

Autistic Symphony



Alan Griswold

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For Brian

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Preface

Autism, as a defined medical condition, has been known for only a little more than sixty years now, and even for much of that time has been rarely diagnosed and seldom discussed. Recently, however, the situation has changed dramatically. Autism is now being recognized far more frequently within the general population and is being diagnosed in our children at greater rates than once thought possible, and at much younger ages.

As a consequence, there are many books being written today that deal with the subject of autism. For the most part, each can be categorized as belonging to one of three distinct types. First, there are the medical and psychiatric texts, professionally written works that outline the scientific parameters of the condition, clarify guidelines for official diagnoses, discuss alternative theories on neurological, genetic or environmental causes, and so forth. Next there are the support books: these are generally filled with strategies on how best to cope with the challenges autism can bring, and are targeted most often to parents who are raising autistic children, although occasionally they are targeted to autistics themselves. Finally, there are the cure and treatment books: here a level of hope is being offered in the form of special diets, new drugs, behavioral therapies and other interventive techniques—all put forth as solutions, or at least as substantial alleviations, to what is assumed to be an otherwise tragic disorder.

This book too deals with the subject of autism, but does not fit neatly into one of the three categories just mentioned. In fact, this book does not seem to fit into any category at all.

I came to the subject of autism late in my life, at the age of forty-five. I mention this because I am fairly certain had I come to learn about autism much earlier, I would have been more likely to see the condition as nearly everyone else seems to see it. I would have found the medical and psychiatric texts to be fascinating reading, and I would have found myself nodding in agreement with many of their studied words. I might have pored through all the support books I could get my hands on, and I would have been grateful for any helpful advice. And perhaps in some of the more disquieting moments, I might even have found need to turn to the offers of treatments and cures. As it was, I came to autism late in my life, at the age of forty-five.

By that time, I had spent far too many nights engaged in a somewhat compulsive activity of mine, wandering and pacing the floorboards into the very late hours of the evening, long after everyone else had gone safely to bed. From lighted room to lighted room, from adolescence through adulthood, I have been trying to track the course of a discussion that has been running for far longer than I have. It is a discussion that takes a variety of turns, all of which I find I love—mathematics, religion, evolution, philosophy, physics, literature, psychology, history, to name just a few. I recognize in these names the different guises for those two subjects that fascinate me the most—humanity and its found universe. By the time I came to autism, I had been preparing a very large space in which to hold it.

What follows in these pages of *Autistic Symphony* are five works—five movements, if you will—that carry my attempt to enable others to see autism as I myself now see it, a neurological condition, sure, but also immensely much more. Autism is by far the most significant key I have found to date for understanding humanity and its purpose within this world. Autism is not a bright, shiny key, of course. Autism is more like the rusted, scratched and twisted thing one finds discarded in the dust, but as we all must surely remember from our childhood tales, it is precisely that type of key—the one most likely to be overlooked—that in the end succeeds in opening an essential door. I harbor no illusions that my efforts are likely to produce immediate impact. The current perceptions and definitions regarding autism are widespread and well established, and furthermore they are supported by the most respected elements in our society—the scholars, medical researchers, government institutions, and so on. What I am attempting to do in these pages is much like the driving of a small chisel into the bricks of a massive wall, followed by a stepping back to see how far the cracks might spread.

Or perhaps a better analogy would be the sounding of the trumpets at Jericho. When I think of autism—understand it as I believe it is meant to be truly understood—I am reminded above all else of music. Loud, impudent and crashing chords when the purpose of that music is to bring down the binding and blinding walls. But also, sometime after the dust has settled, a strangely sweet and hypnotic melody rising above a universal harmony—a full orchestral work imminently accessible to those willing and able to listen.

Autism has been within the human population for a very long time, a statement that might surprise us at first, given that autism's recognition has come so recently. But with much evidence pointing to a genetic underpinning and with autism significantly present in nearly every nation, race and culture around the planet, it is clear the condition did not spring forth in the last century like Athena from Zeus' head, but instead can trace a history far back into our ancient past. It is therefore appropriate, indeed important, to consider autism from an anthropological perspective, and our discussion here will be far ranging, beginning with modern society and its day-to-day relationships, then sending us back to the roots of our anthropological past, and finally forward again into the prospects of the near future. I will explore the possibility that autism has much to tell us about our species and about the development of its modern civilizations, and I will summarize the ideas discussed along the way into the shape of three hypotheses:

1. Autism is not a psychiatric disorder, but instead is more effectively described as an alternative and minority set of genetic cognitive traits found within the human population.
2. The presence of autism explains in large measure the sudden acceleration in mankind's cultural development—a leap so dramatic by biological standards, the transformation is best described as anti-evolutionary.
3. The increase in the prevalence of autism will continue into the foreseeable future, a natural result of autism's impact upon the human population and upon the human environment.

In the early twenty-first century, autism remains a charged word. In the mind of much of the public, autism continues to be associated with the image of children locked within their own world—unfeeling, unresponsive, self-injuring, mute, mentally retarded, destined to a life of institutionalization. This image reached its peak in the 1960s and 1970s, when researchers and medical practitioners were focusing almost exclusively on the more severe and disabling forms of the condition (what is now commonly referred to as classic autism). The afterimage lingers with us today. Nonetheless, the medical literature contains many case histories painting a more affirming picture, including the two original descriptions of autism, the World War II era papers by psychiatrist Leo Kanner and pediatrician Hans Asperger. A careful reading of each account reveals few instances matching the common perception of a dire disability. In addition to noting the social deficits, language peculiarities and perseverative activities that have come to be recognized as the hallmark features of the autistic individual,

both Kanner and Asperger noted compensatory strengths and unique advantages as well—such as excellent rote memory skills and in several instances the ability to focus so intensely on a favorite activity as to be able to gain useful and creative expertise. Follow-up studies of mildly autistic children have generally shown a significant number grow up to be functioning adults, in many cases barely distinguishable within human society other than perhaps by a certain tendency to quirkiness or a reduced sociability.

Beginning in the 1980s, with the groundbreaking work of researchers such as Lorna Wing and Christopher Gillberg, and with the translation of Asperger's original work into English, focus has intensified in Europe and North America on the higher functioning forms of autism. Uncertainties in diagnostic criteria have made it difficult to gather definitive statistics, yet much evidence indicates individuals with functioning forms of autism greatly outnumber those with the more classic version of the condition, with current estimates running as high as five to one, or even greater. We now know that many autistic individuals go undiagnosed for most or all of their lives, a fact made more dramatic in recent years by the large number of parents being diagnosed with an autistic spectrum condition only after their children have been. It is dawning on the medical community, and on society in general, that there are a significant number of autistic individuals functioning within the human population, and it is the collective impact of such individuals that is being considered here.

Two Subpopulations

For the purposes of this essay, I will describe the human population as being composed of two distinct subpopulations: first, the population whose members possess in significant degree the traits of autism, and second, the population whose members do not possess such traits, a population which can be referred to as *non-autistic* or *neurotypical*. It is not yet scientifically clear that the distinction between the two subpopulations is perfectly sharp. Further genetic and diagnostic research might one day reveal a significant number of individuals who could best be described as possessing traits drawn from both of the subpopulations. Nonetheless, current diagnostic practice works towards the placement of individuals into one category or the other, based upon observable criteria, and that practice will continue to be followed here.

Both populations stand in need of a description of their respective characteristics, a description that would help distinguish each from the other. The customary place to begin this process is with a listing of the diagnostic criteria that

determine autistics, with the assumption being that anyone not meeting these criteria is a member of the neurotypical population. *The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) lists diagnostic criteria for three conditions considered to be the prominent disorders along the autistic spectrum: *Autistic Disorder*, *Asperger's Disorder*, and *Pervasive Developmental Disorder, Not Otherwise Specified* (including Atypical Autism). However, for anyone reading the DSM-IV pages, two shortcomings will quickly emerge. First, the criteria are fairly clinical and dry, more suitable to the needs of the medical community than to members of the general public or even the scientific community at large. Also, due to a perceived need for official diagnoses to be conservative and non-controversial, the DSM-IV can at times be less than comprehensive and also lag with respect to recent discoveries and practices. Accordingly, the psychiatric literature can serve as an unofficial supplement to the DSM-IV criteria, providing descriptions more in tune with the needs of everyday use and at times more comprehensive and up-to-date. Although there are variations and occasional disagreements in the diagnostic descriptions given of the autistic spectrum conditions, a common set of features does consistently appear, sometimes referred to as the *triad of impairments*. These are three broad areas of observable behavior in which autistic individuals almost invariably evince a marked difference from their neurotypical peers:

1. *Impaired social skills.* For young autistic children, this can take many forms, such as lack of eye contact, failure to imitate, few attempts to point or to gain attention of others, and failure to engage in greetings, reciprocal activities and interactive play. Such children often seem blissfully unaware of their age-appropriate peers, and some remain non-responsive even to their parents' attempts to engage them. The level of social impairment can vary widely from individual to individual but is usually apparent to some degree in nearly every instance and often remains persistent throughout the autistic's lifetime. Functioning autistics manage to cope by learning basic social skills as they grow older, sifting from experience what is expected from them in a variety of situations, and eventually engaging—if at times awkwardly and strainedly—in a broader array of human interaction, including the possibilities of career, marriage and family.
2. *Language delays and peculiarities.* In the most severe cases of autism, muteness is a possibility. Many autistic children experience significant delays in acquiring language, it not being unusual for first words to be

spoken sometime in the range of three to six years of age. Upon language acquisition, whether timely or delayed, speech peculiarities are common: echolalia, pronoun reversal, poor prosody, literalness, and a tendency towards a pedantic and repetitive approach to conversation (speaking at the listener, instead of engaging in give and take). As with social skills, the level of language impairment can vary widely in individual cases, with the ability to acquire reasonable use of language seen as a positive indicator for the autistic to reach functioning status. Indeed, of the three parts to the triad, this is the one with the greatest likelihood of fading entirely as the autistic reaches adulthood.

3. *Repetitive activities.* Young children with autism are frequently observed to spin objects or to spin themselves, run back and forth in repeated patterns, flap hands and arms, hum incessantly, rock, return again and again to familiar textures, and engage in various other forms of stereotyped and persistent activity. Ritual and routine seem essential to these children—a rearrangement of the furniture, an alternative route to the grocery store, or an attempt to change the rules of a favorite game can be the stimulus for tremendous outbursts and emotional meltdowns. During school age, the need for familiarity and repetition more often takes the form of an obsessive subject of study—anything from sports statistics to dinosaurs to astrology will do, but often at the expense of time and attention devoted to expected and required activities. This tendency to persevere in both simple and complex form usually remains with the autistic into adulthood; fortunately, it can also be the source of compensation. Many functioning autistics successfully pursue favored activities into the form of careers (computers, engineering and the sciences being common draws), although the near-obsessive pull of favorite interests does remain an ever-present danger to the autistic individual in need of life balance.

These diagnostic descriptions of autistic impairments have proven useful in clinical settings, and no doubt will continue to be refined as research accumulates. There is a sense, however, in which this intense focus on impairments—especially when defined as deviations from a norm—can create a potentially misleading side effect, namely that any description of autism as being exclusively a disorder or a disability becomes tantamount to a tautology under these criteria. Since the intention in this essay is to examine the autistic population in the broadest possible context, it would appear useful to pause for a

moment and ask if we are seeing only the disadvantages and not giving due consideration to the potential compensations or other features of the condition. Indeed, the adult autistic community has been increasingly vocal on this very topic in recent years, noting that many, if not most functioning autistics are content with their particular mode of life, believe there are advantages to it, and are perplexed by the general population's drive to find a cure.

In any case, a description of autism focused exclusively on a diagnostic list of clinical impairments is not going to be adequate for addressing autism's anthropological impact, if for no other reason than the diagnoses themselves are such a modern-day phenomenon. Plus we should not forget about the neurotypical population. So far, this population has been defined only as a diagnostic negation—that is, its members are defined by saying they are not autistic. But if we were to attempt to describe the neurotypical population in a more affirmed way, as a set of observable characteristics that stand in contrast to those of the autistic population, what would we say? It appears worthwhile, therefore, to take time to characterize each population from a fresh perspective, one that remains consistent with the discoveries clinical psychiatry has made so far regarding autism, but one that expands the range of the discussion and attempts to incorporate as well the historical and biological points of view.

Let me begin with the non-autistic population. It might seem an unusual and nearly impossible task to differentiate meaningfully a segment of the human population comprising, by current estimates, nearly 99 percent of the whole—other than perhaps by resorting to the conclusion neurotypicals constitute the norm. But placing this population side-by-side with the autistic population and carefully observing the features that make neurotypicals distinct, one term does begin to emerge as a means for shedding some light on the contrast. That term is *Homo sapiens*. Or another way of looking at this is to ask, are there any perseverative activities neurotypicals engage in that serve as a counterpart to the stereotyped activities of autistics, and in a manner of speaking we can say there are: non-autistics do indeed focus intensely on a characteristic set of activities, they concentrate on all things human. Physical strength, attractiveness, food acquisition, friendship, sex, parenting, family relationships, chatting, making a living, the organization chart, the pecking order, politics, power. It would appear that the entire panoply of what it means to be in the species *Homo sapiens*—from the remnants of an existence first lived near the African savannahs to all the modern-day equivalents—is nearly constantly observed, learned and practiced by the members of the non-autistic population. It is their familiar turf, and its constellating impact is striking right from the start. Most children are born with an innate recognition

for human faces, the human voice, and perhaps human smell and touch as well, and for a newborn receiving his first experiences of the broad and chaotic field of sensory inputs, this pre-existing familiarity with humankind must give the child an immediate grounding for making sense of his surrounding world. This strength at perceiving human foreground within the sensory background leads quickly to an ability to imitate other people, follow their gestures, try to understand what they are saying, react emotionally to their approvals and disapprovals, and before long to follow their lead out into a much larger world.

Although non-autistics will as they grow older expand their thoughts and behaviors to include ideas and activities not so directly human inspired, one can observe in most instances that this is still done with an eye towards retaining or even building upon the sense of people-connectedness and social order. Watching a member of the non-autistic population proceed through her day—say, a warm breakfast made for her children, an extra trip back to the closet to find just the right jacket, meetings and presentations all morning, lunch with a best friend, peer reviews in the afternoon and putting out that fire started by the boss, plus a little time for gossip on the e-mail, sharing the events of the day around the dinner table, a brief discussion with husband before bed about family visits at Christmas, the late news on television and the good-night kiss—in observing all this one might remain hesitant to use the word *perseveration* to describe such a broad-ranging and commonplace set of activities, yet it must be admitted the degree of human and social element in all these activities is unmistakable, and if there lingers any doubt as to the immense importance of the social element for most people, one need only consider the likely consequences of a lengthy period of enforced isolation. For members of the neurotypical population, the comforting familiarity of a human-specific focus remains primary, lifelong and deeply ingrained.

Of course, there is nothing surprising in any of this. That non-autistics are cognitively and biologically grounded through virtue of an innate recognition and connection to their own species is simply the evidence of a biological trait that formed early on in Earth's evolutionary cycle and has been consistently passed on from species to species, especially those for whom, like man, there exists a strong social component to their nature. We observe evidence of the same kind of behavior and cognition in many other animal species. Consider, for example, the internal workings of ant colonies, lion prides, flocks of birds migrating for warmer waters. Although we do not understand in detail the cognitive processes taking place inside such species, it does seem abundantly clear that whatever those processes are, they are concentrated almost exclusively on the

inner workings of the species itself. Cognitive wanderings beyond the immediate needs for survival and procreation are unlikely to be tolerated by nature, given evolution's favoritism towards efficiency, and it would appear to be even so with man's primate cousins and also with man's immediate biological ancestors, so there is nothing astonishing about finding the same characteristic within man himself. Of course, what makes man unique among the species is that he has in large measure loosened this bond of a species-specific focus, and has incorporated to himself knowledge of his world that goes far beyond what is required for continuation of the line alone. On this subject I will have more to say later, but for now we can content ourselves with the observation that the characteristic of an innate intra-species recognition remains evident and strong within man, and it stands out most boldly when observing the distinguishing features of the non-autistic population.

What compels this emphasis on the species-focused characteristics of neurotypical individuals is that it is in precisely this area that the autistic population appears to differ. Although biologically there is no question autistics belong to the species *Homo sapiens*, it would seem that cognitively an ambiguity is at work. Descriptions of infants and toddlers who have come later to be recognized as autistic are noteworthy for the absence of signs of innate human connection. Mothers describe feeling that something was not quite right from the very beginning, perhaps in the way the child did not respond expectantly to smiles and coos, or did not nestle easily into a hold or hug. Later, the stories are more frequently told of children recoiling at being touched, or quickly forgetting—if recognizing at all—the faces of parents, or remaining oblivious to the sound of human voices even when they originate from only a few feet away (many autistic children are feared at first to be deaf, until a hearing test proves otherwise). The mechanisms whereby the neurotypical child picks up almost immediately on the human features within the surrounding environment do not seem to be fully at work within the autistic child, and of course it is the desire to uncover the cause of these missing mechanisms that drives much of the current research.

In this discussion, what will most interest us is the long-term, large-scale impact of not having a good built-in sense of species recognition, an impact that can be paradoxically both heartbreaking and intriguing. The most readily apparent impact is that autistic children find themselves at an immediate developmental disadvantage compared to their neurotypical peers. Anyone observing non-autistic children interacting with their environment will be struck immediately by the degree to which imitation, gesture and the desire to please others will guide these children and give them access to a large array of new experiences and learn-

able techniques, and when neurotypical children use this framework as a launching pad into the leveraging world of language, development rapidly takes off. By contrast, autistic children are left mostly at the starting line, struggling to gain traction in what must seem to them to be a nearly random sensory world, because biology's time-honored technique for giving the newborn organism a sensory grounding—species recognition and familiarity—is not strongly in place here. Many autistic individuals report having experienced severe sensory input issues when younger, issues ranging from hypersensitivity (overwhelmed by stimuli) to hyposensitivity (unresponsive to stimuli) to synesthesia (confusion of sensory experience—for instance, hearing a color), this despite no evidence of a structural cause. It would seem likely that a good portion of these sensory issues are related to the difficulty of trying to pick out foreground within the chaotic rush of sensory experience, because without a sense of the relative importance of the human voice, for instance, a child hearing his name being called out is apt to experience the sensation as either a blast of noise painfully crashing through or just another hum lost in the background of all auditory phenomena, a background we ourselves easily filter out.

Even if the sensory issues are not overwhelming, such a child lacks the framework to determine significance in his sensory world, a means for separating the important from the unimportant, the signal from the noise. Consequences for learning and development are profound, because the learning process is most effective when new information can be connected with knowledge and experiences already assimilated—that is, learning presupposes an existing framework upon which to attach the new information. Neurotypical children are born with such a framework by virtue of their natural recognition of their human surroundings, but the struggles of autistic children in their early years can be seen as an attempt to acquire this most fundamental of frameworks, and the cases that remain the most troubling to us are the ones in which we observe the child making limited progress in this effort.

As heartbreaking as the difficult cases can be, the intriguing aspect of the autistic population emerges when considering the progress of those who do make substantial steps forward, including those who will go on to mature as functioning adults. We ask about these autistic individuals, what makes the difference? By what means do these children begin to formulate that first fundamental framework that allows for assimilation and meaningful exploration of their experienced world?

It might be tempting to assume such autistics also come to use the species-recognition framework as the primary means for guiding them, either because the

innate recognition processes are not so severely impaired in such children or because such processes can be developed and strengthened as the child grows older (most interventive therapies are motivated at heart by just this possibility). We should have some serious doubts, however, about the accuracy of this assumption. As for the notion that the innate recognition processes might not be all that impaired, I would note we are talking primarily about children for whom the autistic symptoms are quite apparent—a diagnosis of an autistic spectrum condition almost by necessity implies a significant amount of social impairment, enough to make the difference from neurotypical peers stand out. And as for the possibility the species-recognition framework can be learned over time, emphasis would need to be placed on the words *learned* and *time*. As adolescents, functioning autistics continue to display many difficulties with fundamental aspects of human interaction: facial recognition, understanding body language and social cues. Even by the time they become adults, although well assimilated by then into the structure and day-to-day happenings of human society, many autistics continue to report an experience from within described as anywhere from a lingering uneasiness with human relationships to a feeling of being like an alien on a foreign planet. At best, it would seem that any species-recognition framework formulated within the autistic individual would have to be described as a secondary and acquired mechanism, not the *primary* means by which the individual has pulled himself forward. And thus we are brought back to the original question, what is it that *fundamentally* helps an autistic child pull together the chaotic sensory strands of his early world and begin to make meaningful sense of it all?

A clue can be found in the repetitive activities of autistics, especially when considered in light of the sensory input issues. To summarize what has been said so far, the experience for a new organism that comes into this world without a storehouse of memories built up yet and without an innate recognition for various features to be found in the environment—such as those associated with its own species—for such an organism the sensory stimuli are going to be processed as unstructured and chaotic. Few environmental elements would appear distinct from the rest, except perhaps by variation in intensity; the overall impression would be a sensory jumble. For a cognitive process to make sense of this chaos, it would need to focus primarily on those few features in the environment that inherently stand out from the rest. As is suggested by early results in the fields of information processing and robotics, which have been involved in recent years in trying to improve dynamic systems designed to recognize sights and sounds within a given context, we can quickly get an idea of the most important concepts

in this elementary process of separating sensory foreground from the background—symmetry, repetition and memory.

Symmetry can be thought of as inherent structure in the chaos of space, and repetition can be defined as inherent structure in the chaos of time. An autistic child, hungry for signal to relieve the overwhelming rush of sensory noise, will hone in on the elements of symmetry and repetition to be found in the world around him. We can take any spinning object, a ceiling fan for instance, as a good example of just such an item. A ceiling fan embodies both concepts: it sketches a circular shape (symmetry) and it cycles again and again (repetition). In a mostly undifferentiated sensory environment a spinning object such as a ceiling fan would stand out, and indeed in the real world, many autistic children are fascinated with tops, wheels and ceiling fans. In fact, the majority of the autistic child's early perseverative activities can be taken as variations on these themes of symmetry, repetition and elementary pattern—lining up toys, twirling, turning on and off light switches, flicking fingers and flapping arms, rubbing the same texture over and over, repetitive humming, enjoying a favorite video or song again and again (music is structured sound, and thus has inherent appeal to the autistic child). The frequently reported dexterity that young autistics display with numbers, letters and shapes becomes less surprising when their geometrical and symmetrical features are given consideration, along with the likelihood such items will make frequent appearances in the child's life. The rote memory skills of autistic children also betray the unique manner in which they assimilate their environment, for rote memory is not so much a term emphasizing a *strong* memory, as it is a term emphasizing a particular *kind* of memory, one more likely to be engaged by patterns, facts, figures and sequences. (Neurotypical children also have good memory skills, in fact probably more prodigious in the early years than those of autistic children, but neurotypical memory is apt to be weighted with personal material—names, faces, behavioral expectations, social rules—and thus is less likely to be regarded as unusual in any respect.)

The human element is not missing *entirely* from the young autistic's world. Parents and primary caregivers do make repeated appearances in the child's life, do engage in many predictable behaviors, and thereby present themselves as familiar signposts and objects worthy of study, and autistic children are often observed to be quite affectionate for parents and favorite teachers. But when we recognize how human beings are by their very nature quite complex—that is, not visually simple and not always predictable—we are not surprised to discover that the autistic child usually needs a great deal of developmental time, and the occasional guiding hand, to navigate a world of parents, siblings, friends, rivals and

crowds. It is a social navigation that autistics might never find to be all that easy, and certainly not one hinting at the word *instinctive*. We are brought finally to the conclusion that members of the autistic population do not primarily organize their cognitive world around a species-familiar framework—as members of the neurotypical population generally do—but instead organize it primarily around the various elements to be found in the spatial and temporal world, especially those elements containing some form of pattern or structure. It is upon such a framework that the autistic individual first begins to build his cognitive world.

This fundamental cognitive distinction between the two subpopulations is most apparent at the youngest ages. As the members of each population grow older, the observable differences do begin to blur. A simple experiment might bring the point home. If you were to give three buttons to a neurotypical child at the age of about four or five, he would have a high likelihood of doing something social with them, such as share the buttons with friends or trade them to gain something else of value or play pretend tailor. If you were to give three buttons to an autistic child the same age, he would almost never engage in such behavior, but would more likely line up the buttons or spin them. However, the same experiment repeated with children around twelve years of age would give a more mixed set of results. By this age, neurotypical children are more apt to employ the buttons geometrically or abstractly, say by using them as game pieces or incorporating them into an art project, and older autistic children become a little more likely to employ the buttons in a social manner, perhaps by giving them away as gifts. What has happened in the intervening years is that each population, through education and exposure, has begun to learn something about the worldview that comes more naturally to the other. Neurotypical children, by virtue of their developmental head start, get very early exposures into the world of objects, patterns and ideas, and this process hits overdrive when the children reach school age, the subjects of math, spelling, history and science now a familiar part of their daily routine (but often with an ear still open for the recess bell). Autistic children, who often can do relatively well with structured school subjects, find their continuing introduction into the world of human relationships becomes most acute *outside* the classroom setting—on the playground, in the lunch room, during gym class, after school. It is in such settings that the autistic child must assimilate piece-by-piece the intricacies of the social world.

This cross-population training, as it were, occurs with varying degrees of success: some neurotypical individuals never gain much interest in or command of the impersonal and objective aspects of their surroundings, and some autistic individuals continue to struggle mightily integrating to human society. But there

are a great many members of each population who do gain secondary expertise in the natural domain of the other, and by the time such individuals reach adulthood it would take a sensitive nature or an expert eye to tell them apart, and it is mostly in this manner that the two subpopulations go forward, successfully, as one.

