empathy circuits," too), and she imagines these serve to link the phylogenetically ancient, emotional parts of the brain—the amygdala and the limbic system—with the most recently evolved, specifically human, parts of the prefrontal cortex. Such circuits, she accepts, may be necessary to allow a new, "higher" form of consciousness, an explicit concept of one's self, one's own mind, and of other people's—precisely what is deficient in autism.

At a recent lecture, Temple ended by saying, "If I could snap my fingers and be non-autistic, I would not—because then I wouldn't be me. Autism is part of who I am." And because she believes that autism may also be associated with something of value, she is alarmed at thoughts of "eradicating" it. She wrote in the 1990 article:

Aware adults with autism and their parents are often angry about autism. They may ask why nature or God created such horrible conditions as autism, manic depression, and schizophrenia. However, if the genes that caused these conditions were eliminated there might be a terrible price to pay. It is possible that persons with bits of these traits are more creative, or possibly even geniuses. . . . If science eliminated these genes, maybe the whole world would be taken over by accountants.

Available moment, “wasted” very little time, that virtually her entire waking life consisted of work. She seemed to have no recreations, no leisure. Even the weekend she had “scheduled” for me was by no means regarded as a social one but as forty-eight hours allocated for a special purpose, forty-eight hours set aside to allow a brief, intensive investigation of an autistic life, her own. If she sometimes saw herself as an anthropologist on Mars, she could see me as a sort of anthropologist, too, an anthropologist of autism, of *her*. She saw that I needed to observe her in all possible contexts and situations, amass a sufficient data base to make correlations, to arrive at some general conclusions. That I might see with a sympathetic or friendly eye as well as an anthropological one did not at first occur to her. So our visit was seen as work, and work to be carried through with the same conscientiousness and scrupulousness as all her work. Though in the normal course of events she invites people to her house, she would ordinarily never have shown her bedroom to a visitor; much less displayed, and illustrated the use of, the squeeze machine by her bedside—but this, she realized, was part of the work.

And though normally in the course of her own life she never went to the beautiful mountains in Rocky Mountain National Park, a two-hour drive southwest of Fort Collins, having no time or impulse for leisure or recreation, she thought that I might like to go, and that this would also allow me to observe her in a quite different context—one in which we could perhaps feel unprogrammed, free.

We piled our stuff into Temple’s car—with its four-wheel drive, it was the thing for mountain terrain, especially if we wandered off-road—and took off around nine for the national park. It was a spectacular route: we climbed to higher and higher altitudes on a hairpin road, with terrifying bends, and saw towering cliffs with banded rock strata, foaming gorges far below, and a marvellous range of evergreens, mosses, and ferns. I had the binoculars out constantly, and exclaimed at the wonders at every turn.

As we drove on into the park, the landscape opened out into an immense mountain plateau, with limitless views in every direction. We pulled off the road, and gazed toward the Rockies—snowcapped, outlined against the horizon, luminously clear even though they were nearly a hundred miles away. I asked Temple if she did not feel a sense of their sublimity. “They’re pretty, yes. ‘Sublime,’ I don’t know.” When I pressed her, she said that she was puzzled by such words, and had spent much time with a dictionary, trying to understand them. She had looked up “sublime,” “mysterious,” “awe,” and “numinous,” but they all seemed to be defined in terms of one another.

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“The mountains are pretty,” she repeated, “but they don’t give me a special feeling, the feeling you seem to enjoy.” After living for three and a half years in Fort Collins, she said, this was only the second time she had been to them.

great pleasure you get out of it. I'm denied that"), and, indeed, throughout the weekend. There had been a spectacular sunset the evening before (the sunsets have been particularly fine since Mount Pinatubo erupted), and this, too, she found "pretty" but nothing more. "You get such joy out of the sunset," she said. "I wish I did, too. I know it's beautiful, but I don't 'get' it." Her father, she added, often expressed similar sentiments.

I thought about what Temple had said on Friday night, as we walked under the stars. "When I look up at the stars at night, I know I should get a 'numinous' feeling, but I don't. I would like to get it. I can understand it intellectually. I think about the Big Bang, and the origin of the universe, and why we are here: Is it finite, or does it go on forever?"

"But do you get a *feeling* of its grandeur?" I asked.