Three Hypotheses

A discussion of autism's anthropological impact can now be taken under the heading of three hypotheses, the first of which arises from the preceding discussion:

***First Hypothesis:* A good definition for *empathy* is the cognitive recognition of a nearly exact cognitive process to be found in one's environment. By this definition, autism is not an empathy disorder, and by extension is not a psychiatric disorder of any kind. Instead, autism is more accurately described as an alternative set of genetic cognitive traits that has found a home within the human population.**

The prevailing theories regarding the underlying nature of autism have focused frequently on the concept of empathy—in particular, it is felt that autistics are impaired in their ability to experience and display empathy, thereby inhibiting their ability to interact with and understand other people. These empathy-deficit theories come in a variety of flavors, but the one that has carried the most influence in the medical community over the past two decades goes by the phrase *theory of mind deficit*, or sometimes by the term *mindblindness*. In its simplest form, it states that autistics are impaired in their ability to read the thoughts and feelings of other humans, and in a slightly more complex variation, autistics are described as being unable to attribute independent mental states to other people or even to themselves. This theory was first put forth in a landmark 1985 paper by researchers Simon Baron-Cohen, Alan M. Leslie and Uta Frith, with the paper basing its conclusions largely on what has come to be known as the Sally-Anne experiment. In the Sally-Anne experiment, children are presented with a play scenario in which a doll named Sally places a marble in her basket, leaves the room, and her companion doll Anne is made to switch the marble from Sally's basket to her own box. Upon Sally's return to the scenario, the observing children are asked where Sally is going to look for her marble. The children who say Sally will look in her own basket are considered to have developed a theory of mind—the ability to attribute thoughts and beliefs to another person, even when

that person's thoughts and beliefs differ from the actual situation. Almost all neurotypical children by the age of five display this ability, whereas most autistic children, including those who are much older and who possess a reasonable level of verbal intelligence—and in the severest cases of autism, persisting into adulthood—will frequently fail to detect that Sally will look in her own basket and not in Anne's box.

The results of the Sally-Anne experiment and of similar tests measuring the ability to attribute beliefs, deception and feelings to others, along with the clinically observed social deficits seen in autistic children, led the paper's authors to conclude that the inability to perceive and understand the thoughts and beliefs of other humans—in short, the inability to empathize—is one of the fundamental deficits, if not the fundamental deficit, underlying autism. Many in the medical community have found these experimental results and conclusions to be compelling, and theory of mind deficit remains one of the most frequently cited descriptions of the autism pathology. It is largely in this manner that autism has come to be widely regarded as an empathy disorder.

Empathy, however, is not an unambiguous term within the psychiatric community, it being a concept for which everyone has a level of intuitive understanding, but for which no one has been able to provide a definition that is universally accepted. One of the approaches to describing empathy has been to focus on cognitive recognition—that is, being able to perceive accurately the thoughts and feelings of another. Common alternative approaches have tended to highlight the ability to place oneself inside the circumstances of another and to experience thoughts and feelings oneself that are an appropriate reaction to the other's situation.

In the statement of the first hypothesis, I employ a definition that is more like the first manner of describing empathy, emphasizing the aspects of cognitive recognition, in large part because this definition matches more closely to the characteristics typically measured in theory of mind deficit studies. Furthermore, it can be argued the cognitive recognition aspect of empathy holds some priority over the alternative definitions, because without accepting cognitive recognition as a minimum basis for empathy, it remains unclear how the alternative definitions can be applied in the broadest biological context. To see this, we might consider the case of attempting to experience empathy for an animal—for instance, while watching a nature show on television about a band of gorillas in which a child has just died. An observer might claim to see an aspect of grief in the mother's behavior in the aftermath of the death and might be said to be feeling empathetically sad for her, but this claim would need to be taken guardedly because humans are

not really certain as to the thoughts and emotions a gorilla parent might be experiencing in such a situation—humans do not have omniscient insight into the cognitions of the other animal species. An alternative explanation for the observer's behavior, one that seems more likely under the circumstances, is that she is projecting her own emotions and thought patterns onto the gorilla mother and is empathizing with these projected cognitions, not with the gorilla's actual state of mind or perceived circumstances.

In addition, the example of attempting to empathize with an animal highlights another difficulty with the concept of empathy, namely that it is easy to fall into the anthropocentric approach of taking only *human* thoughts and emotions as the absolute standard by which to measure empathy. It is quite reasonable to assume that the other gorillas in the group would understand and recognize features of what the dead child's mother is experiencing; indeed, for gorillas to stay together as a group, it would seem essential they recognize something about the cognitive aspects of one another. A broad biological application of empathy, therefore, would define the term as a relative concept, applicable to all forms of cognitive recognition to be found in nature and not just to human cognition. It is not within this essay's scope to attempt to resolve all the uncertainties and ambiguities surrounding the concept of empathy, but I will proceed under this one particular approach to defining the term—one that emphasizes cognitive recognition as the primary measure for empathy, and one that applies that measure broadly and not just to human cognition alone. It is by this strict and particular form of empathy we can examine the claim that autism is not an empathy disorder.

A demonstration of the empathy definition in action can be given by turning once again to observations of the non-autistic population. As noted previously, neurotypical newborns are seemingly predisposed to look for human-familiar features in their surroundings, and thus they get an early and inspired start in attempting to match their own thought patterns to those of other people. Even assuming a neurotypical child's empathy apparatus is initially undeveloped, we can easily follow the process whereby such a child is given repeated assurances that her own desires, feelings and thoughts are matched by those of the other humans around her. As such a child begins to explore the contents of her world, we might imagine her at first open to the possibility nearly any item in the environment could think and feel as she does—a chair, for instance. If we could put words to the child's early cognitive churnings, they might go something like, "When I touch the chair, it touches me back—it must be thinking in the same way I do." However, over time, as the child continues her interaction with the

chair, her cognitive processes are going to realize the cognitive recognition test does not hold: “When I’m hungry and cry out for food, the chair does not cry out for food. In fact, the chair never seems to cry out for food—it doesn’t seem to be interested in the same things I am.”

Nonetheless, for a neurotypical child there is one feature in her environment consistently reliable for providing evidence of a similar way of perceiving the world. The recognition begins with mom, expands to include dad and siblings, and eventually—oh, most joyfully—includes other children of similar age and circumstances. The child laughs and a human laugh comes back. The child is hungry, cries out for food, and suddenly finds herself in the presence of other people eating food with her. The child sees a bully push down another child, begins to whimper in fear, and discovers there are others crying around her too. The neurotypical child, already preconditioned to think there is something special about humans, is given consistent evidence that these interesting creatures must think and feel nearly exactly the same way she does, and furthermore, this recognition comes with advantages, since it leads to satisfaction of needs, opportunities for more interaction and consistent approval. Some children as early as two years of age, and nearly all neurotypical children by the age of five, have begun to recognize that what is foremost in their own thoughts is also foremost in the thoughts of other people—that is, quite early on they begin to cognitively recognize a nearly exact cognitive process to be found in their environment. This recognition and the abundant examples of it suggest the possibilities for imitation and projection, which in turn form the basis for imaginative play. A good portion of a neurotypical child’s ability to perform well on the Sally-Anne test must result from the child’s ability to see the scenario through Sally’s eyes, quite confident by now the cognitive perceptions will match.

We see in this description of the neurotypical population that species recognition, cognitive recognition, empathy—these are all highly intertwined concepts that serve a fundamental biological role of helping hold a species together, allowing its members to interact consistently and mutually. A similar process almost certainly takes place within the other animal species, albeit with less sophistication than in humans. Empathy can be described as part of the social glue that evolution has handed down for the purposes of increasing survival and procreative success, and within the neurotypical population empathy is composed fundamentally of the strong cognitive recognition that comes with the population’s shared interest in all things human.

So we ask, do members of the autistic population lack empathy? If our definition of empathy were to require we take the human cognitive norm (overwhelm-

ingly influenced by neurotypical cognition) as the absolute standard by which to measure empathy, then indeed we would have to conclude autistics do not instinctively possess a good sense of empathy. The results of the various theory of mind deficit studies are not to be taken lightly—they consistently reveal that in the developing years and in the more severe forms of autism, autistics have tremendous difficulty recognizing the cognitive processes of point-of-view perception, belief, deceit and so on. Even within older functioning autistics, some elements of this cognitive confusion will remain. But our definition of empathy does not assume an absolute standard by which to measure cognitive recognition: an entirely different type of cognitive process from the human cognitive norm should be expected to have great difficulty recognizing neurotypical cognition, and that is precisely what happens for autistics, especially young autistics. When describing the two subpopulations, we concluded autistics do not fundamentally form their cognitive framework around species recognition and familiarity, but instead develop a cognitive stance organized primarily around the structures and patterns to be found in the broader environment. Thus we have already stated autistics do not cognate in the same way neurotypicals do, and the results of the Sally-Anne experiment and similar theory of mind deficit studies demonstrate just how dramatic this distinction can be.

To explore the autistic cognitive process in further detail and understand why such a process does not easily recognize neurotypical cognition, we can begin by briefly mentioning two other commonly cited explanations for the autism pathology—the weak central coherence theory and the somewhat related executive dysfunction theory. Both these descriptions of autism highlight that autistics frequently perceive and focus on parts and details in their world, while being relatively unable to grasp the whole or organize the big picture. Up to a point, these explanations are consistent with what we have already been describing about autistic cognition, namely that without access to species familiarity and recognition—the framework upon which neurotypicals inherit their big picture view of the world—autistics will put together a cognitive framework piece-by-piece, focusing first on the elements of symmetry, repetition and elementary pattern to be found in their environment, then using the beginnings of this framework as a means for assimilating further information. An analogy to this process would be the putting together of a complex jigsaw puzzle without having guidance as to what the finished picture or overall structure is like. Progress would be difficult and slow at first but would tend to get easier as aspects of the developing puzzle provided clues on how to proceed. (It is probably no coincidence that many

autistics display these very types of skills and deficits in the building of actual jigsaw puzzles.)

This manner of cognitive development leads to a variety of results for autistics, in terms of progress, in terms of the aspects of the environment that get mapped, and in terms of the amount of time it takes. In the severest cases of autism, it would appear the individual finds great difficulty pulling together more than just a few fundamental aspects of the world around him, not enough to incorporate the more complex elements, such as those related to socialization and human cognition. Other autistics are observed to gain detailed and deep proficiency mapping out specific regions of the environmental experience—these would include those who acquire savant skills, such as in music or chess or calendar calculation—but such autistics will often display continuing difficulties with other features of the environment not so deeply explored. And still others, and these would typically include those who go on to become functioning adults, can be seen as pulling together a wider variety of detail about their world and at a relatively quicker pace, enough so as to facilitate language acquisition at a reasonably early age and to foster further exploration of the more complex features of their surroundings—including eventually the features to be associated with human behavior and cognition.

The results of the Sally-Anne experiment are consistent with this description. Although few autistics perform accurately on the Sally-Anne test at ages as early as neurotypicals do, autistics do not universally fail the test, but instead display a range of results that vary widely with age and ability. As a group, they perform more accurately on such tests as they become older, and perhaps more significantly, those diagnosed with milder forms of autism—that is, those who relatively speaking are becoming more successful at incorporating a broader portion of their world—generally become able to pass false belief, deception and other theory of mind tests during the developmental years, late childhood or early adolescence being a common time for beginning to understand the basic mechanisms of human cognition. (It would be quite unusual, for instance, to find a functioning autistic adult who could not handle the Sally-Anne test.) In general, the range of autistic performance in theory of mind deficit studies reveals two significant facts about the autistic cognitive process: one, autistics do not possess a natural understanding of the basic forms of what we regard as the human cognitive norm (keeping in mind that this norm is deeply influenced by neurotypical cognition), and two, a significant number of autistics do acquire, secondarily and belatedly, an understanding of basic human cognition as part of their developmental process.

That autistic cognition develops in this manner is evidenced also in the frequently made observation that autistic children can respond to people as though they were objects, and not thinking, feeling beings. For autistic cognition as we have been describing it, such an approach is to be expected. Early on, all elements in the autistic's environment are experienced on a roughly equal sensory footing, with no one feature, including humans, occupying a position of priority. Although most autistics will at some point find humans intriguing because of the frequency of their appearance and because their behavior might seem like a puzzle to be solved, the same could be said of many other items in the autistic's early surroundings—television sets and cars, for instance. When the time comes for figuring out and participating in human cognition, the autistic individual will find himself not in possession of inside information as it were, but instead must come to his understanding almost entirely through external observation and experiment. Another analogy might be helpful at this point, that of considering how one computer can be made to mimic the operations of another. If the hardware characteristics of each computer are nearly identical, the simulation proceeds straightforwardly, and this would be similar to the circumstances neurotypicals find themselves in with respect to one another. But if the underlying hardware characteristics are fundamentally different, the simulation can proceed only through indirect means: the target computer's operations are observed and surveyed, a model of that behavior is formulated, tested, adjusted and perfected, with the model itself eventually being run as software on the simulating computer. In a roughly similar manner, functioning autistics will begin to figure out the cognitions of the other humans around them, and will thereby learn to mimic their corresponding behavior.

We can take deception as an example. Deception has been adopted as part of the human cognitive norm because of the immediate biological advantage it can sometimes confer, and neurotypical children, open to perceived human usefulness, find it easy to understand and copy such behavior when observed in others; thus neurotypicals are good at both recognizing and practicing deception from a relatively early age. Young autistics, more or less oblivious to the notion of gaining human advantage, yet keen and hungry for the literal truthfulness in their environment, turn out to be notoriously bad at deception, both in recognizing it in others and being able to practice it themselves. But for developing autistics who have mapped out enough understanding of their world and of language to begin tackling the complexities of human behavior, they soon observe that people will say and do things that stand in direct contrast to objective reality. Based upon these observations and helped by explanations from others, they begin for-

ulating mental models for describing and predicting such behavior, and eventually they can cognitively run these models themselves—that is, they can begin to effectively lie and deceive.

Such modeling of human cognition does not take place all at once; it is built up over time with varying degrees of success. And such modeling is never perfectly precise, because as with a software simulation of a computer hardware operation, nuances and efficiency are frequently compromised. Nonetheless, we must not overlook the importance of this cognitive step a significant number of autistics make, because it meets the requirements of what we defined at the beginning of this section—it meets the requirements of empathy. Functioning autistics—indeed, this could be made the definition of a functioning autistic—learn to model various aspects of neurotypical cognition well enough to recognize those aspects in others and to employ them themselves. That is, they come to cognitively recognize a nearly exact cognitive process to be found in their environment, and they use this recognition as a means for increasing interaction and reciprocal behavior with the large majority of humans to be found around them. This potential for the development of empathy through the means of the autistic cognitive process is the major reason for stating that under the precise definition of empathy we have been considering, autistics do not really possess an empathy disorder. For we see it is not so much a mental empathy function or apparatus that is missing or impaired, as it is the cognitive recognition that is initially lacking, a recognition that can be gained with time, education and effort, resulting eventually in effective empathy, the strength of which is commensurate with the level of the recognition.

Further bolstering this view that the empathy difficulties of autistics are more attributable to a full-scale cognitive difference than to a particular defect or flaw comes from turning the situation around and asking, do neurotypicals naturally experience empathy for autistics? Although it would appear no formal studies have been attempted for measuring the ability of non-autistics to recognize, understand and mimic the autistic cognitive process, such studies are conceivable and their results predictable. Informally, we observe neurotypicals are generally perplexed in the face of autistic cognition and will tend to describe autistics as aloof, in their own world, obsessed with details, inscrutable, a little odd—terms that betray not only a level of uncertainty about the manner of person they are dealing with, but also reveal persistent attempts to see and measure autistics through neurotypical eyes. A word such as *aloof* carries an implication that autistics *should* be experiencing a closer connection to other humans, but as we have been describing it, there is nothing within autistic cognition that would suggest

humans are more likely to stand out as special features in the environment and thus be the objects of increased attention. The term *obsessed with details* hints there is something not quite healthy about this characteristic, but a certain amount of obsession with detail is essential within the autistic cognitive process in order for that process to uncover and build up meaning from the sensory world.

Neurotypicals find themselves ill at ease in the face of autistic cognition because at heart they do not recognize it, at least not in its purest form. And in a sense, this lack of recognition represents one of the major stumbling blocks for understanding the true nature of autism, because nearly all current explanations for the condition—colloquial and scientific—tend to describe the autistic cognitive process as one mostly similar to the neurotypical cognitive process, with only a certain amount of neural impairment accounting for the difference. But this grossly understates the distinction. The distinction between pure neurotypical cognition and pure autistic cognition is not one of a small quantitative difference. It is one of a vast qualitative difference. Each cognition, in its purest form, organizes the sensory world in an entirely different manner, the difference being so vast neither population can easily recognize the cognitive process of the other, and thus the term empathy disorder continues to sound out of place here, applied to either population, because the empathy difficulties between the two populations are the natural result of their large and reciprocal cognitive distinction.

That the two forms of cognition do manage to recognize each other at a certain level, enough to allow for mutual interaction in many circumstances, is attributable to their respective influence on each other over time, rendering *pure* versions of either cognition extremely rare within the adult world. And that one form of cognition is considered to be normal, and the other abnormal, is attributable to each population's relative size, but that consideration alone does not mark either form of cognition as invalid. The attempts to explain autism as an empathy disorder, or as some other type of psychiatric disability, are certainly understandable under the current circumstances of human society and culture, but they also add unnecessary complexity to a description that can be stated in far fewer words: fundamentally, autism is simply an alternative and minority set of cognitive traits that has gained genetic foothold within the human population.

These cognitive distinctions between the two subpopulations can be observed easily enough in the everyday world. Here is a scenario which must play out in a similar fashion in many households every day: consider a family in which the mother is neurotypical, the father is a functioning autistic, and the first and only child is autistic. The child is now around three years of age and has begun to dis-

play the distinguishing characteristics of his population type. Repetition and rules are favorable constructs for this child, and we can imagine him engaged in a game of turning on and off light switches around the house in a particular order and repeated fashion, a game he can play literally for hours on end. We can also witness the autistic father looking up from his own activities from time to time to observe his son playing this game, experiencing a sense of familiarity that goes beyond the usual fatherly instincts. And now we might also imagine the neurotypical mother, perhaps a little concerned about this strange game that does not seem to include her, deciding her child needs a more interactive activity to engage in, such as playing pretend store with mom. She attempts to stop the child from playing the light game and begins to play store with him, but the child suddenly bursts into a screaming rage. Not only does he not understand what mom is trying to do with the salt and pepper shaker, the Raggedy-Ann doll and the toy cash register, worse yet, she has stopped the light game right in the middle of a round, and surely everyone knows you can only stop the light game at the end of a round, when all the lights are either on or off.

If we now take a look at the autistic father we can observe how keenly frustrated he has become: he wants all parties to be pleased but perhaps more than anything he can sense how this scenario is not quite right for his son, and we might easily imagine him crying out peevishly to his wife, “Can’t you see he just wants to play his game? Don’t you understand your own son?” And the neurotypical mother—hurt, confused and dazed—no doubt wonders what sin she has committed that has left her in the presence of these two enigmas, instead of with a husband and child like everyone else seems to have. Fortunately, her anguish is not going to be ignored entirely. Although the father is apt to have a natural affinity for his autistic son and be inclined to argue for allowing him to continue playing his game, he is also going to have a secondary understanding of what his wife is trying to accomplish with the play store scenario, and he is going to have a desire that she can have her wishes met too. And she also, sensitive and open to the needs of her husband and child, will be looking for ways to remain flexible in the face of their atypical behaviors. This situation and many others like it are not easily navigated because the parties come to them from fundamentally different cognitive points of view, but fortunately the parties have also been influenced over the course of a lifetime by the cognitive processes that come more naturally to the other, enough so as to provide for some common ground and mutual understanding, and a means by which to share experience and interaction.

Empathy laboratories such as this must exist all around us. They will reveal the cognitive differences that distinguish the neurotypical and autistic populations,

they will reveal the more natural empathy each population has for its own population type, and they will reveal the secondary level of empathy each population has acquired over time for the other population type. These real world empathy laboratories demonstrate that the human population is composed fundamentally of two cognitively distinct subpopulations existing side-by-side.

To close this discussion of the first hypothesis, we can touch briefly on the motivations that encourage autistics to learn and adopt the features of neurotypical cognition, namely that without connections made to the neurotypical world the autistic individual would be vulnerable to the debilitating impact of loneliness and isolation. Autistics come into this world with scant few opportunities to experience, practice and strengthen empathy, because for them, finding an object in the environment for which there is going to be a strong cognitive recognition is an enormous challenge. As noted, neurotypicals cognate too differently to allow easy recognition to be found there, and inanimate objects and all other remaining species can also be ruled out for the obvious reasons. This leaves only other members of the relatively small autistic population, but even here, cognitive recognition is not all that easy. The issue is that although the cognitive *process* is mostly recognizable, the *subject matter* often is not. It is difficult to experience empathy when your deep abiding love is model train sets and the other's deep abiding love is baseball statistics. This content mismatch results from autistic cognition appealing to the structural elements of a very broad and far-ranging environment—different autistics will find themselves drawn to and exploring different aspects of that environment at any given time, and therefore their respective cognitive frameworks often will not overlap. Occasionally among autistics, interests and backgrounds do overlap, and when this happens we often observe a deep connection made between the two individuals, with this connection generally continuing as long as the common interest remains. (Autistics do change the focus of their thinking from time to time, and when this occurs, any empathetic connections made through the original interest will tend to dissolve.)

Over time, some autistics do begin to realize they share common themes in their thinking that transcend the subject matter—themes like pattern recognition, abstract reasoning, a love of rules—and through recognition of such themes, they can make still more empathetic connections to other autistics. But these connections remain relatively weak; they are not strong enough to tie members of the autistic population together in the same way as for neurotypicals. All in all, both because of the nature of their cognitive traits and because of the environmental circumstances in which they find themselves, members of the autistic population discover there is a certain amount of natural loneliness and isolation

to be associated with autism. And as has been suggested, empathy is not just a feel-good concept; it also serves survival and procreative purposes in a natural world that can be hostile to organisms left on their own. If autistics are cognitively ambivalent about their membership in the species *Homo sapiens*, their immediate physical circumstances will quickly remind them of the salient facts. More or less out of biological need, autistics are driven to bridge the cognitive gap to their neurotypical neighbors.

Little mention has been made so far about the reverse of this situation—the circumstances under which a member of the neurotypical population would come to recognize and incorporate aspects of autistic cognition. The same motivations clearly do not apply, for neurotypicals are usually surrounded by cognitions similar to their own and are seldom in danger of isolation or extreme loneliness. More importantly, it remains uncertain exactly what is *meant* by incorporating the autistic cognitive process. Would it work similarly to how autistics incorporate neurotypical thinking, through a kind of indirect cognitive modeling, or would an entirely different type of mechanism need to be applied? This is not an insignificant question, and its answer lies at the heart of the second hypothesis:

Second Hypothesis: A good definition for biological evolution is the combined process of genetic mutation and natural selection that explains how an organism becomes successful in its found environment. A good definition for biological anti-evolution is the process of an organism intentionally mutating its found environment in such a way as to allow the organism to become successful without undergoing genetic change and without being subject to the workings of natural selection. On the basis of these definitions, the presence of autism within the human population is anti-evolutionary.

The second hypothesis contains two related claims: the first is that the phenomenon of modern man—in particular his sudden biological and cultural success—is more elegantly explained by the process defined as *anti-evolution* than it is by the concept known as *evolution*. The second claim is that the presence of autism is the primary catalyst behind anti-evolution in man. We will explore each idea in turn.

The term *biological anti-evolution* might strike one at first as having a ring of science fiction to it, or perhaps the term is strongly associated in the minds of some

with the ideas of creationist theory. The definition given here is in fact far more mundane and purely scientific. The definition borrows from the key terms and concepts of evolutionary theory—mutation, selection, environment—and rearranges them to describe a biological mechanism that in most respects runs counter to the well-understood workings of evolution. In most general descriptions of the evolutionary process, the environment is treated as a given, and organisms are described as being successful in that environment by being the emergent winners in the processes of genetic mutation and selection. In a corresponding description of biological anti-evolution, the opposite takes place: the organism is now the given—it will not undergo any significant genetic mutation—and it succeeds not through the process of natural selection, but instead by circumventing selection, by radically and intentionally altering the organism's environment in such a way as to render the emergent surroundings more supportive and proliferative. Although in theory any organism might attempt to thrive through the process of anti-evolution, over the course of Earth's history it would appear only one species has availed itself of that opportunity. We are members of that species.

To see how biological anti-evolution makes a more elegant description of the rise of modern man than evolution does, we need to develop first a good sense of cosmological time. A good sense of cosmological time provides two insights: first, the mechanisms of evolution take place over an immensely long period of time, much longer than anything we are accustomed to experiencing or even imagining, and second, relatively speaking, the emergent success of modern man has occurred in the blink of an eye.

The Earth has a tremendously long history. Scientists describe the infancy of this solar system as having taken place about four and a half billion years ago. Nearly two billion years ago, conditions were finally right for cellular life to form in the waters of this planet, and in the hundreds of millions of years since, evolution has been weaving Earth's biological tapestry, with an assortment of organisms coming and going—some simple, some complex—all subject to the continuous processes of natural selection and genetic mutation. To grasp the immense amount of time we are contemplating, we might avail ourselves of a thought experiment. Imagine for a moment, if you will, there has been a cosmic traveler, a journeying laboratory technician, who has been checking in on this planet every five hundred thousand years or so to see how things are coming along. He has been noting the drifts of the continents and the changing weather patterns. He catalogs the species, both plant and animal, and takes a census. We might imagine him graphing and charting these findings for taking back to his

supervisors, so that they too could analyze the changes and trends, and what might strike our technician the most from visit to visit is how incredibly little change takes place each time. The vegetation growing from the Earth's crust would shift in kind and form in only the subtlest of ways, drifting slowly to the types of plants and flowers we observe today. And of the more complex organisms, only a handful of new ones would appear with each new visit, along with a corresponding handful of extinctions. With the exception of the occasional asteroid hit or massive volcanic eruption, each visit would be more noteworthy for what did *not* change than for what did—and this despite the fact each interval would be a mind-numbingly lengthy one half million years. “Ah, yes,” we might hear our visitor say on nearly each of these many many returns, holding up his graphs side-by-side, “only a few deviations from the last time I was here. The evolutionary laboratory seems to be progressing along quite nicely.”

Now imagine the last visit took place about fifty thousand years ago, a mere sliver within the gigantic time frame we have been considering. Once again, we might observe our cosmic lab technician plotting the subtle changes, and as he updates his catalog of the various species, he might pause for a moment at man. “Now this one is interesting,” he will say. “Only seen on a few of the more hospitable parts of the planet, yet appears to be expanding its reach. Genetically complex, shows some crude use of tools, one or two nuances beyond the communication skills of the other primates. On the other hand, he looks awfully puny and defenseless against the meteorological and biological forces on this planet—I wonder how long this creature can hold out before extinction. Yes, I must remember to check specifically for man when I return again in five hundred thousand years.”

But upon this last comment, we might imagine a supervisor crackling through on a communication channel, “Don’t wait five hundred thousand years this time. Check again on the planet in fifty thousand years.”

“Fifty thousand years!” our lab technician objects. “Nothing’s going to happen in just fifty thousand years. Why waste my time?”

“Just do it,” the supervisor replies.

And so dutifully, in less cosmological time than it would take to grab a quick cup of coffee, our technician returns. One glance—and we can only imagine the sound of his jaw hitting the cosmic floor. “My god! What has happened here?”

We do not easily grasp the immensity of the transformation ourselves because we live in the midst of it. But seeing it from the vantage of our imagined lab technician, who after all would have visited this planet thousands of times by now and would have observed it change so slowly over all that time, we might begin to

get a sense of his overwhelming astonishment. “The immense cities!” we might hear him crying out. “The roads, pipelines, power lines, endless fields. Oil being sucked from the ground and burned for energy. The dearth of trees, the dearth of animals! Books, houses, song. And the machines—oh, the machines—cars, combines, ocean going ships, airplanes, telephones, televisions, computers, satellites, space probes. And just how many billion humans are down there? They were only in the tens of thousands the last time I looked! And look at where they are living—the deserts, polar regions, under the oceans. They’ve been to the moon, for God’s sake! How can this possibly be, and in no time whatsoever? What has happened here?”

We allowed our cosmic traveler a full fifty thousand years from his previous visit, but we ourselves could have experienced much the same sense of astonishment if only we might have taken a sunny-day plane flight from the east coast to the west coast of North America a mere three hundred years ago, followed by a similar flight today. The immense woodlands, endless prairies, pristine mountains and virgin coastlines—they are suddenly no more, the Earth’s skin having been thoroughly tattooed in a patchwork of concrete, asphalt, paper, wire, plastics, piping, steel, lumber, paint, drywall and crops. From a cosmological perspective, Earth’s environmental transformation can only be described as stunning, unbelievable, far beyond words—we might liken it to a powerful chemical explosion, or maybe the surprising and immediate blooming of a desert flower. If we could take just a moment, pause to look around us and gather in all we can from a few feet away to the farthest horizon, consider what that setting must have been like for so many millions of years and what it was still like until just so recently, then contrast that to what it has become now—then finally realize this observation could be repeated at countless locations all around the planet, almost always with similar astounding effect. If our sense of cosmological time is working at all, we cannot help but be overwhelmed with amazement and awe, for we are living in the midst of a nearly instantaneous transformational miracle, one of our own making.

Or at least, we would have to describe it as a miracle if evolution is guiding our view. I find myself often perplexed when reading books and articles from scholars who can weave—admittedly with great skill and cleverness—explanation after explanation attempting to link evolutionary concepts to the phenomenon of modern man (the sociobiologists and evolutionary psychologists currently lead this charge). I say perplexed, because I know such scientists are well versed in evolutionary theory—are experts, in fact—and yet it seems as though they are refusing belief in one of the most fundamental principles of what they claim they

know. The biological evolutionary mechanism is a grindingly slow process, with significant change measured almost invariably on the scale of millions of years, not thousands or hundreds, and thus evolution is an exceedingly unlikely candidate for shedding light on the sudden bursting forth of modern man and his civilizations. I am of course not the first person to question this practice of applying evolution to the transformations of recent human history—Stephen Jay Gould, for instance, well aware of evolution’s glacial pace, was one of the foremost and more eloquent critics of those claiming to see evolution in nearly everything modern. Perhaps it has been the lack of a suitable alternative explanation that has compelled scientists to try again and again to fit the evolutionary square peg into the round hole, but this is a problem that needs to be stepped away from and seen afresh. This is a problem that needs to be turned around.

Modern man is *not* an evolutionary success. Instead, modern man finds himself engaged in the process of breaking free from evolution, with astounding effect. On Earth, man has become an anti-evolutionary force.

Evidence for biological anti-evolution is not to be looked for in the organism; instead, it can be found in a purposely transformed environment. Environment is a very broad term used in this context—it might be more meaningful to say something like, the entire physical surroundings that can be sensed directly or indirectly, or others might regard the concept as captured more succinctly in the term *the world* (as in “the world is all that is the case”). I will continue to use the term environment because of its biological connotation, but in addition to such things as trees, streams, clouds, rain forests and the like, we must open the concept to so much more: a baby’s laughter, smells wafting from a restaurant, our clothing, electromagnetic waves. The term encompasses concepts we might not typically consider as environmental, such as our language, but after all, all forms of our language manifest themselves in the environment—sound vibrations in the air, ink on a page, gestures with the hand. Humans too must be considered as part of this broad concept of environment—our behaviors, odors, memory lobes and prayers—because for each one of us, the others and their effect are palpably out there. And in a sense, nearly everything is out there—in the environment.

Some items in our environment still originate from nature and are not created, altered or otherwise impacted by man. But a major tenet of anti-evolution is that today, now, here in the early twenty-first century, an amazingly large portion of what we experience in our environment is man-made or man altered. We can grasp the enormity of the mark *Homo sapiens* has made upon this planet by simply holding an image before our mind’s eye of what Earth must have been like thousands of years ago compared with a corresponding image of how Earth

stands today—nearly every observable, measurable difference is the result of man. To categorize all these countless changes would require the help of anthropologists, historians, religious scholars, political scientists, architects, engineers, agricultural experts, doctors and even fashion designers. All would need to be brought front and center, because the broadest categorizations of these etchings made into our surroundings would include such concepts as the harnessing of energy, the construction of cities and governments, the systematic production of food, the development of the written word and printing press, the flowering of the many branches of mathematics, literature, religion and philosophy, and the discovery and application of so many physical laws, engineering principles, medicines and computer science. And the smallest sampling of the many manifestations of these changes would include the gasoline tank on your car, a packet of love letters, the reciting of football scores on the local news, a dog-eared copy of *Zarathustra*, the opening bars of a Sousa march resounding in a concert hall, the policeman's gun, the swishing skirt, a bottle containing blood pressure pills, every inch of wire connecting the Internet, and the corner ice cream shop on the way home. A complete listing of the environmental transformations would now take many lifetimes to assemble. We have been busy these last fifty thousand years, busily engaged in mutating our environment—and we are becoming more prolific at it at an exponential rate.

In attempting to explain these transformations of man and his surroundings, scholars have not typically looked outwards to the environment, but instead have looked inwards to man's brain. It is often suggested man must have adaptively evolved the particular mental capacities that account for his tool usage, language, advanced social structures, sciences and all the rest. Some in the fields of cognitive and evolutionary psychology have postulated a modular framework for the human brain that includes specific regions devoted to functionality for language, logic, creativity and problem solving, and it is suggested that such modules adaptively evolved in the recent ancestry of man and burst into effective bloom around fifty thousand years ago. There are even serious arguments put forth that man must have evolved at one point a cerebular structure that works as the neuronal equivalent of a universal Turing machine, thereby allowing man to think algorithmically and computationally instead of just instinctively, thus accounting for his sudden separation from the rest of the animal kingdom. I do not mean to sound too dismissive of all these explanations—the phenomenon of modern man is sufficiently rich to allow for considerable speculation, some of which can be quite ingenious. But these attempts to build an evolutionary underpinning to

man's supposedly unique neuronal capacity suffer from one obvious and serious flaw—genetics.

Significant genetic mutation—the kind that alters species, let alone the planet—is not an everyday event. As an evolutionary mechanism, its expected frequency is measured in the millions of years. But to take seriously all the suggestions made of advanced brain development within the immediate forerunners of man would be to postulate an enormous number of highly significant, highly successful genetic mutations all occurring within the span of no more than perhaps a few hundred thousand years. The current genetic evidence does not point down that road. Genome research indicates man's genetic structure does not vary in large degree from his primate relatives, and no doubt there is even less variation from man's immediate biological ancestors, such as *Homo erectus*, and finally there must be less variation still (if significantly any at all) from the *Homo sapiens* who foraged on the African plains fifty to a hundred thousand years ago. Scientists believe it quite conceivable that if we could transpose a Cro-Magnon newborn to our modern times, nurture him, educate him, dress him up in the latest fashion and send him off to work, he would blend into the surroundings just fine, barely distinguishable from all the rest. And no less instructive would be the reverse of that thought experiment: that is, a newborn from today transposed to the prehistoric African plains and raised there would not suddenly begin spouting forth an alphabet or perform arithmetic tricks or construct dazzling architectures—such a child would grow up to be a hunter-gatherer, just like those around him. The mental capacities man utilizes to help create and navigate his modern culture must have been present from a long time back, perhaps far longer than we are willing to admit, and thus do not of themselves serve as the precipitating factor that suddenly propelled man to depart the savannah and go find his universe. In many ways this insistence that man's brain capacity alone accounts for what distinguishes his species from all the rest is a continuation of the kind of anthropocentric nearsightedness that has nearly always plagued science. It is a variation on the kind of thinking that within the cosmological realm had man convinced to the point of dogma that Earth stood at the center of the universe. It took the expanded vision of a Copernicus to teach man to direct his attention outwards, and in the realm of psychology the time has come for a similar broadening of the context.

The other frequently invoked explanation for man's sudden advancement on this planet is that it results from cultural evolution—the same basic principles and mechanisms of biological evolution, only applied now within the domains of behavior, society and culture. The crude early formulations of this philosophy

were classified under the term *Social Darwinism*, but these days the tradition is carried on with far greater sophistication by scholars such as Richard Dawkins, in writings outlining concepts described as memes, selfish genes, replicators and the like, theoretical constructs depicting how cultural ideas can compete, mutate and effectively evolve. According to the memeticists, man and his brain still play a critical role in this drama, for man is the carrier of all these constructs, his neurons the cauldron in which competition, replication and mutation can take place. Although many objections have been made and can be made to such theories, we will focus here on the one most germane to the discussion at hand, namely that theoretical constructs are just that—*theoretical*. In biology, genes have a physical manifestation, they are made up of the chemical strands of DNA every organism possesses. Memes it would appear do not have an equivalent physical manifestation, or if they do, it is described as being etched in the neuronal connections of the human brain. But this would raise the question of how such neuronal connections get physically transmitted from brain to brain, especially given that some cultural ideas now spread around the planet in a matter of hours or even minutes. Or we might look at all this from another perspective. If mankind were to be suddenly wiped out tomorrow, say by an all-consuming plague, and Earth were to lie mostly dormant for thousands of years, would a visiting intelligence then have no means of reconstructing the ideas and cultures we take as the hallmark features of modern man? Would every architectural principle, every scientific discovery, every witty turn of phrase have vanished, dissolved in the final biological decay? Or would the evidence still be obvious, standing as it were right in front of the onlooker's eyes?

Modern man, his civilizations, the transformations to this planet—all can be described more elegantly than with brain modules and memes. We need only appeal to the richness contained within the environment we have constructed all around us. As man has mutated his environment—first slowly by crafting tools, mastering fire and putting on clothes, then more quickly with agriculture and metallurgy and shelters, and finally accelerating to the cascades of alterations we experience today—in the process he has left markers of his newfound knowledge everywhere within the environment, and thereby has passed along the intelligence and the ability to recreate its effects from person to person, tribe to tribe, culture to culture, generation to generation. In some cases, these environmental markers are obvious, such as with books and the massive amount of information now stored electronically on the Internet. But there are many other education-filled, tangible markers we might underestimate until we become consciously aware of them. For instance, every building is a visual lesson plan in geometry. Our system

of highways and roads is a living laboratory on topics such as networks, flow and cooperation. We humans experience a continuous flood of education simply by having our five senses open to the environment that exists around us, an environment that is increasingly man-made. We can no longer take a five-minute trip to the grocery store without being inundated by the accumulated knowledge of our past and present.

It is in this way that man insures the continued and increasing intelligence of his species—by storing his knowledge and discoveries more or less permanently into his environment, and not into his brain. We have the same brains we had tens of thousands of years ago, but we live in a far more intelligent setting. This is the likely explanation behind the Flynn effect, the discovery that intelligence measures such as IQ are steadily increasing around the globe at the rate of about three IQ points every decade. Each generation, both consciously and subliminally, picks up the additional information that has been added to the environment since the previous generation and thereby goes forth smarter than its forebears. In ancient Greece, geometry was accessible only to a genius like Euclid—today a high school student, having lived a childhood populated with lines and shapes, handles the subject with relative ease. Three centuries ago, calculus was an impenetrable fog to all but Newton, Leibniz and a few others—now college students, prepared all their lives by examples and experiences of accelerations and square footage, differentiate and integrate by the thousands. One day, relativity theory and quantum mechanics will by similar means become more widely mastered. As we gain knowledge about our environment we store that knowledge right back into the environment, encode it in our books, our machines, our behaviors, our lives. We build our human intelligence, literally, right there in the environment, and a human brain does not need special functionality to access this intelligence or to speak about it. A human brain needs only its senses, its memory and a decent start. Somewhere along the way, man began the immensely valuable practice of intentionally mutating his found environment, and the results have been explosive—and anti-evolutionary—ever since.

We can examine the other claim of the second hypothesis—that autism is the primary catalyst behind biological anti-evolution in man—by considering first the cognitive characteristics that would be necessary to allow an organism to mutate its environment to its own advantage. Nearly all successful organisms change their environment to some degree: the lion impacts the gazelle population, the bee pollinates the flower, and the mighty oak crowds out and shades the lesser

trees. But in nature, these effects are mostly peripheral, having been produced at first by chance and having taken hold through natural selection; they are not directly perfected, generalized or built upon by the species itself. In contrast, man's alterations to his environment have taken on an entirely different tenor. Instead of a handful of such transformations, they have now become countless, multi-faceted and ever more frequent, and man's environmental mutations are seldom independent from one another, but instead form a linked chain or a mapped set of alterations, each building upon the previous—as when sickle becomes thresher becomes combine. Far from being produced by accident or chance, man's alterations to his environment display overwhelming evidence of being skillful, precise, generalized and repeatable. This type of intentional manipulation would be impossible without the existence of two cognitive prerequisites.

The first prerequisite is awareness. An organism would need to be conscious of any environmental features to be altered, because that which is not perceived cannot be intentionally changed. The other animal species do not appear to have the same degree of environmental awareness as humans now possess. The bee knows the flower, but is ignorant of its roots; the lion discerns the weakened zebra, but fails to apprehend the clouds overhead. For all other species, it would appear the environmental features non-essential to their survival and procreation do not reach the level of consciousness, whereas man's recent history can be described as an ongoing and accelerating saga of expanded spatial and temporal awareness, an awareness that now goes far beyond what is needed for survival and procreation alone. For humans, space now ranges all the way from quark to cosmos, time runs back from the Big Bang to the latest nanosecond. Our accumulated knowledge and intelligence hangs upon an ever-expanding framework of environmental awareness, and we have been using this framework to rapidly change who we are and what we can do.

The second cognitive prerequisite for skillful environmental manipulation is a capacity to see underlying structure and form, and to see these accurately. Awareness alone is not sufficient for allowing an organism to successfully alter its surroundings. The organism would need to understand its environment so deeply as to be able to penetrate into its laws and logic before attempting any alterations—otherwise, the mutations would more likely prove disastrous than to do good. Man has suffered his share of such disasters when his understanding of the environmental structure has proven to be inadequate, but by and large, man has displayed remarkable skill at deciphering the keys to most environmental situations before attempting to re-create them, a skill at deciphering that now forms the backbone of scientific method and artistic insight, and extends these days as

far as fathoming the fundamental building blocks of the physical world and the fundamental building blocks of life itself.

In summary, man has become the one organism on this planet able to change its environment accurately and beneficially, because first, man is the only organism to have become consciously aware of that environment, and second, man has grown to understand the environment's underlying structure and form so well as to be able to render the majority of his alterations more *constructive* than *destructive*.

It is time now to recall our earlier comparisons between the neurotypical and autistic populations, and to remember our descriptions of their respective cognitive traits. We recall that it is the non-autistic population that possesses a more natural affinity for strong species recognition, and thereby possesses a stronger awareness of the environmental features crucial to human survival and procreation. But also, precisely because of that, non-autistics are less naturally inclined to see the biologically *non-essential* pattern, structure and form to be found in the broader world around them. (Such broader awareness is more an acquired and learned skill for the non-autistic population.) Autistics, on the other hand, their cognition less predetermined by species recognition and its consequences, find themselves naturally drawn to making sense of their experience by appealing first to the structures and patterns that inherently stand out in their environment, an environment that is not predefined and not pre-bounded by the priority of any human-specific influences. Autistics by their very nature are able to cast an eye more widely across the field of their sensory world and are able to focus a gaze more deeply into the environment's underlying structure and form. When not overwhelmed by the social and biological difficulties that their condition can so easily bring, and when able to maintain a reasonable connection back to their own species, autistics bring to mankind an expansion of environmental awareness that biologically would be difficult to obtain by any other means.

Thus, by comparing the cognitive traits of the autistic and non-autistic subpopulations to the cognitive prerequisites an organism would need in order to intentionally and skillfully mutate its surroundings, we are led to the conclusion that it is primarily the presence of autistic cognitive traits that accounts for mankind's ability to make anti-evolutionary transformations to its found environment. Autism is the primary catalyst behind biological anti-evolution in man.

The above conclusion does not discount the enormous role the neurotypical population has played, and continues to play, in the reshaping of mankind's environment—the word *catalyst* has been used precisely here—and any attempt to suggest that mankind's discoveries and transformations are inspired and achieved

solely by autistics would betray a gross misunderstanding. The neurotypical population, open to all forms of biological advantage, and imitative and pragmatic by instinct, has acquired over time a learned ability to apprehend and create in the broader environment, especially in circumstances where that apprehension and creation is perceived to be of immediate biological and social use (a perception which would be less easy for autistics to grasp). Although the presence of autistic cognitive traits has been the primary impetus behind humanity's broader environmental awareness, that awareness has resulted in a profound and revolutionary impact upon the *entire* human population, not the least of which has been a shifting of the human cognitive norm away from the strictly neurotypical form it once took during the early years of *Homo sapiens*, and moving it to the far more blended form of cognition that can be observed in nearly all adults today. Broadly speaking, man's ever-accelerating mutative impact upon his environment has fueled a kind of ongoing dance between the respective cognitive traits of the autistic and neurotypical populations, the autistic traits helping to open the door of knowledge to a much wider world, and the neurotypical traits helping to hone and spread this knowledge in such a way as to contribute to the overall success of the species. A fascinating symbiotic relationship now exists between the two sub-populations and their respective cognitive traits, with the contributions of neither party to be underestimated. In the modern age, it would not be accurate to describe the human cognitive norm as either purely neurotypical or purely autistic, but instead human cognition today stands as an intriguing blend of the effects of *both* forms of cognition, their respective characteristics having been thoroughly inscribed into the culture and into the surrounding environment.

Matching the autistic cognitive traits to the prerequisites allowing an organism to successfully mutate its environment has a certain logical appeal to it, but would not by itself be sufficient to make us accept autism as the primary driver behind biological anti-evolution in man—not without some form of tangible, corroborative evidence. But such evidence does exist, and in fair abundance. It exists in mankind's history and in the biographies of many of its most innovative and influential individuals. Historians, biographers and social scientists have begun to note the extraordinary number of figures from our past who have both utterly changed the way we see ourselves as humans and reconstruct our world, and who have also displayed many behavioral and cognitive characteristics commonly associated with the functioning forms of autism. A list of such individuals might easily include artists, scientists and thinkers such as Socrates, Da Vinci, Michelangelo, Newton, Blake, Beethoven, Thoreau, Kierkegaard, Nietzsche, Edison, Jung, Einstein, Yeats, Wittgenstein and Turing. And beyond the sci-

ences, arts and philosophy, we can also note there are many distinctive personalities underlying major religious and political movements—Meister Eckhart, Martin Luther and Thomas Jefferson come readily to mind, but it could also be argued that even the Jesus depicted in the Gospels, with his penetrating and revolutionary insight into the cultural and religious establishment of his day, his deeply felt frustrations at not being understood, and his frequent need to find solitude away from the crowd—even he might be described as someone displaying the traits and behaviors resembling those of a higher functioning form of autism.

Admittedly, it is not possible in the strictest sense to provide retrospectively accurate psychiatric diagnoses to historical figures, and at any rate, as has been suggested, the real catalyst here is the *influence* and *presence* of autistic cognitive traits, not the diagnostic label of autism itself. Nonetheless, in many cases we do possess enough biographical information to make the case for autism extremely compelling—Newton, Einstein and Wittgenstein are perhaps the most notable—and these cases alone would be highly suggestive that autism must be playing a substantial role in mankind’s anti-evolutionary turn. For if the rate of autism within the human population is indeed running at less than 1 percent, it would stand as an extraordinary coincidence to discover so many individuals with autistic-like characteristics standing at the forefront of mankind’s cultural development. What we see so frequently alongside each critical turning point in our anthropological history is an individual with a familiar set of features—often solitary, sometimes irascible, iconoclastic, misunderstood by contemporaries, detached from or naïve to the practical circumstances of his immediate surroundings—all while being deeply engaged in penetrating the heretofore mysteries of a much broader world. It must be more than mere coincidence that the landscape of human history is so broadly brushed with the work of distinctive individuals like these, who appear to have been high in the possession of autistic-like characteristics and who have made use of those characteristics to help open our eyes to where we are and what we can accomplish as a species. These individuals and their transformational legacies are the strong evidence indicating that somewhere along the way, the autistic cognitive traits were introduced into the human population, and from that moment on, man became increasingly anti-evolutionary.

Third Hypothesis: The natural trend will be for the size of the autistic population to continue to grow as a percentage of the human population.

Researchers and medical practitioners are noting today we seem to be in the middle of an autistic spectrum epidemic. The reported numbers of diagnoses are growing at what is considered to be an alarming pace, from a prevalence rate estimated by many to be about 1 in 2000 as little as thirty years ago, to currently reported figures that are fast approaching 1 in 100. In the United States, the Centers for Disease Control and Prevention are investigating the phenomenon to determine if the increase is genuine and if there might be a discernable explanation. Media outlets are running autism stories on nearly a daily basis, the bookstore shelves are sprouting autism-related titles like mushrooms, and local support services and school systems are sounding the alarm they may soon be overwhelmed with autistic spectrum caseloads. Therefore, it is not surprising that many concerned observers have been speculating as to possible environmental causes at the root of this upsurge, with some common proposals being the presence of mercury-based preservatives in childhood vaccines or an increased level of industrial pollution and toxins, enough to spawn severe immune system reactions.

Others have been quick to point out that a large portion of the increase can be attributed to the growing awareness of autism in the general community, allowing people to give a diagnostic name to what actually has been prevalent all along, but unrecognized. Parents and pediatricians are now more knowledgeable of the signs to look for in detecting autism early, and this, along with society's generally increased focus on the developmental milestones of its youth, has almost certainly led to more children being diagnosed today who previously would have been regarded as simply quirky or a bit behind. The diagnostic criteria themselves have been seen as loosening and expanding somewhat, in particular to capture more instances of the less severe forms of autism, and this too has produced an increase in the reported numbers. Finally, the media attention itself has provided an opportunity for undiagnosed functioning autistics to recognize the condition in themselves, many realizing for the first time that their struggles with socialization and their tendencies towards obsessive interests might come with a medical name attached. So indeed, the increased awareness and attention being given to autism does explain in some measure the increasing number of autism cases, both those professionally and self-diagnosed.

But there is more to the story.

Many of the detailed prevalence studies, after factoring for the changing diagnostic criteria and accounting for such things as population growth, still suggest a residual increase in the rate of autism. In a sense, those who are convinced there must be an environmental factor behind autism's rise are correct, although the factor they likely have in mind is not the one actually at work. What misleads us is that we look for specific *things* in the environment, instead of considering the impact of the environment as a whole. We have already encountered, previously in this essay, the real reason behind autism's continuing rise. The human population, using the deep knowledge catalyzed in large measure by its autistic members, finds itself mutating the environment in a manner that naturally produces an increased propagation of its autistic traits.

Until recently in human history, propagation of autistic traits must have been a difficult and haphazard process. Autistics, due to their weak sense of species familiarity, find themselves at a distinct disadvantage in the realms of survival and procreation, particularly in environments where physical dangers still lurk, food is not plentiful, disease remains prevalent, and sexual success depends largely on physical instincts and social ranking. In such environments, early death holds a high probability for the autistic, and even when adulthood can be attained, mating and family development remain problematic at best. To understand how the autistic traits might have originally taken hold within the human population and have continued to be propagated ever since will require further research and insight from the fields of anthropology and genetics. Two possible factors can be briefly mentioned here. One, the lengthy nurturing period of *Homo sapiens* and the resultant tendency to a family-based social structure may have resulted in a critically more tolerant setting for those members experiencing a major cognitive diversity. And two, there seems to be a high likelihood that the genetic markers for autism are carried in recessed form by the non-autistic members of the human population, allowing for the traits to be passed on by those who do not display the phenotype of the condition.

As difficult as the propagation of autistic traits may have been throughout human history, there can be no question the propagation keeps getting easier all the time. As the human population continues to alter its environment in the many astounding ways we have already considered, we note how beneficial the changes are to the autistic population. Raw survival itself is much easier now, supported by large communities, strong shelters, medicines and abundant food—all the result of man's deeply informed environmental transformations. Earning a living today is less likely to be done by instinct or raw muscle, means that would have put an autistic individual at a disadvantage, but instead is earned

more frequently with calculation, logic and the aid of various machines, means by which autistics can often excel. And as the environment itself has been rapidly transformed, so too has human sexuality changed in response. These changes are many—some subtle, some grand—but nearly all are to the advantage of the autistic population. As an example, these days an individual has a far larger pool of potential mates from which to make a successful match than has been available at any point in human history. Just a few hundred years ago, one's selection of potential mates was essentially limited to those to be found in the immediate locale. But today, riding a crescendo of advanced communication systems and ubiquitous travel, a lusty individual finds virtually the entire human population to be in play. This is an advantage the neurotypical population does not really need, because it has been doing fine all along. Enmeshed in its glue of empathy and graced by the advantage of being the large majority, the neurotypical population has always found itself with an abundance of potential mating targets. But for the members of the autistic population, who relatively speaking have been finding willing and appropriate mates to be few and far between, having a large selection available is critical for increasing the odds of making a successful match and propagating the genetic traits.

Through the benefit of these and many similar environmental and social transformations, autistics now find themselves surviving into adulthood at far greater rates than before, making decent livings, attracting mates more frequently and raising families as they once seldom could. The autistic population is no longer struggling as a subpopulation—it has begun to thrive.

It is difficult to predict where the current circumstances might eventually lead; many uncertain factors come into play—genetics and politics, to name just two. In contemplating a future that includes mankind's growing awareness of its increasing mixture of autistic and neurotypical cognitive traits, we would need first to emphasize the effective symbiotic relationship already existing between the two subpopulations—each benefits immensely from the traits of the other. To see this, we might imagine each population attempting to exist homogeneously. For a purely neurotypical population, one never having been exposed to the influence of autistic cognitive traits, we would have to assume a fate similar to that of the other species on this planet. Man's closest primate cousins, such as the chimpanzees, gorillas and bonobos, apparently without an autistic influence of their own, find themselves still evolution bound to the exigencies of their immediate environment and to the call of survival and procreation within that environment. For such species—in fact, for all species other than man— notions of space, time, abstract language, architecture and biochemistry remain far outside their ken,

their life forms and cognitive processes not open to what a broader universe might have to say to them. The forerunners of man, and *Homo sapiens* themselves, lived similarly for many hundreds of thousands of years. This was how our cosmic lab technician would have found them fifty thousand years ago and would have expected to find them still five hundred thousand years hence. To break evolution's hold appears to require a cognitive process able to see beyond its immediate biological needs and surroundings, and a purely neurotypical population, by definition, would not have access to the spark of such a cognitive process.