"I *intellectually understand* its grandeur," she replied, and continued, "Who are we? Is death the end? There must be reordering forces in the universe. Is it just a black hole?"

These were grand words, grand thoughts, and I found myself looking at Temple with a heightened sense of her mental spaciousness, her courage. Or were they, for her, just words, just concepts? Were they purely mental, purely cognitive or intellectual, or did they correspond to any real experience, any passion or feeling?

Now we drove on, higher and higher, the air becoming thinner, the trees smaller, as we moved toward the summit. There was a lake near the park, Grand Lake, which I especially wanted to swim in (I am always excited by the prospect of swimming in exotic, remote lakes: I dream of Lake Baikal and Lake Titicaca), but, sadly, since I had a plane to catch, we did not have time.

On the way back down the mountain, we stopped the car for a brief plant- and bird-spotting geological walk—Temple knew all the plants, all the birds, the geological formations, even though, she said, she had "no special feeling" for them—and then we started the long descent. At one point, just outside the park, seeing a huge, inviting flat sheet of water, I asked Temple to pull over, and impetuously scrambled down toward it: I *would* have my swim, even though we had not made it to the lake.

It was only when Temple yelled "Stop!" and pointed that I paused in my headlong descent and looked up, and saw that my flat sheet of water, my "lake," so still just in front of me, was accelerating at a terrifying rate a few yards to the left, prior to rushing over a hydroelectric dam a quarter of a mile away. There would have been a fair chance of my being swept along, out of control, right over the dam. There was a look of relief on Temple's face when I stopped and climbed back. Later, she phoned a friend, Rosalie, and said she had saved my life.

Stephen Wiltshire, the autistic artist. We wondered about autistic novelists, poets, scientists, philosophers. Hermelin, who has studied (low-functioning) autistic savants for many years, feels that though they may have enormous talents, they are so lacking in subjectivity and inwardness that major artistic creativity is beyond them. Christopher Gillberg, one of the finest clinical observers of autism, feels that autistic people of Asperger type, in contrast, may be capable of major creativity, and wonders whether indeed Bartók and Wittgenstein may have been autistic.

Temple had spoken earlier of being mischievous, or naughty, saying she enjoyed this at times, and she had been pleased at having smuggled me successfully into the slaughterhouse. She likes to commit small infractions on occasion—"I sometimes walk two feet outside the line at the airport, a little act of defiance"—but all this is in a totally different category from "real badness." That could have terrifying, instantly lethal consequences. "I have a feeling that if I do anything really bad, God will punish me, the steering linkage will go out on the way to the airport," she said as we were driving back. I was startled by the association of divine retribution with a broken steering linkage; I had never thought about how an autistic person, with a wholly causal or scientific view of the universe and a deficient sense of agency or intention, might formulate such matters as divine judgment or will.

Temple is an intensely moral creature. She has a passionate sense of right and wrong, for example, in regard to the treatment of animals; and law, for her, is clearly not just the law of the land but, in some far deeper sense, a divine or cosmic law, whose violation can have disastrous effects—seeming breakdowns in the course of nature itself. "You've read about action at a distance, or quantum theory," she said. "I've always had the feeling that when I go to a meat plant I must be very careful, because God's watching. Quantum theory will get me."

Temple started to become excited. "I want to get this out before you get to the airport," she said, with a sort of urgency.

She had been brought up an Episcopalian, she told me, but had rather early "given up orthodox belief"—belief in any personal deity or intention—in favor of a more "scientific" notion of God. "I believe there is some ultimate ordering force for good in the universe—not a personal thing, not Buddha or Jesus, maybe something like order out of disorder. I like to hope that even if there's no personal afterlife, some energy impression is left in the universe. . . . Most people can pass on genes—I can pass on thoughts or what I write.

"This is what I get very upset at. . . ." Temple, who was driving, suddenly faltered and wept. "I've read that libraries are where immortality lies. . . . I don't want my thoughts to die with me. . . . I want to have done something. . . . I'm not interested in power, or piles of money. I want to leave something behind. I want to make a positive contribution—know that my life has meaning. Right now, I'm talking about things at the very core of my existence."



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Oliver Sacks, who died in 2015, was the author of many books, including “Musicophilia,” “Gratitude,” and “The River of Consciousness.” A final collection of his essays, “Everything in Its Place,” will be published in April.

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