A purely autistic population, one without the benefit of a neurotypical influence, would appear to have difficulties of its own. Although there are no examples to guide us, the obvious first question to ask is, could such a population survive? It would seem that the continuing propagation of autistic traits within the human population has depended in large measure on the social and nurturing characteristics of its neurotypical members, an influence that can be witnessed in full effect today as loving parents and dedicated professionals work diligently to understand the autistic individuals in their care and bring them closer to experiencing the fulfillment that comes with connectedness and community. Even if it were possible that a purely autistic population could survive independently, we might ask about the nature of such a life form and wonder if it held any of the elements normally associated with vitality. A cognitive process informed and shaped entirely by the patterns and structure to be found in the surrounding environment would be remarkably like the external world itself—except perhaps stripped of its life forms—and although we might marvel at the near crystalline purity of such an entity, we might also shudder at its relative coldness.

These speculations aside, the present reality is that both subpopulations find themselves to be critical components of a human population that, taken as a whole, is thriving. Indeed, it is more than just thriving—the human population finds itself engaged in the process of freeing itself from evolution's grip and reaching for a much broader universe in which to flourish. This is not the place to wax poetic or philosophical, but I can still note with scientific intent that man's environmental transformations show evidence of direction, structure and purpose, and stand in stark contrast to the random processes evolutionary theorists would have thrust upon us. There is a way of looking at the phenomenon of modern man and his self-created cultures that would suggest the structures and laws of the external world seem to be breathing through him, coming to life and consciousness through his work. I would be tempted to call it *mystical* if it were not so obviously unfolding before our very eyes, and at our own hands.

In the interest of fostering the symbiotic relationship that already has bestowed so many benefits upon the human population, I would urge consideration of the following two suggestions:

1. Perhaps we should stop calling it an epidemic. In the first place, the autistic population is not sick; it simply possesses a different set of cognitive characteristics than the majority population, characteristics that come with their own set of challenges and benefits. More importantly, the autistic population's growth is a natural consequence of its influence on the human population and on the environment as a whole. In a manner of speaking, this increase in autism was meant to be.
2. Given that autistic prevalence will continue to increase within the human population, it would seem beneficial to both subpopulations to continue their efforts at making attempts to connect with each other. Fortunately, this process seems to be well underway. It has already been noted that most autistic individuals, motivated by the real benefits of empathy, are more than willing to reach across to the neurotypical population, and the presence of the many efforts in support of autistic spectrum children speaks to the desire of both subpopulations to make this connection happen, and happen more frequently. In turn, members of the neurotypical population, mostly through the processes of lifelong education and self-awareness, can continue to strengthen an activity they have been undertaking since the first, early appearances of autistic influences in their environment—that is, they can continue to learn about the deep environmental understandings that are the fruits of the autistic cognitive process, they can transform those understandings into general benefit for the population at large, and indeed, many can learn to grasp the essence of the transformational thought pattern itself and thereby contribute fundamentally to the continuing advancement of man. Reaches across the neurotypical-autistic cognitive gap are difficult, but not impossible. Each successful connection is a confirmation of the flexibility of the human mind and the glory of the human spirit.

Conclusion

That man is an extraordinary species will come as no surprise to those who have considered seriously the discoveries and accomplishments of the previous centuries—in particular those of the last century—or to those who have contemplated

the possibilities yet to come. The suggestion that autism, a condition regarded until now as a psychiatric and developmental disorder, could be the major key for understanding humanity's extraordinary transformational history might seem at first glance to be unlikely, perhaps outrageous. But autism, when deeply understood, will come to be recognized as representing the cognitive traits that have allowed man, unlike any other species on this planet, to see beyond his immediate biological needs and open for himself a world of immense discovery and profound creation.

Evolutionary psychologists are wont to explain man's achievements as random by-products of a brain suited for survival on the jungle floor, and adherents to cultural evolution are apt to describe modern man through a labyrinthine interaction of theoretical constructs such as selfish genes, memes, replicators and the like. For me, such explanations do not rise to the level of the nearly cosmic formations taking shape all around us. My hope is that the hypotheses postulated here will help us see ourselves and see our found environment from a new perspective, one that more accurately conveys to us who we are, and what we can do.

The World as Wittgenstein Found It



The Tractatus Logico-Philosophicus as a Model of Autistic Cognition

Autistics think differently than non-autistics—dramatically so. Autistics do not form their fundamental cognitive framework around innate recognition of their human surroundings, as non-autistics generally do, but instead develop a cognition informed primarily by the patterns and structure to be found in the broader environment. This form of cognition presents daunting challenges: autistics experience developmental delays relative to their neurotypical peers, and autistics mostly struggle with lifelong difficulties managing the social aspects of human behavior and culture. But autistic cognition offers a significant compensation. With thought processes less grooved by remnant channels of age-old species need, autistics gain potential to grasp the world in a unique manner.

Some autistics can see features of their environment previously hidden to others, many can examine underlying laws and structure with a laser-like focus, and a few manage to cast their surroundings into entirely new and creative paradigms. Social scientists and biographers have begun to note that many of history's most innovative individuals—Da Vinci, Michelangelo, Newton, Beethoven, Yeats, Einstein and Turing, to name just a few—could be described as exhibiting autistic-like characteristics and behaviors, traits that may have played a critical role in their immense contributions. Not all autistics are able to conquer the challenges of their condition well enough to receive in good measure its compensatory benefits, but for those who can, their built-in proclivity to lateral thinking serves the human population well. The influence of autistic cognitive traits has been a major catalyst in man's dramatic leap from savannah-bound primate to questing knight of a massive universe.

In attempting to bring the features of autistic cognition into sharper focus, I can think of three different approaches to take. The first approach would be to turn to first-person accounts from autistics themselves. The autistic autobiographical literature has expanded greatly in recent years, with informative self-descriptions put forth by writers such as Temple Grandin and Donna Williams. These accounts serve as enlightening introductions to the autistic experience from within. The major drawback to relying upon first-person accounts is they come almost exclusively from functioning autistics—that is, those who have come to understand elements of neurotypical cognition well enough to incorporate such elements into their own thinking and lives, using these as the means to help bridge the gap to non-autistic acquaintances and audiences. Such incorporation of neurotypical thinking is crucial for allowing an autistic individual to gain meaningful traction in the human world, but it also leaves the functioning autistic less capable of rendering autistic cognition in its purest form. Pure autistic cognition would in theory be more accurately described by a person with a more classic version of the condition, but alas, the characteristics of classic autism are such that the individual often faces a tremendous challenge conveying that experience to the rest of us.

The second approach to depicting autistic cognition would be to propose an unusual thought experiment. Imagine the entire world as a form of cognition, the broad surroundings—animate and inanimate elements both—as a living, developing thought process, then condense this representation down to the workings of one mind. This no doubt seems a strange notion, but in many ways it is this very strangeness that is the major advantage to the technique, for its unusual nature provides a sense of how vastly different is the quality of the autistic cognitive process from what we typically take for human thought. Autistics are the closest thing we have to true *tabula rasas*. Their early sensory experiences, less grounded by human-specific influences, are guided in large degree by the pattern and structure that stands out from the surrounding environment. These characteristics are evident in the rapt attention given by autistics to symmetries, repetition and literalness, and it might be as meaningful to say the world cognates through the autistic as it would be to say the autistic thinks about his world. The trouble with taking the world as a form of cognition is that the model is too overwhelming—no one mind, autistic or not, can reflect upon the entire surroundings, but instead absorb only limited portions of it. The world's immensity leaves inadequate foothold to condense the representation down to a detailed and applicable form.

What is needed finally is a technique that incorporates elements of both autistic autobiography and the world as a form of cognition, while at the same time avoiding the shortcomings of the above-mentioned approaches. What is needed is a model that can crystallize the essence of autistic cognition, in a relatively pure form, abstracting the complexities down to a framework recognizable within the confines of human language. This task at first glance would appear to be an overwhelming challenge, so it is with no small sense of awe and admiration I offer the suggestion the job has already been accomplished, accomplished with such literary bravura the result could pass as the twentieth century's most ambitious poem. The autistic cognitive model *par excellence* is Ludwig Wittgenstein's *Tractatus Logico-Philosophicus*.

Ludwig Wittgenstein was almost certainly autistic. Several notable psychiatrists, such as Christopher Gillberg in *A Guide to Asperger Syndrome*, have written extensively about the evidence backing this assertion. We can content ourselves here with just the highlights:

- Wittgenstein did not begin to talk until he was four years old. He continued to display language difficulties and peculiarities—a slight stammer, odd prosody, persistent trouble with spelling—that eased slowly only as Wittgenstein gained adulthood.
- His childhood is described as one with essentially no close friendships. Away at school, he regarded his classmates as crude and alien, and they in turn thought him odd, in part because of his insistence on addressing them with formal speech.
- He took frequent pains to maintain a level of social isolation, both in the large-scale manner of long habitations in barren settings, and also in the day-to-day routines that served as miniature getaways, such as taking his meals almost exclusively in his rooms at Cambridge, avoiding the small talk at high table.
- The relationships of his adult years were often tense and fragile. Sudden breaks occasioned by perceived slights or by Wittgenstein's brusque manner were a frequent theme. Although Wittgenstein maintained some contact with his family members, he never seemed particularly close to any of them and was often annoyed at their occasional intrusions.

- He required sameness in routine—a repetitive style of dress, the same meal served again and again, insistence on a particular form of American detective story or Western film genre for entertainment.
- His approach to work was compulsively focused. Over his lifetime, he displayed deep knowledge and ability in a series of narrowly defined interests—in engineering, mathematics, logic, music and architecture. He would return again and again to a favorite passage of literature or to a musical work that inspired him, but showed little interest in gaining a broad knowledge in any particular field, including philosophy.

Those who knew Wittgenstein personally, admirers and critics alike, almost unanimously describe him as atypical in manner and character. Much of Wittgenstein's biography* reads like the zigzagging journey of a man who both required and feared solitude, and his was certainly one of the more curious and uncommon lives from the annals of the twentieth century. His restless philosophizing, as much irritation as resulting pearl, comes across as an obsessive attempt to unearth the very root of mankind's connection to its universe—a challenge, it would seem, particularly irresistible to this driven autistic.

A brief history of the development of the *Tractatus* shows it to be the work of an intensely focused, brutally naïve and mostly isolated young man. Following an adolescent academic career that was undistinguished at best, and in the midst of a three-year stint of mostly unsuccessful aeronautical engineering research, Wittgenstein stumbled upon Bertrand Russell's *Principles of Mathematics*. The obsessive pull of the book's subject matter and its unresolved questions culminated finally in Wittgenstein, at the age of twenty-two, showing up suddenly and unannounced at the door of Russell's Trinity College rooms at Cambridge University. Russell recognized almost immediately Wittgenstein's immense eccentricity, overwhelming self-absorption and unrelenting drive in tackling what Russell considered to be logic's, and therefore philosophy's, most vexing problems. In less than two years time at Cambridge, Wittgenstein sketched out the core of his theory on symbolic logic, and then over the following three years—first in a self-

* Ray Monk's 1990 work *The Duty of Genius* is the most informative Wittgenstein biography written to date, and has an added advantage in that Monk was apparently unaware when he wrote it of the possibility for Wittgenstein's autism, so the book does not *say* Wittgenstein was autistic, but succeeds brilliantly in *showing* it on nearly every page.

imposed, spur-of-the-moment exile along a Norway fjord, and then as an enigmatic-to-his-comrades soldier in the World War I Austrian army—he wrote down most of the remaining remarks and ideas that would find eventual entry into the *Tractatus*.

Upon pulling together the final manuscript in the summer of 1918, Wittgenstein dropped philosophy all together, relinquished his recently inherited and enormous wealth, became a generally unpopular elementary school teacher, and did not return to formal philosophizing for more than a decade. The *Tractatus*, defying considerable odds and hurdles, was published in both German and English versions in the early 1920s, and the work quickly attained its enduring aura of befuddlement, curiosity and vague admiration. In one of the stranger incidents from the *Tractatus* history, the work was accepted for Wittgenstein's Ph.D. thesis upon his return to Cambridge in 1929, and at its perfunctory defense, Wittgenstein is described as having ended the session by clapping both Russell and G. E. Moore on the back, saying, "Don't worry, I know you'll never understand it," betraying both Wittgenstein's extreme tactlessness and his unerring perception.

The *Tractatus* reads unlike any book before or since. You begin to suspect this simply thumbing through its pages once or twice, and you might easily confirm the suspicion reading only the first and last sentences:*

- 1 The world is all that is the case.
- 7 What we cannot speak about we must pass over in silence.*

The *Tractatus* is a short book by philosophy standards—less than a hundred pages in length—yet the immense compression of its ideas means that a careful reading (and re-reading) is going to take at least several days, not just a few hours. Herein lies the first hint that the *Tractatus* is making its presentation from an autistic point of view. Nearly all its statements are put forth as declarative assertions, in a tone that leaves an impression of having walked in upon a reciting of the harmony of the spheres. There is scarcely any attempt at defense, develop-

* *Tractatus* translations by D. F. Pears and B. F. McGuinness.

ment, argument or persuasion. Persuasion is a social activity; it is a means by which two or more members of a community can bring their ideas into alignment, in a spirit of respectful cooperation. Wittgenstein in the *Tractatus* not only eschews persuasion entirely, he treats it as something that cannot be meaningfully attempted. The truth of the book's assertions, as is suggested in its preface, is unassailable and determined by inspection—take it or leave it as you wish and at your own peril, the author would appear to say. We can assume Wittgenstein would not have been very helpful on a book tour.

The *Tractatus* is more revealing as a work of abstract autobiography than it is as a treatise on symbolic logic or language. Such a statement goes against the grain of the usual scholarly approach, which more typically regards the book as concerned primarily with the foundations of logic and mathematics, an extension of the treatments given those subjects by Bertrand Russell and Gottlob Frege near the turn of the century. The remarks in the *Tractatus* on topics such as psychology, ethics, aesthetics, death, God, solipsism and the mystical are often treated by reviewers with a kind of awkward embarrassment, as though the statements had wandered in by accident and were conspicuously out of place (although not without a certain charm of their own). It is indeed true that a good portion of the *Tractatus* is devoted to Wittgenstein's radically unique development of propositional logic, but he himself leaves numerous clues that this technical material serves only as a foundational support for a much higher purpose. The preface, for instance, hardly mentions the topic of logic, and is completely silent on the subject of mathematics. In a letter to a potential publisher, Wittgenstein describes the *Tractatus* as consisting of two halves—the written half containing that which can be meaningfully said, and an unwritten second half, consisting of those topics which are the most important but which cannot be meaningfully put into words, only shown through delineation. It seems reasonably certain that this unspoken second half has little to do with propositional logic.

In the *Tractatus* itself, as the book nears its climax, Wittgenstein's remarks on logic increasingly take a back seat to ideas that come across more forcefully, almost to the point of sounding emotional. In one of the book's more personally revealing moments, Wittgenstein notes:

- 5.631 If I wrote a book called *The World as I found it*, I should have to include a report on my body, and should have to say which parts were subordinate to my will, and which were not, etc., this being a method of isolating the subject, or rather of showing that in an important sense there is no subject; for it alone could *not* be mentioned in that book.

For me, the *Tractatus* is exactly the type of book Wittgenstein hints at in this passage, differing only in that Wittgenstein's reports on his physical and environmental surroundings are transformed into broad abstractions, so that the resulting framework becomes universally representative. From nearly every page, Wittgenstein speaks in a manner that suggests this is how the world looks to him, this is how he has found it, how it reflects through him, with some of the world capable of being meaningfully described with thoughts and language, and some of it, perhaps its most important elements, not. Unable with precise sense to *describe* himself and his worldview, Wittgenstein attempts to *show* it by building a structured representation—a model—with logic as the foundation and propositions as the scaffolding. If the resulting depiction does not appear to the typical reader to be in any way a familiar form of self-description, it is because Wittgenstein's cognitive perception of his world is in fact in no way typical—it is nearly purely autistic.

The *Tractatus* maintains complete silence on the subject of human relationships. Humans scarcely get mentioned in the book other than when Wittgenstein briefly invokes a name (Russell, Frege, Hertz, etc.) to attribute an idea to someone. In truth, there is only one character in the *Tractatus*—the world.

Autistic cognition is like that. Whereas most human beings are born with an innate ability to recognize human features in their surrounding environment and will form a cognitive framework containing a strong social element, autistics generally lack this ability, and as a consequence end up constructing a cognitive paradigm in which the human and social components mostly go missing but for which the broader environment plays a vital role. When a neurotypical newborn opens her eyes, she sees first and foremost mom and dad and the other humans in the surroundings; she picks out human voices from the auditory background, and has a natural affinity for the smell of people and the touch of their skin against her skin. Thus begins a lifelong process whereby her familiarity with her own spe-

cies and its members becomes the primary shaper of her thoughts and being. By contrast, when the autistic newborn first opens *her* eyes, ears and other senses, she experiences an undifferentiated world, with nearly all sensory input placed on an equal footing. Other humans are of course part of that world, but do not hold a place of priority. Nothing holds a place of priority. The *Tractatus* itself asserts this characteristic by stating that all propositions have equal value. Every feature in the environment has equivalent potential to be an informative, shaping component of autistic cognition, and thus for autistics, right from the start, the world indeed is all that is the case.

The autistic's cognitive world is not only egalitarian in the broadest possible sense, it is also highly structured. Completely undifferentiated sensory experience would be too chaotic to navigate meaningfully. Autistic cognition, to make developmental progress in this world, must begin to focus attention on the environmental features that stand out from the remainder. From the initial sensory background of mostly random noise, the foreground that begins to emerge is one heavily weighted with elements that contain inherent structure and form—symmetries, repetitions, elementary patterns. The autistic child's early stereotyped activities, such as lining up toys, spinning wheels, twirling, repetitive humming, etc.—these reveal an almost overwhelming need to hone in on environmental experience that contains simple form. From this beginning, the autistic individual will go on to assimilate environmental features displaying more complexity. By school age, the need to find pattern in the world reveals itself most frequently as an obsessive subject of study—categorization of all the dinosaurs, memorization of world capitals, complete baseball card collections organized by career statistics, and so on. In adulthood, a functioning autistic's highly structured view of his world will lead most frequently to careers notable for their organizational characteristics, such as computer programming, tax accounting or library science, although by this time, some autistics have become so adept at incorporating nearly any level of structural complexity that in truth all forms of human activity are now open for mastery—thus we see autistics making marks even in such fields as literature and philosophy. The important thing to note in observing this progression from perseveration on simple elements of symmetry and repetition in early childhood to a proficiency with the more complex, rule-oriented activities of adulthood, is that at each point along the way, the autistic's cognitive framework is shaped and advanced most fundamentally by the underlying structure it uncovers from the surrounding world.

The *Tractatus*, in composition and content, is themed through and through with structure. This is made evident first in the numbering scheme applied to all the remarks in the book; each remark's number ties it structurally to the rest. Remarks 5.121 and 5.122, for instance, elaborate on 5.12, which in turn comments on 5.1, and so forth, the result being a tree structure of remarks, with the main topics at the trunk and the most detailed elaborations at the farthest leaves. Most readers ignore this numbering scheme and read the remarks straight through, but if the remarks were organized and linked as Wittgenstein has suggested, say on a gigantic wall poster, then at just one glance the work's insistence on the importance of form would be obvious. I might suggest that looked at in this manner, the *Tractatus* would remind more than a few observers of the synaptic connections in a human brain.

What makes Wittgenstein's contribution to the philosophy of logic so innovative is his relentless insistence on the fundamental essence of form. The initial statement of this subject comes right at the book's beginning, in the assertions that the world's structure—its *facts* and *states of affairs*—is more basic than the world's substance—its *objects* and *things*:

- 1.1 The world is the totality of facts, not of things.
- 2.011 It is essential to things that they should be possible constituents of states of affairs.
- 2.0141 The possibility of its occurring in states of affairs is the form of an object.
- 2.0231 The substance of the world *can* only determine a form, and not any material properties....

This argument is repeated in a different key in remarks outlining the characteristics of thought and language, where objects can only be named and that only for the purpose of being simple elements within structured propositions, where the true sense lies:

- 3.3 Only propositions have sense; only in the nexus of a proposition does a name have meaning.
- 3.1431 The essence of a propositional sign is very clearly seen if we imagine one composed of spatial objects (such as tables, chairs, and books) instead of written signs. Then the spatial arrangement of these things will express the sense of the proposition.

This last remark, along with all these assertions outlining the relative importance of structural relationships over that of substance, brings to mind a common problem that occurs with young autistics. When confronted with a familiar room in which the furniture has been rearranged, they often react in a strong and negative fashion, in some cases melting down emotionally while demanding the room be returned to its prior arrangement. The objects themselves have not been altered—all the same sofas, chairs, lamps and tables are still in view—but the objects are not what is important to the autistic mind, it is their arrangement, their structure, that makes all the difference. For an autistic, a change in structure is a dramatic change to the world.

The remaining *Tractatus* development of propositional logic is not the usual dry rendering of a technical topic—it plays more like a set of variations on these themes of structure and form. There comes first the picture theory of meaning, Wittgenstein's exposition of how thoughts and language gain sense by sharing pictorial form with what they represent, propositions reaching out to reality like a ruler laid against it. Later on, there is the invention of truth tables and truth polarity diagrams—visual representations designed to highlight the forms of tautologies and contradictions. Generally in the *Tractatus*, Wittgenstein remains abstract and is not forthcoming with concrete examples, but he does provide a scintillating one when highlighting not only the ubiquitous nature of underlying form but also the way in which that form ties together seemingly different elements of the world:

- 4.014 A gramophone record, the musical idea, the written notes, and the sound-waves, all stand to one another in the same internal relation of depicting that holds between language and the world. They are all constructed according to a common logical pattern....
- 4.0141 There is a general rule by means of which the musician can obtain the symphony from the score, and which makes it possible to derive the symphony from the groove on the gramophone record, and, using the first rule, to derive the score again. That is what constitutes the inner similarity between these things which seem to be constructed in such entirely different ways....

The employment of a music metaphor seems almost overabundant here, music being the art form demonstrating at its purest the power of taking something of the world's substance—its sound—that would be meaningless in chaotic arrangement, but when linked into organized form, not only gains meaning, it often takes flight. The same could be said of Wittgenstein's development of his theory of logic within the *Tractatus*. The overwhelming need to arrange the world's randomness into predictable and organized form is the very beginning and the very essence of meaningful life for the autistic mind.

Logic in the *Tractatus* is given its final statement when Wittgenstein outlines the general form of propositions and operations in remarks 6 and 6.01. Although the symbolism might at first appear to be terse and cryptic, the idea being expressed is actually quite simple: using these general forms, all complex propositions can be constructed, precisely and organically, out of the simple propositions. Such an approach mirrors that of the autistic developmental process, from its uncovering of elementary pattern in childhood to its ever-building complexity of fact formulated in maturity.

More importantly, this constructed rendering of the world both determines its range and sets the limit on that which can be meaningfully said and thought. Unlike non-autistics, who can be described as having access from birth to well-established templates of human and social convention, and who therefore can be seen as more open to concepts assumed to be given or self-evident, autistics tend to take the world only as it literally comes to them and as it can be constructed from its elementary facts. This distinction between what can be assumed and what can only be experienced was often the subject of some amusing, yet intense

debates between Russell and Wittgenstein, an argument that spills over at times into the *Tractatus* and Russell's introduction to it. Russell in his later years would often tell the story of how he would put on a great show of looking under all his chairs and opening all his desk drawers, trying to get Wittgenstein to accept the proposition that there was not a rhinoceros in the room, or at other times making three ink splashes on a piece of paper and asking Wittgenstein to agree that there were now at least three objects existing in the world, that at least that much was self-evident. Wittgenstein would never budge. It was not the absent rhinoceros or the three marks on the page he was objecting to, it was the notion that things could so easily be described as self-evident or that the world might be rolled up into a nice, neat package and talked about as though it were a non-constructed, given thing. Such a stance might appear to some as overly obstinate, but Wittgenstein's earnestness can be assumed from the fact he went to such great lengths to formalize his position.

With the self-evident and non-constructed propositions placed out of bounds, the *Tractatus* assigns many of philosophy's traditional routes of inquiry to the waste bin of nonsense. Wittgenstein describes philosophy not as a body of doctrine, but as an activity, a practice of elucidation.

6.53 The correct method in philosophy would really be ... whenever someone else wanted to say something metaphysical, to demonstrate to him that he had failed to give a meaning to certain signs in his propositions....

Included among these signs that Wittgenstein proclaims are seldom, if ever, given proper meaning are those related to talk of a subject, soul and human mind. The *Tractatus* elucidation on these topics comes complete with metaphor and picture:

5.641 ... What brings the self into philosophy is the fact that 'the world is my world'....

5.632 The subject does not belong to the world: rather, it is a limit of the world.

- 5.633 Where *in* the world is a metaphysical subject to be found? You will say that this is exactly like the case of the eye and the visual field. But really you do *not* see the eye. And nothing *in the visual field* allows you to infer that it is seen by an eye.
- 5.6331 For the form of the visual field is surely not like this



That simple picture, with its eye removed, by analogy represents the entire world, with no subject contained within it but defined instead by its boundary—an image of the world as a form of cognition.

Wittgenstein's analysis denying the simple subject appears both to anticipate and to demonstrate today's most frequently cited explanation for the autism pathology—theory of mind deficit. This hypothesis was first put forth by researchers Simon Baron-Cohen, Alan M. Leslie and Uta Frith in a landmark 1985 paper in which its authors describe, complete with compelling experimental evidence, how most autistics are fundamentally delayed or impaired in their ability to ascribe various forms of thought and belief—a mind, in other words—to other humans and even to themselves. Theory of mind deficit remains one of the more highly influential descriptions of autism in today's medical and research practice.

In the only section of the *Tractatus* that gives consideration to what we might regard as typical human thought, Wittgenstein sharply dismisses the prevailing view of his day, in a manner setting off a forward echo to the present day theory of mind studies:

- 5.541 At first sight it looks as if it were also possible for one proposition to occur in another in a different way. Particularly with certain forms of proposition in psychology, such as 'A believes that p is the case' and 'A has the thought p ', etc. For if these are considered superficially, it looks as if the proposition p stood in some kind of relation to an object A . (And in modern theory of knowledge (Russell, Moore, etc.) these propositions have actually been construed in this way.)
- 5.542 It is clear, however, that 'A believes that p ', 'A has the thought p ', and 'A says p ' are of the form "' p ' says p ': and this does not involve a correlation of a fact with an object, but rather the correlation of facts by means of the correlation of their objects.
- 5.5421 This shows too that there is no such thing as the soul—the subject, etc.—as it is conceived in the superficial psychology of the present day...
- 5.631 There is no such thing as the subject that thinks or entertains ideas...

Wittgenstein's argument is so compact it has been the subject of debate as to how best to interpret it, one candidate being that the entity A simply drops out in the logical analysis of the proposition. An alternative view is that the analysis of A thinking the proposition p is just as complex as (and sharing pictorial form with) the analysis linking the proposition p to what it depicts in the world—thus rendering A far too complex to be captured with simple words like *mind* or *soul*. Either way, the *Tractatus* language is clear in that the judgment of A is not relevant in the determination of what is and what is not the case. If the *Tractatus* can be understood as a model of cognition, it is a cognition that does not possess a theory of mind.

Perhaps beguiled by assertions that traditional analysis on topics such as soul, mind, good and evil is doomed to fail as nonsense, the schools of philosophy that have most frequently embraced the *Tractatus* have included those, such as the Logical Positivists, who have felt that language and philosophy should be restricted to explorations wandering no farther than the realm of the natural sciences, no farther than that which can be dispassionately verified through sense experience or experiment. But Wittgenstein never showed much agreement or tolerance with this position, and for anyone who has read the closing pages of the *Tractatus* with seriousness, this will come as no surprise. Although the *Tractatus* does formally outline a world limited by that which can be meaningfully repre-

sented in language, Wittgenstein proclaims with near religious fervor that there is nothing cold, lifeless or merely scientific about this limited world—far from it:

- 6.41 The sense of the world must lie outside the world....
- 6.52 We feel that even when all *possible* scientific questions have been answered, the problems of life remain completely untouched....
- 6.522 There are, indeed, things that cannot be put into words. They *make themselves manifest*. They are what is mystical.
- 6.43 ... The world of the happy man is a different one from that of the unhappy man.

For autistics, the external world forms the locus of their mode of perception, and thus carries the load of all the tension, emotion, drama, charm and mystery of a complex life form. Or to turn the picture around, because of the way in which environmental experience so fundamentally shapes and informs autistic cognition, autistics tend to have a heightened sense of the world's immanence—calming and meditative at times, but godlike and thundering at others, and mystical always. This experience of the world as self is, by Wittgenstein's logic, impossible to analyze and a tremendous challenge to represent. That the *Tractatus* makes the attempt to capture the experience in its entirety is remarkable, and that it nearly succeeds is nothing short of miraculous.

The story of the *Tractatus* ends in a long coda, notable for being perhaps still more brilliant than the exposition. Wittgenstein was not yet thirty when he finished the work, and had lived until that age in a series of circumstances not socially typical, settings that in many ways had helped preserve the intensity of his autism. This would change over the following decade. Wittgenstein found himself more frequently interacting with his human surroundings—trying to persuade publishers to take on the *Tractatus*, working as a schoolteacher in rural Austria, consulting for various Cambridge and Viennese philosophers, and even making the acquaintance of a potential mate. As happens so often with functioning autistics who are attempting a deeper foray onto the customary paths of human society, Wittgenstein found himself more often than not uneasily failing in these efforts, and was being forced to face in all its immediacy the fundamental friction that existed between his own nature and that of the average man. For

some autistics, such moments of revelation can be paralyzing and debilitating, while for others, they can be the source of further growth and inspiration. In a most impressive way, Wittgenstein fell into the latter category.

Upon being persuaded to return to Cambridge near the age of forty, Wittgenstein began reassessing portions of the *Tractatus* that now seemed increasingly unsatisfactory to him. After a few initial attempts to patch things up in a small way, Wittgenstein embarked on a radically new approach. To him, those portions of his philosophy now most in need of renovation were those related to the absolute insistence on the use of logic and formal structure as the basis for an ideal language, one that could reflect the essence of the entire world—a world that was now less stridently *his* world. In his posthumously published masterpiece, the *Philosophical Investigations*, Wittgenstein devotes the early part of the work to a critique of his use of symbolic logic and picture theory of meaning in the *Tractatus*, in many ways faulting his earlier model as being not so much incorrect as being too precise, too pure and too limited for the purpose at hand. The critique builds to a crescendo at remark 107 of the *Investigations*, a passage that serves not only as the call ushering in all of Wittgenstein's later philosophy, but also can be read as the heartfelt cry of a man shedding enough of his autistic armor to make contact with a mostly uncertain human world:

The more narrowly we examine actual language, the sharper becomes the conflict between it and our requirement. (For the crystalline purity of logic was, of course, not a *result of investigation*: it was a requirement.) The conflict becomes intolerable; the requirement is now in danger of becoming empty.—We have got on to slippery ice where there is no friction and so in a certain sense the conditions are ideal, but also, just because of that, we are unable to walk. We want to walk: so we need *friction*. Back to the rough ground!*

Wittgenstein's rough ground turned into twenty plus years of further philosophical inquiry. Although he would touch on technical topics such as the foundations of mathematics, more and more frequently Wittgenstein's attention turned to psychology, human language and human understanding. How strange and how revealing that the philosopher who in his youth had developed a formally precise cognitive model devoid of a theory of mind, would in his maturity deliver some of philosophy's most potent insights into the concepts of knowledge, language, meaning, belief, certainty and doubt. Many scholars are quick to

* Translation by G. E. M. Anscombe.

assume that Wittgenstein's later philosophy stands as a repudiation of the *Tractatus*; but looked at through the lens of Wittgenstein's history and his autism, the later philosophy would be more meaningfully described as an enhancement to the *Tractatus*, a fleshing out as it were, the placing of a more substantive human form onto what had been a bone-clean, but not fully functioning frame. The result is a complete lifetime of philosophical work that is transcendent—transcendent of all typical forms of human thought, and transcendent of pure autistic cognition, as well.

Despite deep respect for the *Tractatus*, I would remain hesitant to recommend it as reading to most people—I think the majority would still find it more bewildering than enlightening. No one need feel *too* bad about this, it is after all an unusual and challenging read.

But for those who, like me and not just a few others, have found the book at one time or another to be irresistibly fascinating without being able to quite say why, I might offer this essay as an alternative approach to its pages, one that places the reader more squarely behind Wittgenstein's own eyes—the eyes of an autistic. Viewed from this perspective, one can almost hear Wittgenstein's inner voice—in his rooms at Cambridge, in the Norwegian isolation, and amidst the insanity at the Eastern Front—demanding into his notebooks, *here I am, myself as my constructed, structured world, no matter how strange that may seem*. His is a vision that in one sense is exceedingly unfamiliar, and in another is as common as the accumulated knowledge of all mankind. Autistic cognition is an open window onto a very expansive world, and thus serves, along with the *Tractatus*, as a source of light for all humanity.

through these difficulties and grow to mature as functioning adults within a somewhat misunderstanding society, they will receive as compensation perspectives upon this world that not only enrich their own lives, but also help open new doors of knowledge, understanding and indeed beauty for all mankind. Autistics, as a direct result of their condition, find themselves less cognitively constrained by the conventions of human and social norms, and discover they are more fundamentally attuned to the underlying structures and patterns to be found in the surrounding environment. Autistics carry innate ability to perceive their world in a unique manner, and in retrospect it appears many of history's most innovative individuals—such as Newton, Beethoven, Einstein and Turing—were likely inspired by the broadened context of such autistic traits and influences.

I have written elsewhere about these wider impacts of autism, and hope to continue to do so in the future, but today I want to focus on a piece of personal serendipity. For while I truly could not have expected this, while navigating the churning, crashing waves of facts, fallacies and speculations regarding autism, I have also come upon what I believe to be the answer to an enigma haunting me for nearly twenty years now. This has been a curious and perplexing question that has often kept me awake late into the night, and for which many times in shrugging despair I have concluded its answer is so deeply rooted in mystery there could be no hope of finding significant clarification. But now I see it differently—and if you have a moment, I would be more than willing to share my discovery with you. For you see, while looking deeper and deeper into the true nature of autism, I have also begun to understand why I have found *Calvin and Hobbes* to be so damnably funny.

The Strip

Calvin and Hobbes was a daily comic strip written and illustrated by Bill Watterson, featuring its two title characters, a six-year-old boy and his companion tiger. The strip made its first syndicated appearance on November 18, 1985, and quickly skyrocketed to widespread popularity. At its height, *Calvin and Hobbes* graced the comic pages of more than two thousand newspapers around the world, and even appeared in translation. Its success opened the way to several book form collections, the definitive version of which was published in 2005 as *The Complete Calvin and Hobbes*, a full-sized, authentically colored rendering of every Watterson creation.

It was not just the strip's enormous appeal, however, that made it noteworthy. Although Watterson had been trying for nearly five years to break into the com-

petitive world of comic strips when *Calvin and Hobbes* was first accepted, its sudden success appeared to catch him off guard. Within a few short years, he found himself furiously battling for his artistic rights against the licensing desires of the strip's syndicate, which could see the lucrative potential in allowing the strip's budding cultural icons to appear on coffee mugs, lunch pails, pajamas, and even television and movie screens. Watterson's dogged resistance to merchandising was only the beginning of his fight against the business side of comic strips: he also argued for improved artistic conditions, railing against the shrinking page space being appropriated to comic strips by newspaper editors everywhere and castigating the prescribed and rigid comic strip form. He also suggested the regenerative value of giving comic strip creators some relief from the relentless work schedules and demanding deadlines.

Watterson's tenacity, bolstered by his strip's popularity, allowed him to prevail in most respects—*Calvin and Hobbes* has never been commercially licensed, Watterson gained the right to use a less restricted format for his Sunday strips, and he was offered and took two nine-month sabbaticals during the early 1990s. Nonetheless, disillusioned by the continuing pressures of economics over art, and perhaps feeling he had already given the best he had to give to his unique creation, Watterson informed his publishers by letter that *Calvin and Hobbes* would be discontinued after December 31, 1995, and in this manner, the strip came to its sudden end, its main characters riding the crest of their popularity, but also riding off forever on a sled down a freshly snowed landscape, nearly ten years to the day from their first appearance. Watterson has maintained a nearly complete reclusion ever since.

If ever there were a comic strip ripe for critical study, *Calvin and Hobbes* would appear to be it, although oddly enough such efforts have not been widely forthcoming. While it has become extremely common, almost clichéd, to see an author spice up a book chapter or article by incorporating an apt *Calvin and Hobbes* selection or two, few serious attempts have been made to analyze the strip itself. There could be several reasons for this. A comic strip, especially one that on its surface might be regarded as targeted more towards children than adults, would not readily be looked upon as art or literature by an academic community locked into more traditional avenues of inquiry. The strip's popularity might also be seen to work against it in this respect, success sometimes taken as antithetical to true artistry, a misconception Watterson himself would find occasion to argue against. But I think more than anything, scholars have shied away from critical

analysis of *Calvin and Hobbes* because the strip is diabolically challenging—it presents such a wide-ranging montage of character, imagination and atmosphere it can leave a reader feeling uncertain about where to stand in relation to it.

The strip's characters, for instance, stubbornly defy simple description. Calvin on cursory glance would appear to be a typically mischievous six-year-old boy, but a closer inspection reveals he is anything but. Linguistically inspired, culturally resourceful and completely at odds with a human world he would give anything to ultimately conquer, Calvin exudes more the effect of a frustrated adult condemned to live out existence confined within a child's body and milieu. Hobbes presents an even greater graphical and imaginative puzzle, a limply benign stuffed tiger in the presence of any character other than Calvin, but otherwise a depth-infused, worldly wise and vaguely aloof tiger of vitality, complete with ferocious mandibles of death and smooch-ready eyes. The strip's supporting cast of characters, hovering just near the margins—Calvin's parents, teacher, bully, babysitter and neighborhood girl—would appear in some sense to fill out the role of being the villains of the strip, in as much as they frequently thwart and misunderstand Calvin and his misadventures; yet each is presented with unmistakable tinges of warmth and pathos, so that they too come across as containing far more depth than would originally suggest itself to the eye. Finally, there is the easily overlooked but hauntingly effective environment of the strip, embodied in the large variety of visual landscapes, Watterson's pen and brush deftly rendering scenes ranging from the quiet simplicity of a bicycle leaning against a suburban garage wall to the chromatic frenzy of fifty foot tall graknoid monsters holding sway over an alien planet—all done with such nuance of atmosphere that the former comes across as more sinister than the latter.

These combined effects of characterization, drama and scenscape clearly demark *Calvin and Hobbes* as something more substantial than the average play-it-for-gags comic strip, and even suggests a medium with a potential range of absurd to sublime that surpasses that of the more self-conscious and worn-out forms of modern literature and art. Still, there lingers a question here of what is really going on in the background, since above all else *Calvin and Hobbes* continues to work quite effectively on its most obvious level, as simply humor enjoyable to readers of all ages and circumstances. Faced with a comic strip that can turn so frequently on the concept of perspective, one finds oneself at a loss as to how to take a perspective upon the strip itself.

I feel I know a little something about this uncertainty as to how to regard *Calvin and Hobbes* because I have found myself not infrequently puzzled by the strip since it began showing up on the back pages of the *Indianapolis Star*, reading material of morning coffee breaks while working my first post-college job as an actuary. To give a sense of how the strip can fool you, I might note I began by cynically passing judgment on the strip's Monday morning *Star* debut, proclaiming it most likely too silly and childish for my own tastes, but then admitting after chuckling just two panels into the Tuesday strip that this one was probably better than most, and ending finally by realizing in retrospect that upon reading the Wednesday installment, I had become hooked for life. The strip's intense hold on me was confirmed several months later, after I had shown up at friends' house in anticipation of going out to dinner and discovered they had just purchased the first *Calvin and Hobbes* collection, containing most of what I had missed before the *Star* had picked up on the strip. In less than five minutes time I was reduced to an uncontrollable, rolled-up ball of tearful laughter on my friends' floor, speechlessly waving them on to dinner without me. I had finished the book and started over again by the time they returned.

Perhaps I should offer as fair warning from the outset that analyzing humor for what makes it funny is never going to be a perfectly rewarding activity, one I myself have found best reserved for the wee hours of the morning. In recalling my wincing dumbfoundedness at my father's penchant for fart jokes, and noting the blank stares I often receive upon telling others *Slaughterhouse-Five* is the funniest novel I have ever read, I do realize with some sheepishness my own sense of humor does not run to the ordinary. In attempting to explain this to myself, I have most often settled on words like depth or resonance—that is, for me, finding something to be funny usually means it has to work and connect on more than one level. That all sounds fine as far as it goes, but has done little over the years to help convey to me why I continue to carry such fascination and unbounded joy for *Calvin and Hobbes*. That the strip harbors abundant depth and rich resonance I have had little doubt about, but I have also had very little success putting a finger on exactly what it is about this strip that seems to radiate in so many telling directions. That is, until the perspective of autism came along.

To state it baldly and without further ado, I have come to think *Calvin and Hobbes* is at heart a comic strip about an autistic individual, or at least an individual greatly influenced by an autistic point of view. The strip boldly captures the offbeat drama of what it means to strive towards becoming a functioning autistic

adult within a strangely askew world, presenting a fascinating juxtaposition of the relentless needs and mostly frustrated efforts required to overcome and belong in such a world, alongside the nearly mystical perception of beauty and understanding that serves as the unexpected reward for pressing all those needs and making all those efforts. *Calvin and Hobbes* is about—no, more accurately, *Calvin and Hobbes is*—the bittersweet comedy of being autistic in the modern world. I imagine you might be finding yourself understandably skeptical of this thesis, wondering among other things who this autistic individual could be that I am referring to. Yes, that part will take a little explaining, although I can begin by pointing out ironically enough that the individual's full name was proudly and colorfully displayed each and every week, right there as the logo of the Sunday strip: Calvin and Hobbes by Watterson.

Calvin

Many people's initial acquaintance with Calvin has come not through an authentic version of him but instead through one of the many illegal rip-offs made in his image, including the rendition ubiquitously popular with Chevy pickup truck owners, the crude decal depicting Calvin pissing on a Ford logo. Still, I think there must be something culturally essential, indeed almost poetically just, about this widely advertised and blindly accepted misconception as to who Calvin is and what he is most apt to put his best efforts towards. Part of the ingeniously constructed metaphor underlying Calvin is that he represents those among us who are the most fundamentally misunderstood, a misunderstanding reflected in the bemused reactions of the strip's supporting characters, many of whom can honestly confirm there is something not quite normal about this kid (even if at a loss as to say exactly what). The effect, however, remains quite subtle within the strip itself, done with an ease of touch that can be easily overlooked, trusting to a sensitive reader to recognize there is something more substantial to be grasped here. Thus I see it as reflexively appropriate that it is left in the capable hands of small-minded, money-grubbing gewgaw purveyors everywhere to so perfectly embody the common blindness and stupidity regarding the character. That evil-minded expression on the face of the pissing Calvin represents that of a typically miscreant six-year-old boy, proving the decal stamping machines and copyright-infringing xeroxes have failed to capture their target accurately. Anyone with even the slightest appreciation for the genuine Calvin can tell you without a moment's hesitation there is nothing typically *anything* about him, and I would dare say it

remains open to interpretation as to whether he is actually six years old, and not instead an adult—or even a god.

The first thing to notice about Calvin is that he is the quintessential loner. He has a best friend, true, but in Calvin's social world, that best friend is a stuffed tiger. Calvin's interaction with the *human* characters of the strip is distant and awkward at best, and in storylines chronicling Calvin's attempts to join the scouts or organized baseball, for instance, Calvin's status as the strangely regarded outsider becomes thoroughly ensconced. Notwithstanding the presence of Hobbes, the number of installments in which Calvin appears entirely by himself runs to an extraordinarily high percentage, making even Charlie Brown appear socially popular by way of comparison.

I would not make the mistake of *diagnosing* Calvin as autistic—thereby trivializing a rich character by medicalizing him—but in addition to the lack of social skills and interaction, I might also note the long list of Calvin traits and behaviors many parents of autistic children would easily recognize. Odd use of toys. Learning difficulties in school while possessing encyclopedic knowledge of favorite topics, such as dinosaurs. Zoning out in the presence of others. Awkward gross and fine motor skills. Trouble falling asleep, and unusual eating habits. Calvin's emotional responses too often tilt to the extreme, triggered by circumstances revealing much about Calvin's contrarian edge, for we tend to find him at his most sullen while caught in the grip of humanity's customary and prescribed courses of activity, and most ecstatic on those rare occasions he manages to extricate himself. Calvin would appear to regard his status as a six-year-old, suburbia-fed, *characteristic* boy as though it were the cruelest of jokes ever to be perpetrated, and fills nearly the entire history of the strip with a seldom-disguised rage against it. Calvin's incessant demand is that his true self be placed on stage instead, a self that can only be described as ... otherworldly.

Autistics, particularly those considered to be high functioning, are born into a no-man's-land of an intriguing conflict between humanity and a not-so-passive world. Having not experienced from early age a deep connection to their human surroundings, and generally faring poorly at customary tasks of social interaction, autistics learn little of their worldview at the hands of others or from the normal channels of socialization. Instead, they are cognitively drawn to the structural features of a much broader, non-human environment, focusing first on simple symmetries, repetitions and easy patterns, and expanding from there to incorporate wider visions of the more complex forms and concepts to be found around them.

At some point, however, an autistic individual's expanding view of his world inevitably puts him face-to-face with his own biologically human nature, and although at first he might wish to ignore this sometimes uncomfortable fact, there will always be the persistent, well-intentioned efforts of relatives, schoolmates and government officials to remind him constantly of his human duties and expectations. This awkwardly unfolding revelation can produce a wide variety of results—not all of them positive—but often enough, autistics acquire a taste for embracing the challenge, bringing to it a splendidly volatile background. Having been cognitively informed and shaped as outsiders, but under steady pressure to find the means to conform and fit, autistics approach their place within the human world with a sense of need, duty and even desire to belong, alongside nearly overwhelming urges to rebel and conquer.

Calvin and Hobbes lays out a delightful feast from one such conflict. Although we frequently find Calvin alone or solely in the presence of Hobbes, hiding from the demands of a society to which he clearly does not see eye to eye, it also seems as though Calvin's scheming and plotting for his next engagement with that society—whether it be for good or ill—can never stray far from his most immediate thought. The strip's energy derives almost entirely from Calvin's ongoing confrontation with a human world of expectations, Calvin ever optimistic he can bring that world at least marginally under his own control, and in the end it seems scarcely believable he almost never succeeds, given the ingenuity, range and sheer gusto of his attempts.

In the early days of the strip, Calvin's struggles with his parents, teacher, principal and the neighborhood bully have something of a primordial feel to them and do vaguely suggest the extreme emotional dramas common to an autistic child. But as Watterson's comfort level with the character increases, he begins raising the poignancy of Calvin's efforts to a much higher plane, casting them as more ageless. Eager to burst the skin of his prescribed childhood, and donning with glib ease cloaks of jargon and form available in bulk from the sciences, academia, pollsters, crime novels, magazines, advertisers and so on, Calvin begins sounding more and more like an oddly talented adult, the eerie combination of polymath postgraduate and door-to-door huckster. We begin to marvel as Calvin increasingly unearths preternatural ability to exploit the artifacts and trends of human culture in inspired and restless attempts to hoist that culture on its own petard. The battle would seem well matched until we realize its most resourceful combatant must also deal with the disabling incarnation of being a six-year-old boy. The opponent, more naturally self-protective and seemingly much broader in scope, always manages to sniff out Calvin's true intent in the end. "I exist for

the well-being of all and not for you alone—surely you’ve learned that lesson this time,” the common wisdom would seem to mock him. “Never!” Calvin rejoins, and begins searching once more for the nearest weapon at hand.

Although they are the least likely to accept any advice from me, to the portly professors of philosophy wont to grumble and complain about lack of examples for Nietzschean will to power, I might direct their attention no further than the character of Calvin. In addition to the unflagging efforts towards dismantling his everyday world and reassembling it for his own tastes, the oft-frustrated Calvin presents still more vivid, more richly drawn and more *real* glimpses into the array of forces he feels compelled to discharge, by giving them full channel where they can flow the most freely—in his fantasies. In the goriest of technicolor, we stumble upon Calvin the *Tyrannosaurus rex* on the loose, indiscriminately crushing cars, buildings, security guards, art patrons and other dawdlers underfoot. We traverse alien planets with Calvin as Spaceman Spiff, braving the scorching deserts of boredom and turning table on monster-masked authority figures, disposing of them blithely with death stares and ray guns. Here is Calvin as Stupendous Man, foiling the clutches of babysitters and history tests. There is Calvin as Tracer Bullet, Bogart-like master of household crime. Finally, as though the hints from the other sequences were not enough, we encounter Calvin as God himself, and not a kindly god, no—this is the all-powerful Old Testament-style god, hungry for sacrifice and unquestioning obedience. Ask Farmer Brown—soon to be crushed simultaneously with airplane, locomotive and propane explosion—about Calvin’s Yahweh-deep compulsions.

Yes, humans fare poorly in Calvin’s imagination, cast impersonally when spared and devoured messily when not. Unsuspecting first-time readers of *Calvin and Hobbes* can often find themselves horrified and sometimes offended by this seemingly complete disregard for humanity and its decencies. What these readers fail to take into account is that good taste is such a small and fragile container for holding a mindset forged almost entirely from the expanses of time and space.

Autistic perspectives are developed primarily out of the laws and underlying structure that give meaningful form to an otherwise chaotic world, making it unsurprising the accompanying feelings are sometimes experienced as godlike or mystical in scope, and that the inner forces engendered are often destructive, given they must be funneled through such small and immediate incarnations. The sensations are not dissimilar to those forms of sudden conscious expansiveness Carl Jung frequently described and cautioned against, having so frighten-

ingly experienced them himself. Their untrammled expression goes a long ways towards explaining the common perception of autistics as egotistical and iconoclastic. But if we are to regard as progress the unfolding course of human transformation—which after all is itself a saga of expanding temporal and spatial awareness—we must also be willing to give due regard to the potency arising from such cataclysmic tendencies. In Calvin, we are witnessing a pent-up new wine attempting to burst its old bottle, and if the tragic side effects are projected to be some muddy footprints across new carpeting or the trampled remains of a few innocent bystanders, well then, so be it.

Of course, to speak about Calvin's exploits and adventures as though they manifest a broadly sourced will to power is in an obvious sense comical, a mere repetition of the strip's *modus operandi*. Over the course of three thousand plus installments and despite an imaginative exertion that is second to none, Calvin fails in even the slightest respect to advance his cause any tangible degree. By the strip's end, Calvin remains the same six-year-old boy we found at its beginning, lives in the same house, wears the same clothes, stands in the rain yet once more to be bussed to a school he most thoroughly abhors, is forced to take baths against his will, do homework and eat green glop, and he continues to be incapable of renting those enticing videos, the ones featuring cannibals and vixens. If Calvin's visions and plans have remained as large and far ranging as ever, his ability to bring even the most childish versions of them to fruition within the time and space of his own neighborhood remains as frustrated in 1995 as it was in 1985. Calvin demonstrates again and again a lesson he cannot quite bring himself to accept: progress is bound to be slow when you are just one outsider swimming against a crowded tide.

No, wait—that last sentence does not belong here. The dramatic, the tragic, the pathos-filled side of attempting to bring what is universal into the more constrictive realm of humanity, that has been dealt with elsewhere, in other forms of literature and testimony—in other testaments. In *Calvin and Hobbes* the emphasis remains squarely on the comical. This too is a characteristic Nietzsche could have appreciated; it was Zarathustra after all who so frequently extolled the virtue of laughter, celebrating its strength and praising its value for embracing the failure of noble attempts. With Calvin—and those in the know would understand this could be said of autistics too—we are not meant to wail loudly, beat our breasts and wring our hands. We are meant to laugh and to celebrate.

The possibility for celebration must seem absurd to those who cannot see it, and admittedly, concentrating on Calvin's worldly advancement alone would do little to clarify one's vision. Calvin represents just one aspect of the autistic individual, the aspect destined to struggle ceaselessly (because struggle is what gives energy and life to the celebration) and the aspect destined to be frustrated nearly always (because tension is what provides the celebration with depth). Calvin is not fated to experience the rewards of his efforts directly, not through the conquering or assimilative achievements that can be attained in the everyday world. Instead, Calvin's reward will greet him unexpectedly, paradoxically and rambunctiously, bursting upon him through the door nearly each and every day. To experience what is truly wondrous and uplifting inside the autistic spirit—that requires a change of aspect. And in the dynamic of Watterson's richly constructed comic strip, it requires embodiment through a different character. It requires Hobbes.

Hobbes

While the common misperceptions regarding Calvin are produced most egregiously *outside* the strip, the blindness directed towards Hobbes is a showcased feature *of* the strip. Some commentators get caught up in a debate over the nature of Hobbes' two realities, never quite sure whether to ascribe his transformations to magic, imagination or perhaps a technological advancement soon to be unveiled from the toy industry. Watterson himself has never been hesitant in pointing out the futility of such lines of inquiry: Hobbes' paradoxical nature, much like that of particle/wave duality, is simply a question of perspective. The more fruitful line of inquiry would be to ask why the perspectives differ so greatly. What is it that allows Calvin to experience in Hobbes his most intimate and profound companion, while everyone else is left gazing at little more than a propped-up rag?

What the other human characters of the strip share in common is that, unlike Calvin, each has to some degree ceased to struggle against his or her prescribed role, and has come quietly to accept it as a matter of course. Calvin's parents do what most suburban parents do, they work for a living and keep house, while looking forward to vacations that never turn out to be quite as refreshing as hoped for. Miss Wormwood puts forth her lesson plans and quizzes as though she has been doing this by rote for nearly thirty years now. And Rosalyn, she babysits because like all teenagers she simply needs the cash. Even Calvin's first grade classmates have gotten with the plan already: Susie Derkins has plotted out

the entire course of her educational career, all the way through her masters degree, and Moe the bully, he has acquiesced to being, well, the bully, for what else can an oversized, shave-ready, six-year-old boy be expected to do? But we do see glimpses all is not well behind these conventional arrangements, and we begin to suspect Calvin's antics and challenges do more than just exasperate and non-plus—they must also occasionally rub off. For in those rare moments we do get to listen in on the thoughts of the others, alone for just a moment, we are seldom chorused with a set of triumphs and hurrahs. From Miss Wormwood's repetitive chant of "Five more years to retirement," to Susie's gentle "Poop," we seem to hear most noticeably the outlines of a collective human sigh.

I know I am being too heavy-handed here, but still, were it in my ability, I would impress this lesson to be gained from Hobbes' two realities upon the legions now descending upon the autism industry. Doctors, authors, researchers, therapists, evaluators—they arrive with such earnestness, but they also come yoked to the ideas of making a good living and establishing their place, and thus perhaps are a little too amenable to falling in step with the prevailing wisdoms, approved procedures and ingrained attitudes. I grant the ready appeal of all that—Calvin himself after all daydreams of becoming rich and famous—but there is an exacting cost such an acquiescence demands. For it can indeed be sigh producing to find oneself standing in the presence of an entity most deeply profound—though its outward form be orange, striped and fuzzy, or perhaps with a medical label attached—and to be rendered incapable of seeing that form's rich and inner vitality. Calvin enjoys the splendor of Hobbes because Calvin has earned it, earned it through his uncompromising efforts to be that self he truly is.

Drawing proudly upon his animal nature, Hobbes brings to the strip a non-human perspective and palpable relief in the form of a character able to experience a full degree of contentment. Like Calvin, Hobbes too is otherworldly; but whereas Calvin cannot cease from plunging himself into the battles of immediacy and societal friction, Hobbes retains his distance, happy to take a broader and more leisurely look around. You can see the contrast on the rocky, tumbling wagon rides down the slopes of the backyard, Calvin focused on the thrills and chills but Hobbes perched more attentively behind, with one eye open appreciatively for the nature whizzing past and the other cast warily towards the dangers approaching ahead. You can hear the gained wisdom in Hobbes' articulate and ironic capitulations of the lessons learned from Calvin's downfalls, articulate because Hobbes avails himself of the wider context, and ironic because Hobbes

seldom places himself in a position to actually need such knowledge. Hobbes is something of a tourist in this culture, not yet certain the destination was chosen all that propitiously, and his wit can occasionally be biting and superior—see his comments regarding religion, evolution and television. But more often than not Hobbes' passing remarks take on the form of playful reminders, a gentle tugging at humanity's chain. What can possibly be the sum value of all these feverish human affairs compared to the simple delights of a summer afternoon or the tasty joy of a tuna fish sandwich?

Hobbes colors Calvin's world with a palette of joy and pleasure not to be found in the endeavors of human convention. The aimless play of Calvinball, the silly camaraderie of the Get Rid of Slimy Girls club, the splashing horseplay around a fishing hole—there is nothing practical to be gained here, nothing that will improve Calvin's grades, reform his behavior or help him earn a dime. But in Hobbes' presence, Calvin loses much of his sullenness and vexation, and if not quite able to acknowledge it directly or experience it inwardly, Calvin still gains from Hobbes' proximity the hints of rich knowledge and ineffable beauty surrounding us all, unworldly treasure available in abundance to those somehow open to it.

Here is the thing. I have watched my son run back and forth, back and forth in our living room more than half an hour at a time, flapping his arms wildly and laughing in singsong. I have observed him lining up his toys in rigid geometrical patterns that have nothing to do with any human schema. I know that one day I will be unable to nudge him out of his book or away from his computer screen while he memorizes the entire history of space travel or plumbs the nuances of the Petroff's Defense to the seventeenth move. People remind me, and I worry too, that he must also gain experience in the social world, the one packed with so many subtle expectations and seemingly necessary demands. But how am I to help him do that without also crumbling his inner sanctuary or fracturing his creative spirit, or without blinding myself to the fact my son is actually a messenger, a herald from that which speaks most eloquently from the surrounding world.

Not that Hobbes is an easy partner, mind you. He and Calvin are much like two sides of one coin, intimately attached but also irreconcilable, each making no bones about the fact they face in opposite directions. They tussle, they pelt each other with snowballs, they mock and tease. Hobbes dreams of stalking Calvin, pouncing upon him and devouring him, and occasionally nearly carries off this subliminal scheme, while Calvin sets doorway traps and orders mountains of

demerits for his fuzzy friend. Each fulfills the other not through commonality but through a tension-building contrast, and perhaps the most revealing moment in this isometric relationship comes shortly after Calvin employs his multi-faceted cardboard box to transmogrify himself into a copy of Hobbes, and in no time at all the two find themselves bored beyond words. Calvin needs Hobbes' perspective in order to gain a glimpse of reward for his otherwise fruitless efforts, and Hobbes requires Calvin's immediacy to negotiate grounding within the human world—the fodder for his curiosity, commentary and contentment.

Autistic individuals have a multitude of paths open to them. I have seen some so withdrawn from contact with their everyday world there is really no connection at all, and although far be it from me to assess the peace or nightmare such an existence might bring, I cannot help but note how Hobbes mostly just lies around the house and sleeps while Calvin is away at school, and appears to be relieved and boundingly exuberant upon his return. I have observed other autistics who have pushed themselves—or who have been pushed by others—to be exceedingly capable and impressively functional within their careers and day-to-day routines, but as a result carry about them such bitterness and depression over the requirements of their efforts they practically beg the world to shove them away. Here I would note that if somehow Calvin has remained endearing to us throughout all his roguery and gripes, it is just barely so, and one cannot help but wonder how he might fare out from under the umbrella of Hobbes' influence. Autistics who know they are autistic, and can appreciate all that that means, will tell you there is no easy path to follow, no comfortable route to guide them throughout a lifetime. The most meaningful course would appear to be the one most razor thin, passing between the precipices of two enormously engulfing chasms:

The world of the close and immediate. The world of the eternal and beyond. Putting them together has been described as the absolute paradox, the pinnacle of the absurd. I have to think Kierkegaard would have enjoyed *Calvin and Hobbes*, would have recognized something powerful and familiar in its strange combination of character and circumstance. Here again we have a philosopher who was cognizant of the value of the humorous and the comical, and one who also understood that paradoxical existence does not come about in a vacuum, but must be provided with an appropriate and fertile setting—or as Kierkegaard would have named it, the occasion. Such settings do not arise out of customary practice; no recipe or formula is going to bring the occasion into existence. What is needed here is a powerful and enveloping force that can build and nurture from without, while allowing freedom for growth from within. What is needed is an

entity that has the capacity, will and scrupulous care to bring meaning and value where none was expected. What is needed here is—do I really need to say this—the creator.

Watterson

Foreground and background. Setting. Context. These concepts loom large in an autistic's world because its cognitive foundation is built primarily from the outside, there being a shortage of species-aware instincts to help mold from within. Those who would suggest autistics can be guided through their development more successfully—more normally—by honing in exclusively on useful social skills and desired personal behaviors, while shutting out the distractions from the surrounding world, are simply betraying they do not understand what autism is.

Bill Watterson's simple delight in demonstrating the intellectual and emotional power that setting and landscape can deliver forms over the entire history of *Calvin and Hobbes* a pictorial *tour de force*. Here we find dabblings in crippled chroma, negated hue, crashed perspectives, flatland frolicking, doodled drama, cubist flirtation, comic noir, mimeographed mockery and inky rainstorms. This oddball inventiveness with the representational toolkit might lead one to think Watterson lacks respect for his form, until we realize these examples are simply Watterson overflowing with the exuberance of his art. When he is not playfully snatching the reader by the visual collar and drawing his attention to the intellectual jesting and emotional flooding a clever setting can deliver, he is working quietly in the background to provide his characters with envelopment that both shapes and informs.

Many examples might serve to illustrate Watterson's meticulous care towards meaningful setting. I will focus here on one from the early days of the strip, that of May 27, 1986. It is late at night, Calvin has lost Hobbes to a dog during the day, and now kneels alone before his open bedroom window imploring the dark outdoors for aid and understanding. In the panels where Calvin speaks, he retains something of his over-proportioned size and characteristic bombast, but in the third panel, where there is no dialogue, Calvin appears suddenly small and swallowed. His visual world has gone strangely askew: the window extends above the roof line, rafter angles are now oddly aslant and disappear into blackness, the furniture stands arranged all out of perspective, and in the distance through the window is that cold sliver of a back-turned moon. Even the scene's point of view is not conventional—where exactly is the reader standing—and the sight of Calvin appearing suddenly so overmatched and puny in his off-sized, distorted world

forms an eerie and pregnant turnabout. It is only a scene from a comic strip after all, critics might say, but Watterson's eye and hand demonstrate afresh the immense representational power the graphical arts can bring to bear, all the more surprising in an era when the rest of the art world seems to have entirely abandoned the concept.

There is something wry about Watterson's depictions of Calvin as the blood-thirsty, demanding style god, for as the supreme being of his own form of creation, Watterson could hardly have been more kindly and care giving. In addition to breathing independent life into his creatures from the wells of his own wit and angst, and in addition to rendering fertile landscapes in which his title characters could paradoxically romp, Watterson went to tremendous lengths to shield his charges from the ever-present calamities threatening to bring ruin upon them. It could not have been easy maintaining the artistic integrity of *Calvin and Hobbes*—artistic integrity sounds more like a nudge-in-the-ribs joke than a concept with standing in the business world of comic strips. Watterson left an enormous amount of money on the table with his stubborn stands, not only his own share but also that which could accrue to his syndicate and to potential business partners, and Watterson frustrated more than a few editors and the occasional reader with his strange obsessions about form and creative energy. Even fellow comic strip authors seemed to be suggesting that Watterson, unappreciative of his big break, was doing little more than rocking the boat for everyone else. The word *offensive* seems to be lingering in the air here. Watterson is a crank pot. Watterson does not understand how things are done in the real world. Watterson is a raging egotist. At the very least, Watterson is a little . . . odd.

As for me, I really know next to nothing about Bill Watterson the man—his background, personality, etc.—certainly not enough to conjecture whether all that fits in well with my thesis or whether he might regard my ideas as perceptive, insulting or simply bizarre. But I will venture this much with conviction: Watterson single-handedly saved late twentieth-century American literature and art from a nearly complete sterility. Think, for instance, of how simultaneous with the ten-year history of *Calvin and Hobbes*, a mammothly proportioned professional writing community, in a machinelike and methodical grab for the remnants of grant money and tuition dollars, cranked out literally thousands upon thousands of poems, short stories, personal essays, reviews, articles and oh-so-trenchant letters to the editor—with scarcely a single one possessing the verve or depth of a Watterson panel. (The endowment-inspired art community would

appear to have fared little better.) It is a truism of the finest of all forms of art, but seems particularly so here in the States, it will blossom the most hauntingly in the most unlikely of places: Thoreau in the woods, Coltrane at the microphone, and now Watterson before the drawing board.

I would like to think autistic perspectives have something to do with such truisms. The familiar, the well trodden, the well *funded*—it seems a shame so many writers, artists, scientists and philosophers now want to hang out in *those* coffee shops, seeing as how the *raison d'être* behind the sciences and humanities has always been to broaden horizons, widen the context, and take us all a little farther away from where we have been and a little closer to where we are going. Autism confronts us with the value of the unconventional; for it is nearly always the unexpected perspective that connects animal and god, powers tragedy and comedy, and enables the sublime to flower where we might least hope to find it—including on the funny pages.

Did Jesus Christ Have Autism?



An Interdisciplinary Evidentiary Analysis into the Psychiatric and Medical Literature Supporting the Hypothesis That Autistic Spectrum Disorder (ASD) Was the Root Cause of a Terrible Cross to Bear

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[**Note from the book's author:** This brief article, which fits as a kind of interlude into the other chapters of *Autistic Symphony*, was of course not written by my hand. In many ways, I wish mightily I could claim it as my work—it seems as though it has always been a cherished dream of mine to storm the bastions of scholarship and research by way of producing something both controversial and stunning in its immediate impact, and indeed it seems as though the present article could very well serve just such a purpose. However, for anyone who knows me well, it will appear immediately obvious I lack the education, training, funds and adequate number of colleagues even to begin to undertake such an effort as is about to be demonstrated here. And as I imagine the reader will soon be able to appreciate for himself, scholarship such as this is always best left in the capable hands of acknowledged experts.

With the kindly permissions of Talkington, et al. (indeed almost at their insistence, once they discovered I had publishable space), I have inserted their article at this point in my volume so as to provide some contrast and relief from what has gone before, and what will soon follow, and also because—although I myself have found their argument somewhat difficult to follow at its more dizzying heights—I am almost certain somewhere inside the following sets of words, there must surely be a significant idea attempting to get out. With profound gratitude to all experts who have ever written learnedly on the complex subject of autism, I present this article to the worthy care of the dear reader, and urge him to take the gist of its thesis as seriously as he can.]

Introduction

For more than two decades now—ever since that fortune-blessed trio of researchers Simon Baron-Cohen, Alan M. Leslie and Uta Frith stumbled into widespread acclaim and local academic success with their research paper introducing the Sally-Anne test and autistic theory of mind deficit¹—the incidence of scholarly articles dealing with the subject of autism has been increasing at an alarming pace.² Of particular interest to the present authors is a subcategory of works in which famous historical figures are openly speculated upon to have been afflicted with some kind of autistic spectrum condition, the smear upon their legacies apparently notwithstanding. In these works, the biographical details and writings of notable men³ such as Isaac Newton, Albert Einstein, Ludwig Wittgenstein and others are treated to a kind of retrospective diagnostic analysis, with emphasis placed upon the documentable traits consistent with the symptoms now commonly associated with autism. Nearly all these studies lead to a similar, mind-numbingly tragic conclusion: the famous person in question is assessed to have been sadly autistic, at least within acceptable margins of error.

The present authors, however, wish to respectfully take issue with the majority of these findings. It is not their tragic conclusion, of course, that is being objected to here; instead it is the methodology used in support of this published research that is being called into question. As noted, the vast preponderance of evidence given for backing findings of autism in historical figures has betrayed an extreme over-reliance upon accurate biographical information and the subject's own written words—material shown time and again within the academic journals of highest repute to be of marginal significance for the purpose of modern scholarship. Any retrospective diagnosis applied to a deceased personality would ideally do a much better job of following the well-established psychiatric guidelines for ana-

lyzing moribund patients, especially as set forth in some of the larger manuals, and any attempt to slap the embarrassing label of autism upon a long-gone historical figure would in nearly every instance be better served by following the best practices procedures as recognized in the standards of necromedical research, including insistence upon an exhumation whenever feasible, in order to dig up the really good dirt.

The essential requirement here, above all else, is of course *expert opinion*—properly cited, authentically credentialed and, space permitting, augmented by a brief discussion vaguely tying the opinion to autism’s well-known triad of impairments: the pronounced difficulties with social interaction, the quantifiable language delays and peculiarities, and the observable tendencies towards obsessive or unusual interests.⁴ It goes without saying that such expert opinion can only be rendered by acknowledged experts—and the more the better. In the exciting, fast-growing, but relatively new discipline of anthropological autism, this requirement calls for a heavy reliance upon one’s own degreed colleagues, chosen from a manageable cohort of those having co-authored at least two major—or perhaps in a pinch, three minor—peer-reviewed articles published within the last ten years in recognized or recognizable psychiatric and medical journals. During an informal review of the previously published material supporting findings of autism in historical figures, the present authors have found the adequate employment of such collegial resources to be woefully lacking.

To rectify this dearth of rigor in the current research, the present authors have resolved themselves to submit an article within the genre worthy of the lofty standards they have just now proposed, an article virtually assured to be filled with the numbers and types of citations editors and referee committees must now come to expect. The authors say *virtually assured* because they have just discovered, somewhat to their collective amazement, that there remains one historical figure as yet unspculated upon for having had autism (at least within the respectable journals), but also blessed with having had far more expert opinion published about him than anyone else, so much so that remaining historical figures seem merely mortal by way of comparison. Admittedly, a good portion of the material written about this man carries about it a type of “mysterious” air that would render it wholly unsuitable for scientific research, but separated from the chaff can still be found some pearls touching upon topics such as healing, introspection, leprosy and the like, making it little more than child’s play to submit this man to a proper psychiatric and medical analysis. Acting with God’s speed⁵ to claim first priority over this virgin find, the authors have scrambled together enough supporting material to pen the present article, and are now prepared to

answer that crucial question set forth at its very beginning: did Jesus Christ have autism?

Difficulties with Social Interaction

An exhaustive research into the existing literature reveals that the biography of Jesus has been written several times—at least four that the present authors are aware of—but despite these numerous attempts at historical revision, the essential fact has remained essentially unaltered that Jesus was nearly always pissing off someone within his immediate vicinity. Reliable first-hand information from the boy's childhood is rather scarce, but at least one source would indicate he was an early burden⁶ to his long-suffering parents, and goes on to relate how the authorities, no doubt prompted by frequent calls from the neighbors, were forced on at least one occasion to make the family pack up and find residence elsewhere.

In another telling incident, the twelve-year-old Jesus is described as having ruined a sumptuous dinner party by wandering off and getting lost, just what one might expect from an overly full child struggling with autism.⁷ Although the boy happened upon a group of wise old elders who might have helped him to find his way back, Jesus uncloaked instead the significant signs of his anti-social nature by arguing directions with them *ad infinitum*, and betrayed his complete and utter obliviousness to the proper forms of lost-and-found behavior by giving out an incorrect name and address for his father, rendering it problematic for his parents to be paged. Indeed, the elders were moved on this occasion to remark upon the boy's "unusual" intelligence, aware no doubt that 75 percent of autistic children are judged to be mentally deficient. When at long last his parents' patience-of-Job efforts to find him were successful, Jesus was heard to further exacerbate the situation by chastising them for having looked in the wrong places, apparently suffering from a false belief that he could still be found in Sally-Anne's basket.

This ungrateful tendency for Jesus to deny his own parents and attempt to have nothing whatsoever to do with them would crop up again from time to time throughout the remainder of his days (usually whenever there were fish or bread baskets at stake), and was extended to treatment of his brothers and sisters as well, and perhaps to other family relations. In one unfortunate tirade, Jesus was actually caught on record expressing his desire to pit brother against brother, father against son, mother against daughter—in effect, trying to divide his entire household against itself, attempting to make everyone else fall down and worship the ground he walked on.⁸ It seems reasonably clear after hearing all these harrowing tales of Jesus' disruptive boyhood behaviors, that during the long, torturous days

of his unruly upbringing, life in the home of Mary and Joseph must have been a living hell.

All might have been forgiven, of course, if upon reaching the age of majority Jesus had been able to hold on to a steady job, found himself a nice apartment somewhere—or at least a clean stable—maybe even married a good Jewish girl or two, and settled down. Alas, these glad tidings could never have come to pass, not with autism looming as a specter on the horizon. As sadly happens all too often in these lands where adult services and long-term care institutions are in all too short supply,⁹ Jesus soon found himself cast out onto the dusty streets of Judea, and between the long stretches of transcendental meditation and perhaps some short mental-and-nervous visits at the local clinic, he began falling in with some of the country's more criminal and swinish elements. At one point he is registered as having joined a gang of river squatters, led by a man named John, reputedly a Southern Baptist by birth. It is conjectured Jesus might have formed there a first friendship or two while sharing a towel amongst the gang's members, but the only authentic and non-pornographic information available to scholars from this critical time period shows that upon the gang leader being framed and executed on a trumped up charge of having made off with a silver platter, Jesus—unable to share his grief by attending the funeral services and burying the dead—chose instead to sink back into his prior existence of complete and utter isolation, suffering devilish bouts of depression and deprivation, and not answering the phone for at least forty days and forty nights.

In the following years, this never-ending saga of Jesus' social misadventures would begin to fill a good book. A small sampling might include such awkward moments as the time Jesus went fishing for his dinner in the middle of a nearby regatta and managed to get a total of twelve competitors tangled up inside his nets, their predicament so dire only one would ever manage to cut himself loose and go on to win the thirty dollar top prize. And then there were the many occasions Jesus got caught red-handed in some kind of transgression or another: not paying his income taxes, sneaking bites of some good Samaritan corn, casting lots on the Sabbath, sewing sackcloth during the reaping season, and culminating finally in that most mortifying police report of them all, the night he was walked in on during the middle of a foot fetish game being played with a woman of, shall we say, loose and unsandaled comportment, and a somewhat oily complexion.

These frequent reoccurrences of public ineptitude are entirely consistent with a diagnosis of autism, as is Jesus' unimaginative and standoffish strategy for avoiding still more episodes of interactive clumsiness—that is to say, his stealthy habit of keeping to himself for tryingly long stretches of time, leaving his com-

panions always to wonder why he would never deign to join them for happy hour, when water could be turned to wine for half price.¹⁰ Near the end of his days, this obsession with solitude would result sadly in Jesus spending so much time alone in a tree-secluded garden at the edge of town (doing Lord knows what) his colleagues would finally have to resort to summoning the local militia to come track him down and haul him back into the real world.

As damaging as any of these episodes might have been to the reputation of a would-be prophet hoping to cut a good figure about town, they were as nothing compared to the incident that took place one dark, foreboding and reasonably sunny afternoon outside a Jerusalem marketplace and delicatessen, which at that time, due to an extended period of hyperinflation and a reasonably sweet interest rate deal, was leasing up some retail space in the back rooms of the main street temple. By all accounts, Jesus had become embroiled there in a banking dispute of some sort, and as is generally known to most psychologists and nearly all checkout line cashiers, autistics can experience great difficulty comprehending the true value and purpose of money, this despite possessing a sometimes exceptional mathematical aptitude, the kind that enables them to accurately carve out pie to over hundreds of place settings. Jesus too was not immune to some befuddlement over a coined phrase, and on this particular day the moneychangers simply could not get through to him that his offer would not be adequate for meeting the goals of the annual rebuild-the-church-in-three-days fund drive,¹¹ and finally were forced to tell him point blank he did not have the talent for shekels. The eruption that then followed would be talked about outside synagogues for years to come, and indeed it was often said of the temple walls themselves they became so embarrassed by the subsequent notoriety they were literally torn up with shame during the weeks that followed. Jesus in effect responded to his short-term fiscal crisis by having a monumental meltdown, one of nearly biblical proportions. This article itself need not go into all the particulars here, and can table the messy details for another day, but it should be noted this was not a tantrum that might have been thrown by just any old human wandering in from the far distant fields, but indeed fits precisely to the profile of an inherently autistic outburst. This can be seen in the reports that Jesus, despite being blinded by rage and overwhelmed with emotion, was still able to engage in a perseverative effort to rearrange all the temple furniture into exactly the same position he had left it during his previous visit to Jerusalem, when he had thrown a similar tizzy fit.¹²

That Jesus was no crowd pleaser is evident also in his story's end. Much has been written about the many political gaffes committed during that final week, miscues that might easily have been avoided if only Jesus had had the prescience

to hire a marketing firm or at least a teacher's aide. Who can forget that hapless election campaign in the race against Barabbas, in which Jesus must have mistakenly assumed he already had the goods in the bag, for there is absolutely no evidence Jesus ever engaged in any last minute campaigning, fundraising or even exit polling, he and his advisors choosing to spend their final, precious prime-time hours enjoying themselves in the theater district, taking in an overly passionate play and a late supper.¹³ Is there any wonder that with the votes being tabulated and just one hundred and forty-four of the tribal precincts having reported, Jesus already found himself buried in a landslide. Still, not even this debacle seems to have cured Jesus of his ingrained political naiveté, for during the long, grueling post-election pre mortem he was given to remark that the voters should be forgiven for not knowing what they were doing, a clear effrontery to that one civics lesson no eighth-grade dropout ever forgets—the majority rules, and therefore by definition cannot be wrong.¹⁴

The unusually extreme degree of Jesus' lifelong social difficulties warrants perhaps one further comment from the present authors, who possessing acknowledged expertise on this very subject, are willing to venture that if a general survey were taken in the general population, asking which historical figure stricken with autism (none of whom were ever destined to be the life of any party) was indeed the most socially hopeless of them all, the present authors are convinced it would have to be *Jesus* who would be named the chosen one.¹⁵

Language Delays and Peculiarities

The present authors are also convinced it would be a cardinal sin—not to mention a dubious rhetorical technique—to underestimate the variety and severity of language difficulties Jesus must have experienced throughout his actuarially brief but otherwise birthday-festive lifetime. First, there is the fundamental question of whether Jesus spoke in Hebrew, Greek or Aramaic, and since scholars to this very day still find themselves fiercely debating the topic, it seems abundantly clear Jesus must have been very difficult to understand. Also, there are the mounds of evidence still being uncovered in the field, where researchers digging deeply into the original and authentic form of Jesus' exact spoken words usually report that his sentences and paragraphs are found to be fractured, gap-filled, jumbled together in just about any which way—patterns entirely consistent with the characteristics of a significant verbal impairment.¹⁶ Finally, one dare not overlook the tantalizingly tempting results arising from that hot new and inconceivably expensive technology known as *Linguistically Interactive Statistical Parameterization*,

Lisp for short, in which such well-known Jesus quotations as “So say you,” and “Man is made in God’s image,” can be given the once over by a powerful super-computer replete with three eighty-something processor and a twenty-five inch flat screen monitor, which doubles nicely as a TV between experiments. Employing this powerful technique during the news hour,¹⁷ the first quotation is shown of course to be a pristine example of pronoun reversal, a speech peculiarity common in the talk of young autistic children, and the second example is more frighteningly revealed as a case of actual *noun* reversal, an impediment so rare and so phonetically hideous its genesis is taken strictly from the more pathetic cases.

Although nearly all of Jesus’ pediatric records were accidentally destroyed at some later date—probably during that ill-advised file cleansing crusade launched by the European Union and farmed out without adequate supervision to a pool of underaged temps—considerable evidence still has come down to us over the years of Jesus’ quantifiable language delays. Today’s researchers, employing sophisticated and painstakingly precise textual analysis, have ascertained that Jesus must have been mute for the entire first decade of his life, because the only book claiming to be *the word* on Jesus’ words contains no Jesus words from this early developmental period. (His persistent humming and high-pitched moaning, however, can be assumed from the spacing of the margins.) When Jesus does manage to speak at the age of adolescence it is recognized by nearly everyone with halfway decent eyesight as a red-letter day, highlighting the rarity of the event, and furthermore those present were said to have been utterly amazed by the boy’s words, quite likely his first ever.

As happens frequently with autistics who have at long last overcome a significant speech delay, rapid catch up can soon follow, and in the case of Jesus *his* rapid catch up seems to have overshot its mark, and splattered all the way past Luke and gone straight on to John, for by the time Jesus had reached adulthood he was talking up a veritable red streak, his words flowing on for page after crimson page, little narrative relief at any turn. This prolix habit of his is entirely consistent with that of latter-day verbal autistics, who are painfully well known to be capable of holding forth at interminable length on any subject sure to be of interest to them, oh boy, but guaranteed to be pretty damned dull for the rest of us—arcane topics such as dinosaur eggs, Star Wars trading cards and the latest vineyard pruning techniques. Indeed, Jesus was widely recognized for having taken perseverative speech to a new height, delivering a mountain of a sermon one torrid afternoon while holding his audience captive under a spell of famishment and thirst, a nearly jaw-dropping calamity in the making until an unseen

and prayer-answering culinary wizard finally whipped up some food and drink out of thin air.¹⁸

Despite having overcome some admittedly grave verbal challenges—and all without the benefit this day of our daily speech therapy—for the most part Jesus still remained baffling and obtuse to anyone coming within earshot of his many rambling words. This was no auditory hallucination, mind you: the present authors, despite having taken out loans for more than a century's worth of combined post-secondary classical education, can confirm they too have been unable to make heads or tails out of anything Jesus might have been trying to say. Perhaps his career would have taken a widely different path had he not shown such favor to that unfashionable literary technique known as the *parable*—which must be Latin for pointless and roundabout story. This inexplicable preference of his goes a long ways towards explaining why Jesus was never published during his lifetime, for what goat-hungry editor was ever going to foist onto his Canaanite readership such wretched plot lines as, tax-gathering centurions render unto Caesar a genetically engineered mustard seed, or, ten uninvited dinner guests pose as anorexic camels in order to corner the lamp oil market. (The bits about the prodigal bridesmaids, however, might have been turned into a good mini-series or a tasty romance.) Add to these the countless coin-denominated word problems that apparently cannot be solved with a four-function calculator, and is there any wonder the disciples were always having to ask for more hints on the quizzes and a little more time before the final. To be fair, it was not just the beloved ones who were suffering from Jesus' stammering ways; he too was their innocent victim. Consider for instance that bitter moment at the very end, when Jesus, certain he was ordering a nice half bottle of some bracing French wine—*le vin à guerre*¹⁹—was actually calling out for plain old vinegar instead, a slip of the tongue far too easily made when stretching out one's vowels and syllables a little more than they were meant to bear.²⁰

As it turns out, however, not every aspect of Jesus' language difficulties worked against him to cross up his overall prospects. Although Jesus was undeniably incomprehensible while attempting to teach his classes or order Chinese takeout, he did have a few scintillating moments of humorous clarity while loosening up the multitudes for the following acts, and perhaps he should have given some serious consideration to headlining for the Hebron nightclub scene. As is not uncommon among autistics who have learned how to speak without the aid of a seeing eye dog, Jesus enjoyed letting down his hair with puns, riddles, double entendres and just a good verbal twist with lemon now and then. Two particularly clever examples from his warm-up bit might include, "Blessed are those who

are dirt poor, for they shall inherit the earth,” and, “Rid yourself of all possessions, or the devil take you.” These examples demonstrate that Jesus, when sufficiently inspired and worked up by an inebriated audience, had an incredibly dexterous facility for whittling almost any vaguely recognizable phrase into an ironic, multi-layered, self-referencing play on words—a handy talent the present authors have often wished *they* possessed.

Obsessive and Unusual Interests

A common feature of autism is a tendency for the poor soul to display an overly obsessive focus on inanimate objects and meaningless activities—such as ceiling fans,²¹ light switches and learning nuclear physics—and all this to the exclusion of more socially appropriate interests and goals—such as chocolate desserts, late-model luxury cars and getting into the best fraternity. Although the present authors have been unable to uncover any evidence that Jesus was fixated on ceiling fans,²² light switches or nuclear physics—and this despite having researched the matter thoroughly with some Shriners at the local pub—it has been suggested to them by a panicking literary agent that Jesus might be described as having engaged in *other* repetitive interests that *could* qualify, perhaps with a wink, nod and a few bucks slipped to the reviewers, as obsessions.

Water, for instance, as simple as it looks in the glass, seems to have held an unusual fascination for Jesus. This may have started one humid and august afternoon when Jesus waded into the River Jordan looking for some relief, and had so much of his childhood grime washed off him at that one moment, he was buoyed straight up out of the water and came down to make a big splash. This must have been a great giddy joy to Jesus, for when he realized the water park was open only on Sundays, he began spending the remainder of his week holed up inside a cavernous laboratory near the sea, trying out his hand at liquid alchemy and fluid mechanics. His bubbly experiments with the periodic table proved to be mostly a failure, in large part because the cruddy old beakers Jesus was using to hold his new concoctions kept bursting upon being filled. But the aquatic engineering efforts nearly paid off, for they resulted in Jesus perfecting a kind of swimming technique which allowed him to glide effortlessly over a pool’s surface, not having to kick his feet or flap his arms any more than is customary for a spastic autistic. If only the Olympic Games were not still being held at Athens during those days, if only they might have been bid out to a venue that could have provided a better home field advantage—say the West Bank or Salt Lake City—Jesus might have found himself enjoying an easy walkover in the fifty fathom freestyle.²³

H₂O was not the only thing on Jesus' brain during his adult years: autistics are well known to switch around their interests from time to time, and Jesus too passed through a series of stages in which he became deeply engrossed in a revolving set of esoteric avocations—diversions such as fig tree husbandry, the latest in sheep's clothing, and several inapplicable forays into ancient Hebrew law.²⁴ The one hobby, however, that seems to have grabbed his attention the most as he began to near retirement age and was finding himself facing an eternity of time on his hands, was medicine. Not proper medicine, of course, not the type of professional practice several of the present authors have built up through frequent late night cramming, an unproven gurney racing incident during residency, and finally the requisite junior partnerships spent mostly on a golf course sucking up to senior partners—no, this was Jesus as amateur stethoscope-for-hire, a set of ten filthy fingernails poking themselves into just about anybody sporting a scab and pleading for divine intervention. Such unlicensed doctoring, had there been more oversight in place and a few more snitches afoot in the promised land, should have gotten Jesus hauled up before the Nazarene medical board for a contentious disciplinary hearing, or at least a stern talking to before free drinks at the open bar.

This compulsion to render treatment seems to have started humbly enough for Jesus, with a simple laying on of hands here and there, which indeed almost any anesthesiologist can admit to having tried at least once when no nurse was looking. But once having tasted the admittedly heady power of playing God, Jesus just could not let go the idea of pretending²⁵ to be a physician, and this without the benefit of rapacious billing practices. Indeed, before any poor devil of a psychiatrist could cry out malpractice, Jesus was casting out mental health demons without prescribing a single overpriced little green pill, setting off a severe recession, depression and just a general down feeling in the Middle Eastern pharmaceutical industry. Next there were the episodes of helping the lame to walk without the aid of chrome-rimmed wheelchairs, the blind to see without the help of wire-rimmed bifocals, and the deaf to hear without the benefit of thorn-rimmed hearing aids—all knocking out the crutches from beneath the local medical supply services. Finally, Jesus started subtracting insult from injury by raising the dead themselves, sending both coroners and undertakers scurrying for the unemployment lines and removing from medical practitioners everywhere the only known effective treatment for handling their more cantankerous patients. You want to speak of a divine injustice? Well, let's be blunt here. The playing field was medically unlevelled, not made straight, set unsmooth when Jesus brought his tongue depressors to town. Real doctors, as well as the actors who

play them in the movies, are obliged to take an impressive if somewhat in vain oath that first and foremost they will do no harm. But Jesus, not at risk for losing any privileges at the Mount Sinai Country Club (well, thank God for that), was never under any such restraint. Autistically focused and hell-bent on redemption, Jesus could devote all his time, energy and attention to those struggling to gain a more healthy understanding of themselves, utterly oblivious to how much he was making everyone else to suffer.²⁶

Conclusion

The present authors, having taken at least a cursory glance at all peer-reviewed articles produced by means of an Internet search performed on June 6, 2006, and filtered by means of the keywords “Christ+autism+disability+burden+tragedy,” have reached the unanimous and infallible conclusion that the man once known as Jesus of Nazareth, sometimes also as Jesus of Galilee, sometimes also as the Messiah, sometimes finally as Jesus the Christ (ambiguous self-identity is another well-known symptom of autism²⁷), did indeed suffer the debilitating consequences of a form of autistic spectrum disorder, sometimes known as ASD. Were it not for some unfortunate and slightly annoying editorial space limitations, the authors would be happy to provide abundantly more evidence backing their claim. Nonetheless, adequate support has been provided in this article for all the basic diagnostic criteria in the case of Jesus—the social awkwardness, the language difficulties, the obsessive interests, and not to mention, a sickening disregard for the medical profession. These characteristics have been thoroughly documented here and matched to all the appropriate citations, meeting the strict and demanding standards of modern academic research, and thus it is with clear conscience the authors can now wash their hands of any lingering scholarly uncertainty towards this character named Jesus—he was definitely autistic.

As united as the present authors are in their firm conviction that the tragedies described in the New Testament can be traced to the neurological abnormalities underlying autism, the authors admit to being a good deal less certain about the exact form and degree of this diagnosis, with 57.1% of the authors concluding Jesus experienced the symptoms consistent with a designation of Asperger syndrome, 28.6% opting for a diagnosis of high-functioning autism (HFA), and one author (14.3%) holding out for a finding of full-blown Autistic Disorder accompanied by Tourette syndrome and a leaky gut—conditions induced no doubt by the effects of mercury poisoning.²⁸ Because of the continuing uncertainty and

budding academic acrimony in this critical area of research, the authors are calling for further in-depth studies and increased governmental funding.²⁹

On one final note, the authors would be remiss in not pointing out what a pity it was Jesus lived at the time he did and not in the modern age. Our medical and psychiatric understanding of autism has advanced greatly in recent years; we are armed now with a plethora of diagnostic tools, effective medications and interventive techniques. Applied early, often and professionally—and covered in most instances by group insurance plans or state aid—these strategies have often proved nearly miraculous in their ability to deliver great gains to those associated with this terrible affliction. The authors cannot help but reflect in the sad case of Jesus on what might have been had he and his family had access to the wonders of modern medical science. For instance, instead of relying upon schizophrenic tendencies to hear voices and see visions, a Mary with the aid of today's prenatal technologies could have been provided with a comprehensive genetic analysis, alerting both her and her husband to the dangers ahead and providing each with a more informed choice on how best to continue.³⁰ If during the flight into Egypt, the holy family had happened upon a network of pediatricians and developmental specialists, all trained in and alert to the early signs of infantile autism, there would have been no need to wait until the troubling appearances of confused speech and argumentative behaviors before starting the baby Jesus on a regimen of Ritalin and other psychotropic medication. Finally, although still controversial in some drawn-out quarters, applied behavioral analysis (ABA) almost certainly would have been therapeutic in the case of the young Jesus, its firm and repetitive discipline helpful for driving out the rebelliousness and delusions of grandeur, making it more likely the young man would have remained satisfied with his vocational training in woodworking, thereby enabling him to lead a more productive adult life.³¹

In any case, the tragic story of Jesus serves as both a medical and societal warning that autism remains onerous not just to the individual directly affected, the dangers of this disorder can have woeful consequences for us all. The angelic facial features and youthful expressions some autistics evince,³² combined with the occasionally deceptive charm of their odd mannerisms and quirky speech, far too often can draw in the unsuspecting and medically untrained bystander, an easy prey to the trouble lurking just behind the shroud. The present article has attempted to provide thorough and convincing evidence that the diagnosis of autism in Jesus should have been obvious to anyone within a stone's throw of him. Nonetheless, the authors must dutifully conclude their report with a chilling reminder. It was only the accurate thinking of the scholars of that day, com-

bined with the swift, decisive action of the Roman and Jewish authorities that in the end opened the eyes of an alarmingly expanding and much-deceived crowd. Only at the last dread hour were the majority of men finally persuaded to see Jesus as he truly was—a man sick with the scourge known as autism. The present authors collectively shudder to think what might have happened in that faraway land and on that fateful day should the crowd have been allowed to persist in its burgeoning folly, and gone on to actually listen to and follow the man.³³

Notes

1. The original paper by Baron-Cohen, et al. is now considered to be too stale to cite directly in last-minute research. However, in a recent retrospective, authors Oldie, Talkington, et al. note it continues to make nearly everyone's top ten list of publications considered most likely to induce a fit of envy. ("The Eighties Turn Twenty"; *Journal of Academic Nostalgia*, Vol. 1, 2000, pp. 80–89.)
2. While engaged in prior work on a related project, authors Scherzo, Witz, et al. have happened upon findings showing that autism is the fastest growing area of academic research in both Europe and North America, with salaries and grants surging at rates significantly greater than the statistical norm. ("Notes for a Dissertation on the Trigonometric Ratios of Shell Spirals in the Bivalve Mollusks"; unpublished.)
3. Although scandalously little page space has been given over to the topic of famous *female* autistics, at the climax of a stream-of-consciousness monologue from a tag-team short story penned by authors Crane, Eusley, et al., a madwoman in the attic does manage to reenact the mental states of Jane Austen, Emily Dickinson, Marie Curie, Ayn Rand and several others. Scandalously, the technique is not taken up again during the remainder of the story. ("Black Death Comes to My Boyfriend Skye"; *Indiana Fictional Review*, Special Collaborative Edition, Winter/Summer 2005/2006.)
4. Mathematicians Dada, Dada Jr., Gausst, Ypres, et al. are the second, third, fifth, seventh and so on, to remark upon the probabilistic anomaly that the most widely cited research paper on the subject of autism was written by a *trio* of researchers, that autism is marked by a *triad* of impairments, and that Jesus was purportedly a member of the *Trinitarian* Church. By argument

reductio ad absurdum, the odds are shown to be really spooky. (“Hat Trick”; *The Prime Number Triennial*, Vol. II, 5/17/1997, pp. 23,131–37,409.)

5. Award-winning scientists Hackings, Witz, et al. illuminate the controversies surrounding Albert Einstein’s placing of a theoretical limit on God’s speed, arguing this boundary is a reflection of Einstein’s own social and cognitive limitations as an alleged autistic, and further pointing out that Einstein’s work could serve as the model demonstration for how autistic scholarship can be both too specialized and too general. (“E Equals an Eccentric Square”; *Handbook of Physical Disabilities, the Metric Edition*, p. 300,000,000 or thereabouts.)
6. Upkeep, Ypres, et al. calculate that the average annual cost for a turn-of-the-calendar Jewish family raising an autistic child, to be two goats, one sheep, four Caesar’s coins and a partridge in a pear tree. Accounting for inflation, this works out to be more than \$75,000 per year in modern currency. (“The Wages of Being Born Without Sin”; *The Journal of Childhood Disease and Finance*, December 2000, pp. 1,000,000+.)
7. Starvin, Kinsington-Erestus, et al. claim that researchers often pass over the dietary impacts on autistic prognosis. Gluten-free, casein-free and calorie-free diets have frequently been shown to be effective in alleviating the more severe symptoms of autism, with only a few minor side effects—such as persistent lethargy—generally noted. (“Take from Us This Day Our Daily Bread”; *The Neurological Gourmet*, Thanksgiving 2005, pp. 1845–1849.)
8. In a down-to-earth etymological analysis by Supine, Scherzo, et al., the word *prostration* is shown to have originated from the ancient Greek terminology for *floortime therapy*. (“Getting Down on Your Knees for Jesus”; *The Rug Annals*, Spring Cleaning Edition, 2002.)
9. According to some ancient maps discovered by Saul, Ypres, et al., the nearest state institution would have been well along the road to Damascus, much too far for an epileptic autistic to travel without succumbing to blinding attacks. (“A Cuckoo’s Nest Too Far”; *Jane’s Cartography & Catalepsy*, April 1997, p. X marks the spot.)
10. In a widely repeated study conducted by Kinsington-Erestus, Kinsington-Erestus, et al., five out of five autistic subjects with known histories of drinking problems were shown to have consumed on average more alcohol than a

control group of non-autistic teetotalers. (“Hmmm”; *Journal of Redundant Research*, Vol. XVIII, January 18, 2000, pp. 18,118–18,118.)

11. During an interview written up by Flushing, Goufaugh, et al., Roberto and Susanna Wrightoff, co-founders of the charitable organization *Autism Speakeasies*, describe their massively successful fund-raising campaigns. “The martini marathons have been the biggest smash so far,” bubbles Susanna. “And the cocktail cotillions too,” spouts Roberto. “By strategically channeling our donations back into the organization and its well-attended events, we have been making significant progress in filling up our reserves, and we fully expect to be showering our gains upon autistic kids sometime within the next decade.” (“The Wrightoffs Speak Cash Flow”; *Town, Country, Society & Bath*, August 2006.)
12. While the search for the hysterical Jesus has occupied many scholars over the years, Renan, Ypres, et al. point out that mass hysteria can be found readily enough at any nearby cloister. (“Get Thee to a Punnery”; *Journal of Bad Humors*, January 2001.)
13. Poets Blyandby, Eusley, et al. celebrate two thousand years of the Holy Grail by re-enacting its last known use in a roundtable villainelle produced spontaneously one evening at a fine Chicago dining establishment. This experimental work contains the refrain still considered by many to be the most representative example yet of early twenty-first century American free verse: *Urp, excuse me*. (“Owed to All of Us”; *Pottery and Poetry Magazine*, November 2002.)
14. In a write-in study conducted by Chad, Goufaugh, et al., a statistically significant number of election campaigns are found to have been won by the party receiving the most votes. (“Hmmm Recounted”; *Journal of the Paradoxically Tautological*, November 7, 2000, pp. 266–271 and 4–5.)
15. Ibid.
16. See, feel and touch the critical review of *Thomas, the Rock Gospel*, by Hoo, Ypres, et al. (“If This Doesn’t Sound Autistic, What Does?”; *Rolling Stones Back Magazine*, September 2003, pp. 1–114.)
17. In another impressively over-the-top study with huge implications, Foxy, Witz, et al. report that detailed CAT-scan imaging reveals that when asked

to concentrate intensely on television news broadcasts, autistics are found to process the anchorwoman's cleavage with entirely different parts of their brain than non-autistics do. ("Well, Look at That"; *Postmodern Perspectives on the New Journalism*, October 1996, pp. 34C–36D.)

18. The paradoxical Jesus is illustrated in perhaps no better way than with his impact on food fetishes, as pointed out in a tasteful article by Child, Kensington-Erestus, et al. Whereas many autistics are known for *consuming* the same food and drink over and over again, Jesus was the first to *become* the same food and drink to be consumed over and over again. ("Do You Want Fries with That Wafer?"; *Journal of Culinary History and Science*, March 2000, pp. over 99 billion served.)
19. The grape for *le vin à guerre* is grown exclusively in the Alsace-Lorraine region, where incidentally *Das Kriegsbier* is no longer produced. Travel authors Boozer, Goufaugh, et al. rate the wine a sour 81 out of 100, a far cry from its heyday during The Thirty Years War. ("The Red Quaff of Courage"; *Wine of Fortune Magazine*, July 1998, pp. 1940–1945.)
20. The original cure-seeking organization Crucify Autism Now (CAN) has chapters remaining in various parts of the world, but Reaper, Talkington, et al. note the organization has mostly been supplanted by newer groups such as Disintegrate Autism Now (DAN), Pulverize Autism Now (PAN) and Massacre Autism Now (MAN), whose methods are felt by many to be more effective and less barbaric. ("Finally! A Solution!"; *Autism Today Yesterday and Hopefully Not Next Week*, February 1998, p. 0.)
21. Andretti, Scherzo, et al. trace the roots of all major religions back to circular sources, including Buddha's wheel of the dharma, Ezekiel's wheel in the sky, and Islam's breath of fresh air into the ancient city of Tyre. ("Spin Out"; *Studies in Autistic Drivers*, May 2001, pp. 33–500.)
22. Idem.
23. Circumstantial evidence has been published suggesting that Jesus' miracles were aided by the use of performance-enhancing drugs, and although these theories have been discredited to some degree by the Shroud of Turin testing negative for anabolic steroids, Juice, Ypres, et al. have pointed out that Jesus might still have been using a masking agent. ("The Great Cover-up"; *Sports*

Medicine Illustrated, Annual Deathsuit Edition, September 1998, pp. 61–73.)

24. Jurisdictional questions still surround the Good Friday trials and continue to engage legal scholars to this very day. Jarndyce, Eusley, et al. have been arguing before various appellate courts that due to his autism, Jesus should have been sentenced by a jury of twelve social workers instead of by the general rabble, and have been seeking damages for Jesus' heirs running into the billions of dollars, just enough to cover the lawyers' fees. ("All Cloaks Go to the Attorneys", *Law Review of the Harvard Correspondence School*, Spring me 2002.)
25. Lack of pretend play is a hallmark feature of autism, as borne out in an explosive Los Alamos study conducted by Patton, Talkington, et al., in which all autistic children presented with a full-scale G. I. Joe rocket grenade launcher were found to have used the object inappropriately in a pacifist manner. "Actually, our results were in doubt for a few scary moments there," recalls the project's lead technician, "because one of the brats figured out how to load the unit with his feces and kept launching all-out assaults on the research team. Fortunately, we were able to have him declared cured and moved to the control group." ("Pretend This", *Journal of Abnormal Psychological Warfare*, March 2003.)
26. Bannister, Witz, et al. theorize that Jesus' Empathy Quotient score of -15 must set an all-time historical low, offset to some degree by his Epiphany Quotient results, which continue to break all known barriers. ("The Miracle Misanthrope"; *Almanac of Autistic Records*, pp. 3–59.4.)
27. "You have to be out of your mind!" is an oft-repeated phrase from the staged debate *Griswold v. Talkington, et al.*, in which one side argues the human self can only be understood by exploring the spatial and temporal environment surrounding the individual, and the other side asserts one would have to be certifiably nuts to go looking outside the boundaries of the human skull. The contest ends with agreement that all the relevant territory has been covered. ("You have to be out of your mind!"; *Autistic Symphony* note, p. nearby.)
28. The dubious claim that childhood vaccines were the source of Jesus' mercury poisoning has been thoroughly refuted in a 2003 CDC report entitled "It Was Something in the Water." Authors Needles, Goufaugh, et al. conclude

that the terrible state of Palestine's health care system during the Roman era would have precluded Jesus and his siblings from receiving any of the recommended inoculations and follow-up boosters. A far more likely source of the mercury poisoning would have been the eating of too much fish.

29. Researchers Talkington, Scherzo, et al. collectively and individually report application for all the relevant health and welfare grants, although most are still awaiting word. ("Requests 1-224-AD-323 through 1-224-AD-834"; submitted through *Spam Grant: Software for the Hungry Scholar*, results and patent pending.)
30. Swab, Kinsington-Erestus, et al. argue that had a prenatal test to detect autism been available at the Bethlehem clinic, it would have held only limited benefit for Mary. As a devout Catholic, she would have been obligated under the papal prohibition against abortion to carry the child to term. For Joseph, on the other hand, genetic analysis would have been a complete godsend, proving once and for all he was not the boy's father and thereby relieving him of the thirty plus year burden of raising an invalid. ("What a Little DNA Can Do for You"; *Genetics Now and Then*, Vol. 2, 2002, pp. 23-46.)
31. That the ABA therapy administered to Jesus on his final day would appear to have produced no measurable impact is taken by Lardvaas, Witz, et al. as convincing evidence for the need to apply such therapies early on in life and with greater regularity. ("A Switch in Time Saves Nine"; *The ABA Weekly Reader*, April 10, 1998, pp. 1-40.)
32. In de Leon, Talkington, et al., the results of a scientifically conducted telephone survey reveal that 34.3% of diagnosed autistics are considered to look younger than their actual age, 51.9% of all Renaissance paintings are said to show Jesus with facial features described as cherubic, and a further 18.8% of such paintings are said to depict Jesus as surrounded by a flock of angels. Additive statistical analysis applied directly to this data proves beyond absolute certainty (with a 5 percent margin of error) that Jesus was indeed autistic. ("Painting by Numbers Don't Lie"; *Statistical Perspectives on Italian Art*, Vol. 10, 1997, pp. K-12.)
33. Amen.

other words—to other humans and even to themselves. That phrase, however, proved over time awkward to use and was sometimes misinterpreted, so Baron-Cohen later coined the word *mindblindness* as an alternative designation for the underlying deficit. Mindblindness is in many ways an effective choice. It captures something fundamental about the condition and also about the challenge developing autistics will face as they begin realizing how other humans are both crucial to their biological well-being and also utterly different in how they perceive the world. As strange as this may sound, autistics effectively mature by attaching themselves to their own species, by learning how to perceive their environment in a manner similar to that of the other *Homo sapiens* they live, play and work with. That process is not easy for autistics; it involves assimilating a broad assortment of techniques associated with species awareness, species imitation, social ranking, aggression, cooperation, sex and so on, a set of behaviors and mutual cohesion forged from the unfathomably slow furnace of evolutionary time and implanted so firmly inside the instincts of neurotypical humans they do not give it a second thought—in fact, it is the *basis* of human thought, the foundation of what we call human mind—and yet all this remains remarkably foreign to autistics. The tremendous struggle autistics must wage to acquire through effort what comes naturally to the others is evidenced by the discomfiting fact that a number of autistics make only limited progress. In effect, those we might describe as being the most severely autistic are those who remain the most detached from their species.

Nonetheless, and perhaps counter to the prevailing wisdom, severe detachment is more the exception than the rule. Our growing awareness of autism's prevalence and its genetic underpinnings makes it clear that most autistics do learn to become part of and to fit into their human surroundings, both in perception and behavior, and this has been quietly taking place for a very long time. Autistic attachment was undoubtedly happening as biologically modern humans were spreading outwards from the African hills and savannahs into Europe, the Middle East, Asia and beyond. It was happening in early settlements along the Euphrates and Tigris rivers, near the banks of the Nile, and at the edges of the Indus and Yellow too. It was taking place across the plains of Sparta and around the bustle of the Athenian agora, and it was most certainly happening under the shadows of the Himalayas and along dusty roads connecting Nazareth and Jerusalem. It was happening within pockets of medieval enclaves and under the ceiling of the Sistine Chapel. It was happening famously in many great European cities—Florence, Vienna, London, Dublin, Copenhagen—and it was happening in the virgin woodlands of the New World, most notably near the shores of solitary

ponds. Autistic attachment has been taking place and continues to take place all around us, and its impact has not been benign. Although we remain uncertain exactly how and when autism first made its appearance within the species man, its thin yet stubborn thread has been stitching a far-reaching pattern into the many corners of our known history, helping shape a stunning transformation we seem only now to be slowly awakening to.

Autistic attachment has been happening also at the great universities: Göttingen, Paris, Edinburgh, Princeton, Cambridge—numerously and significantly at Cambridge—but perhaps not so much nowadays. The great universities were once the enabling centers of mankind’s explosive advancement in spatial and temporal knowledge, a widening gaze into the richness of our universe that found expression in such a myriad of forms—literature, theology, science, mathematics, art, music, philosophy. And like their monastic precursors, the great universities were also the occasional provider of refuge or the lone receptive audience to those few strange souls utterly lost in their dealings with the everyday world, but ironically enough having something of importance to say *about* that world. Alas, it appears to be no longer so. Mostly gone are those days of the disheveled, half-mad hall wanderer, enigma to his colleagues but sudden light to the world. Today’s universities are mostly a business enterprise, the transitory home to paying thousands, and to maintain respectability each institution prides and touts itself on being a foremost center of scholarship and research—legitimate sounding enough, to be sure, but at heart little more than a packaging of safe attitudes and acceptable procedures designed to keep the enterprise from wandering too far off course. Today’s most highly regarded academicians are also the great popularizers, the widely appealing personalities such as Dawkins, Pinker, Diamond and Dennett, those who can mix and match pieces and remainders of the most ancient hypotheses and the latest buzz, sprinkle all with enough spoonfuls of linguistic sugar to help the hard thoughts go down, and deliver finally a plausible-sounding stew of ideas and theories cooked up from seemingly every officially stamped and over-researched ingredient ever stocked by scholarly man, and failing in just that one spice only a few in the know would ever miss—vision. As centers of personal advancement, today’s universities now excel. But as the enablers of *mankind’s* advancement—well, that has mostly moved on.

Professor Simon Baron-Cohen is indeed today the most prominent face behind autism research and scholarship, but his is not the face of autism—far from it. In perhaps one of the greater ironies of modern academic science, Dr. Baron-Cohen more accurately reflects and represents autism’s inverse image. With his research, writings and theorizing drawing deeply upon the foundations

of scientific and other world-altering revolutions, and with his prominence and appointments placing him in close contact with nearly every known experimental fact and genetic detail regarding the subject of autism, Baron-Cohen stands within the swirling center of an array of forces coalescing into a major key for comprehending mankind's amazing transformational history—in fact, he practically *holds* that key—and yet he does not see it. Perhaps distracted by the politics and prestige that now attach to modern scholarship and academic office, and certainly overwhelmed inside his flood of charts, graphs and endless statistics that serve as today's only acceptable currency for backing theories on the nature of autistic thought, Baron-Cohen fails to apprehend that his truly ingenious Sally-Anne test speaks volumes about *non*-autistic cognition as well. Non-autistics experience a condition I would label as *worldblindness*, an innate difficulty at stepping far enough outside of personal, species-driven mind to see clearly the forces creating, shaping and enveloping that mind. Much like mindblindness, worldblindness too is a condition that can be compensated for and overcome, and *has* been overcome in large degree by mankind as a whole. But here too the tremendous struggle involved is evidenced by the fact many individuals make only limited progress. In effect, those we might describe as being the most severely *non*-autistic are those who remain the most detached from their surrounding world.

Of course, I realize to many this must all sound like the ravings of a half-mad hall wanderer. While it is true that all generations have found the broader, more daring visions easier to explore in hindsight than in the current moment, in this era and in this culture we seem to have developed some particularly crippling ways to remain trapped inside our immediacy. The academic institutions have now bogged down from the same dogmatic and pecuniary-inspired tendencies as befelled their ancestor, the medieval church. The less sheltered world of the everyday man, recipient of late of so many material benefits and life-increasing forces, seems to show little interest in employing the dividends from those benefits to explore the nature of their source, and thus has settled into the dubious comfort of an uninspired obesity. We celebrate our glory as man without recalling that a mere moment ago on the cosmological scale there was no glory at all, and we honor the supposedly unique qualities of our human brain as though wisdom is to be plumbed from a mass of neurons. As has happened so many times in our past, we remain reluctant to go outside ourselves, hesitant to look beyond what we think we already know, and thus it is we remain so agreeably content inside our tenures and our comfortably appointed offices, and offer up as *fresh* knowledge the burgeoning awareness of a modular, experimentally probeable,

statistically averaged *Homo sapien* mind—an offer which indeed is human, all too human.



In taking a careful look around us, we see first that the rewards of science, technology and mathematics now thoroughly dominate our human landscape. The cascade of knowledge we have gained regarding our physical world has allowed us to blast a path far beyond the conquest of such immediate needs as food, shelter, warmth and health, and has opened to us banquets of materiality and realms of understanding so vast as to be dizzying. Thus we might be forgiven for so easily forgetting how greatly different our image of the physical world was just a few hundred—not to mention a few thousand—years ago. How today can we accurately recall, how are we to truly see, that our not-so-distant forebears once woke to a sun circling a course around them, slept under stars churning on nearby, intricate spheres, and touched with their hands the fallout constituents of earth, water, air and fire? As quaint as those notions must sound to us now, they were brilliant perceptions compared to the viewpoints of more ancient times. It would be nearly impossible to depict the natural world as it must have appeared through the eyes of Cro-Magnon humans, for instance, although if we could form a guess as to the nature of the gaze of the apes, chimpanzees and bonobos, we would have a fairly close estimate.

Human history—extremely *recent* human history by the cosmological scale—has been the kaleidoscopic drama of man continuously augmenting and re-arranging the internal image of his external world, with the pace of this transformation accelerating of late to the point of breathlessness. Those scientists prone to marvel over the supposedly specialized skills of the human brain, intimating that the core power of our cognitive abilities has been within us almost all along, are surely betraying a particularly poor sense of the flow and reach of time. Nearly all the mathematical, scientific and logical gains we humans are apt to attribute to our pragmatic, modular minds have been the by-products of just the last several generations. By contrast, that filled-with-potential *Homo sapien* brain of just a few thousand years ago, despite being physically constructed exactly like our own, had nary a clue. Thus it is I would like to suggest science and mathematics are best described not as the story of mankind using its prodigious mental skills to discover and explain the nature of the external world. Far better is to reserve the names of those disciplines for the evidence that the external world has been thrusting its structure and form back upon us, with each delivery building

ever more rapidly upon foundations previously sent. The only marvel here is the unusual nature of the delivery mechanism.

Consider what we know of the lives of those individuals who have most opened our eyes to the compelling visions of science and mathematics—individuals such as Archimedes, Da Vinci, Newton, Gauss, Darwin, Edison, Einstein and Turing. This is not an ordinary collection of men, and I do not mean that in the sense they are extraordinary by virtue of their achievements or discoveries. This collection is remarkable in that it is composed almost universally of individuals who have held an uneasy attachment to their fellow humanity. Here we find dreamers, late talkers, loners, grumps, misfits, obsessives, social gaffers and the occasional pariah to country and neighbor. What we do not find is the colleague who will give you the hearty hail down the hallway and buttonhole you in undertones about what you thought of the dean's behavior at the previous night's cocktail party. No, almost to a man they are nothing like that. These men thought differently—literally thought differently—than the majority of their contemporaries, and it is this strangeness of perception that accounts for both their ongoing awkwardness with their fellow man and their powerful receptiveness to the previously unseen form and structure of the natural world.

I realize we have not customarily regarded scientific genius in quite this fashion. Even those able to recognize the quiriness and the social fallibilities that often accompany our mathematical and scientific giants are apt to attribute such characteristics to the pressures and conditions of genius itself, never pausing to consider whether this might be a confusion of cause and effect. And as for the broader community, the confusion there tends to run much deeper, for in that shifting arena genius is mostly a matter of acclamation, the need to crown the man more than the inspiration. Consider, for instance, that undisputed scientific icon of the twentieth century, Albert Einstein, mostly unknown and sometimes scoffed at during the years of his best work, but today universally proclaimed the foremost scientific mind of the modern era because—well, because everyone says so, it is acknowledged by all. Acknowledged by all. Such a revealing phrase considering that the all knows next to nothing about relativity or the photoelectric effect or Brownian motion, with even many of today's most capable physicists—relying more so upon mathematical models, textbook analogies and chalkboard explanations—able to perceive little from Einstein's original, childlike visions into time, space, matter and energy.

Even on those rare occasions the masses do place more emphasis on the discovery than on the discoverer, this would seem to be motivated by the discovery's ability to at least temporarily flatter us, perhaps never more so than with that

other great twentieth century icon, the computerized machine. So alluring has this concept been as an explanation for human intelligence that today's cognitive and neuroscientists have nearly trampled themselves in the mad rush to apply its wired mechanics to the workings of our own supposedly prodigious biochemical minds, and in their haste somehow overlooking the fact that in the workings of Turing's superbly simple model, the intelligence is on the tape.

Of course, to bring up the names and lives of individuals such as Einstein, Turing and all the rest seems as quaint today as talk of celestial spheres and the four classical elements. Science and its related disciplines have become in this culture so legitimatised, so prestigious and so dominant they are no longer the realms for paradoxical inspiration within the solitary individual—they are instead the employment for millions. Ever-larger teams of researchers now generate the vast majority of our new discoveries, with the immense volume of their published work compensated for only by its inexorable drive towards minutia. It seems as though we are no longer making ourselves receptive to the nature of the external world so much as we are competing to announce its leftover nooks and crannies. Successful scientific and mathematical research these days is measured by its ability to generate fresh headlines and win the additional grants. We find ourselves fighting for remnants of a scientific glory as though we do not recognize crowd-*edness* has mostly destroyed that glory, and out of vague fears we might now be treading the byways of the irrelevant, we find ourselves insisting ever more stridently, ever more dogmatically, on the sole priority of scientific method. But this is just another form of blindness, a form of worldblindness. All endeavors, even those scientific and mathematical, will degenerate without the influx of broader, more revolutionary vision. In the flush of our current technological successes we have been ignoring this inevitability, far too willing these days to rest content upon the laurels of our numerous proofs and our well-funded experiments, evidence we take as conclusive for the progressive nature of a scientific, logical and mathematical mind—a theory which indeed is human, all too human.

The two disciplines of science and philosophy would appear these days to be so distinct from each other one might hardly suspect they must have originated from the same upwards gaze. But picture those humans who were the first to receive the vague impressions of pattern and repetition from the lights of the surrounding sky, and ask yourself what might have compelled them to break their solitude and attempt to convey to the others the impact of those impressions. From what history has left to us from the earliest known philosophers—who of

course came along much much later—we find them still as equally struck and awed by the nature of stars, number and substance as they were about the nature of themselves. This concentration that runs outwards through the expanses of time and space, here is where we can find the beginnings of astronomy, mathematics, chemistry and all the other sciences. And it is from the reversed direction of that gaze, the intense gathering of such abundance into the singularity of a particular *point* in time and space—the singularity of the individual—here is where we can find the origins of philosophy.

Or can we? I am aware I must be attempting a kind of literary *trompe l'oeil* with such a description, for a survey of the philosophy as we might learn it today in our schools would reveal nothing of the subject I have attempted to picture here. Blessed with the benefit of perfect hindsight, we know full well today the value that would arise out of those first skyward stares, so it cannot really surprise us to realize that when man would finally forge the languaged means to diffuse communally the strange new concepts, he would not long afterwards cast thought and knowledge themselves as subjects worthy of mastery, control and pay. From the sophists of ancient Greece all the way through today's government-funded think tanks and well-endowed professorial chairs, we see the abundant evidence that this alternative, more businesslike approach to the study of human thought has been continuously upstaging and usurping the original. Today it seems we can no longer afford to remain content with mere experience and impression alone. Today we must consult the system, follow all the processes, navigate the mirrored intricacies of synthesis and analysis, and above all else we must repeat as often as possible the ever-multiplying layers of classification upon classification—the innumerable slices, dices and reconstitutions marketable to almost any purpose, the very reason itself behind mankind's arbitrary division of its endeavors into such a motley assortment of seemingly separate disciplines. So cataloged, so multivariate has our knowledge base become today it is now the larcenous target of a sleek new breed of philosopher, the kind who can step forth onto our world-historical stage and proclaim all words and concepts so overripe with meaning they might just as well be assigned a random meaning, and then proceed to make a prolific and profitable career out of doing precisely that.

Am I sounding a little too peevish? By no means do I intend to ridicule what has been truly valuable from this long, much-honored and very worldly branch of philosophical tradition. It has served tremendous and constructive purpose inside cultures that might hardly have been expected to know much better, and it has prompted breathtakingly brilliant assemblies from many of our history's most talented intellectual giants. Where might we be after all without Aristotle's massive

reorganizations, Descartes' cool rationalities, or Kant's thorough critiques? No, I would not for the life of me speak out against what has proven best about this fine tradition, but sometimes much oppressed under the weight of what has been *not* so fine about it, I wish to ask but one simple question. Whatever happened to those first individuals, the ones with their eyes transfixed on what we now call the heavens?

Consider that line of thinkers we might best represent with the names Socrates, Thoreau, Kierkegaard, Nietzsche and Wittgenstein. Here again we find a surprisingly consistent and barely species-attached collection of men, for in addition to the designations applied to the prior list of scientists and mathematicians, we can now add those of madman, idler, blasphemer and corrupter of youth. These are men who often felt compelled to live apart—even made *experiments* out of living apart—and their combined histories of failed engagement proposals and one bitter marriage might serve as testimony enough to their inherent social awkwardness. By the customary standards that hold sway within human society—wealth, friendship, community, lineage—these individuals could in no way be described as successful, even their now famous words having produced little of impact during the course of their lifetimes, unless of course we wish to count that one case where they earned a sentence of death. And it must strike us as somewhat puzzling now that such words have indeed become famous, for the utterances from *this* breed of philosophers are nothing like those of the respectable academician, or even the worldly wise old man. Instead we find here an odd assortment of loosely organized aphorisms, fanciful flights, cryptic remarks, bombastic pronouncements and highly defensive barbs—more like the stutterings of an adolescent in the grip of some kind of language impairment, or perhaps more like the breathless stammerings of a child who has just run in from the far distant field and cannot pull himself together quickly enough to describe what he has just seen. From the quietly desperate perspective of our day-to-day—too busy now to get to know ourselves well, and too exhausted to attempt to leap *über Mensch*—it would seem there is scarcely time enough or reason enough to heed the words of those least capable of seeing and toiling as the rest of us do. So why is it that we can still find ourselves so transfixed, transfixed now on the stutterings and stammerings that strike us, like once did the stars, as both bewildering and beguiling?

Of course, my literary deception must surely be going too far to suggest the persisting impact of rogue thinkers in the likes of Socrates and Wittgenstein. Philosophy today has settled in to being far too worthy and far too dignified a profession to tolerate still more of that kind of thing. The current tradition is safely guarded, tucked away now under the mindful care of those most thoroughly

schooling in its most practicable arts. Do you not believe me? Ask any graduate student, the ones chasing their degree and eager for the most sought-after positions in the academic world: of utmost importance these days is to align yourself with the prevailing camp, the most recently published book and the latest reigning ism, and God help you should you find yourself on the outside looking in, just one poor soul left to fend for one's own self, no suitable letters of recommendation firmly in hand. Perhaps not quite as touched these days by the mass popularity science and technology currently enjoy, philosophy compensates by building for itself an exclusive and posh neighborhood, topped off with ivory tower and fenced in by a seemingly endless array of dense sentences and jargon-strewn paragraphs—bewildering yes, but beguiling to absolutely no one. All this is just another form of blindness, justification for worldblindness. In truth, we are deluded to regard the finest in human thought as something hidden or overly complex or accessible only to the greater intellect, the highest cognitive bidder. What is finest in human thought exists all around us, lives and grows within an environment we have all helped to build, that we all share. Those who would most loudly proclaim the superiority of the most superior thinking animal are only desperate to claim that top billing for themselves, and thus it is that despite our rapidly expanding cognitive awareness we find ourselves still overlooking what exists right before our very eyes, lost inside the reveries that exalt the virtues of an ethically noble, linguistically complex and oh-so-thoughtful mind—an idea which indeed is human, all too human.

All hail the artist, for the artist widens a path for us all. The earliest stargazers—their halting gestures too strange and foreign, their motives too vague and suspect—would not by themselves have been persuasive enough to urge the huddled bands of kinsmen into a broader acceptance of previously unseen worlds. What was needed here were the magical and enticing tones of a Pied Piper's flute, the inducements towards the first steps of a long, snaking and rhythmic dance that would pull each generation ever more teasingly, ever more inexorably away from an animal existence until then so deeply and forever known. By no mere coincidence, as humans would begin forging the languaged means to diffuse communally the strange new concepts, they would begin also strewing their expanding paths with beads, cave paintings, grave markers, drums and chant. This incense-sweet smoldering accompanying the transformation of the world's eternal structure into forms immediately pleasurable to see, hear and hold would inevitably grow one day into a fire too intense to be contained any longer. We

should not forget that the Greeks were set ablaze first and foremost by the sung words of a wandering poet, his listeners' ears made at last too full with the vividness of flaming towers, seething jealousies and rosy-fingered dawns. Not just the sciences and philosophy alone were seen now more clearly in that glowing light—music too, architecture, history, drama, sculpture, and of course, poetry itself. Those classical flames feeding upon themselves would eventually burn themselves out, but on their ash heaps we blaze today yet once again, the current conflagration now five hundred years into its torrid running, with nearly every corner of our massive planet now seared and charred. Every direction we turn: stories, instruments, gardens, games, costumes, symphonies, skyscrapers, tapestries, dance, jewelry, bell towers, cuisine, fountains and song. And these are not the playthings of just the select few, they are the beckoning signposts suggesting a direction forward to us all. That for nearly every human alive today the memories of animal existence appear to be so remote—despite being so remarkably near in actual time—we owe to the charms of the artist as much as to anything else.

Spreading flames, however, carry inherent danger. Although the origins of art have always been inspired and revolutionary, the vast majority of art by necessity must remain imitative, fueled by our instinctive gregariousness and behavioral copying. There is nothing to be criticized in this replicating arrangement—its regenerative value is beneficial to everyone, and it provides a means for bridging the long gap between the unique visions of solitary individuals and the common understandings so necessary in a society of many. But art's widespread accessibility and reproducibility also makes it vulnerable to the ravages of envy, pilferage, sewn conflicts and mass confusion, for once the true artist has been hailed by the many, it is only a matter of time before the many will want to be hailed as the true artist.

Today's universities, workshops and other art institutions churn out each year literally thousands upon thousands of new novelists, painters, architects, composers, sculptors, playwrights, critics, designers, and of course, more poets, the finest of these slated to do their greatest work in—the universities, workshops and other art institutions. If today's academic factories were able to be honest with themselves and acknowledge that these mass productions align almost without exception to the imitative aspect from art's long history, then perhaps there would be little harm in these assemblies of assembly lines. But today's academic factories, too hungry for the wherewithal to keep the assembly lines running, are not quite able to be so honest with themselves, and thus continue to market a veneered fiction that their classroom products go forth not only degraded, but also inspired and revolutionary. They do not go forth so inspired, and trust me, having been

one of those classroom products myself, I am uncomfortably well positioned to say. These self-lauding programs designed to perpetuate a self-recognized glory result in exactly the kind of art one might expect from a tinsel-bedecked stamper—excessively self-conscious, focused entirely on style and technique, and ending finally in a veritable stink fest of art for art's sake. For all the countless creative births our academic institutions now offer to serve as midwife to, the barrenness of the results has never been more evident.

For some much needed contrast and relief, let us consider instead a set of *non*-degreed artists: Michelangelo, Blake, Beethoven, Van Gogh, Tolstoy, Dostoyevsky. We need hardly mention we have gathered here yet once again another bad-tempered, standoffish and slightly deranged collection of men—that theme by now is quite recognizable, its dissonant strains more than a little familiar. Artistic temperament has not *always* been something easily feigned and staged by our modern flashes in the pan; a glance through the biographies of men like these reveals them as genuinely frustrated, sullen and vexed—and not just in their artistic endeavors but indeed from straight out of the cradle. Their rudeness is a talent almost too natural, their lack of regard a little too easily gained, and in the brazen opening chords of an heroic Third, across arson-savaged nighttime skies, and throughout that most insolent ceremony of them all, an unholy union of heaven and hell, we discover that the truly inspired artist snubs all form of manner, curses all degree of convention, and introduces the power and beauty from the next world into the home of this one by first crashing down the door. As already stated, the vast majority of a culture's art need not be quite so creative, and therefore not quite so blatantly destructive—art's imitative aspect allows room enough for a broad range of practitioners, providing perhaps mankind's most effective forum for mixing together its diversely productive traits. But at that first setting of the blaze, at the initial spark against the flint, one does not find a cadre of workshop wonders standing about. Artistic fires originate from a source we do not easily recognize and are channeled through individuals we do not at first accurately perceive, the ones who are mistrustful, petulant, sensory overloaded, the ones who have been building a lifetime's capacity to struggle and to struggle well—artists such as Michelangelo, Blake, Beethoven, Van Gogh, Tolstoy, Dostoyevsky.

Of course, now that our palettes are so richly vibrant with fellowships, editorships, associate professorships, now that our trained artists are so well versed in stipends, grants, prizes and offices of the laureate, surely we can write the final chapter on these themes called struggle, and declare all insolent revolution to be a technique gone completely out of style. No, wait—that last sentence does not

quite belong here, does it? The modern artist is exceedingly capable I hear of waxing eloquent and poetic when a most sorrowful song is needed: that is him there at the bursar's window, crooning his meager share of the endowment funding, his crowded place at the public trough, and the barely adequate living conditions at the local college. Is it any wonder a larger community at last turns disgustedly away, content to settle for what might be called some mindless entertainment? Well, that too is a spreading danger, but at least there might still be felt something of the warmth from once-spectacular fires, at least there might still be found strewn about glowing embers waiting to catch and blaze yet once again. Artists who prattle endlessly to one another do not see what they are called to see—they are blind, worldblind. The genuine artist can conjure up images of that same expansive universe as does the philosopher or the scientist, and paint its truth and beauty in shades making it plain for all to see that the direction forward is indeed more desirable than the direction back. The current fashion for self-indulgence has left us wandering aimlessly and tunelessly about, and thus it is that despite art's ubiquitous and burning reach, we find ourselves still too lost beneath the darkening spell of those who would take their craft too lightly and themselves far too seriously, the fame-seeking templates of a talent-enabled, patron-worthy and self-reflecting mind—a creation which indeed is human, all too human.

There is no world but the world, and all can be its prophet. From out of a dream-like biological existence we can no longer quite recall, humans have found themselves suddenly awakened to an expanding awareness of space, time, substance and form, and naturally enough have been experiencing fright and confusion as much as they have awe. As useful as the disciplines such as science, art and philosophy have been in helping mankind come to terms with this fast-unfolding drama, there have always been those who have preferred the more direct approach to grappling with the unknown. As best as we can tell today, man approached early on these strange new phenomena by animating them first with spirit and shape already familiar enough—ancestor and animal, friend and foe—and society began crystallizing its strange new knowledge by relying hard upon custom and ritual, an instinctive choice for a species already bound to the safety of family and neighbor. In our religions today we still carry something of the essence from these earliest attempts to grasp and know, in our inclination to cast our gods in man's image—the father, king and watchmaker—and in our preference to worship by congregation, sanctuary and comfort still to be found in

the greater numbers. Nonetheless, to survey the tattered landscape of our religious history, it would seem such huddled relief has never been able to hold for very long. Forces have always called us back out of ourselves and made us curse what we had once sworn we knew, and always someone has been working remarkably nearby, attempting to pry the human eye open yet a little wider. Rituals unravel, customs finally crumble. And as our deities have become ever more sophisticated, and as our congregations have grown ever more crowded, the world has just kept on unveiling itself anew, its human-beckoning dance growing into an ever-faster, ever-widening gyre, and indeed it must seem as though the center cannot hold.

Spirituality has become today like two sides of one coin, attached but irreconcilable, and we should make no bones about the fact we as a species face in opposite directions. Established religion, conventional thought—they serve a purpose and have their place: they are the counterweight to strained, advancing edges, they provide grounding to those who might otherwise take too recklessly to flight, and in gathering up the mass of men into communities of teeming will, they power a means whereby human progress can be made all the more inclusive. But when from out of willful ignorance convention digs its heels in too deeply, it trips the course of a delicate, intertwining step. And when from out of excessive fear religion glances forever backwards, it drags the species towards a time and place in which there were no gods at all. In branding as heretics, atheists and blasphemers the ones who would dare to look anew and yet a little further on, we fail to see that in a forwards-stepping human dance, it is the role of teeming crowds to be the partner and to follow, and the task of strange, unique and lonesome souls to be the ones who lead.

Let us contemplate yet one final list of men, those we most commonly revere as having brought to us our truer visions of God—Luther, Confucius, the Hebrew prophets, Buddha, Muhammad, Christ. But tell me first, just exactly whom have we come to these deserts to see? Are we seeking here the brightly clad, the fortune blessed, the most powerful leaders who have once walked—and owned—our lands, and were we brought here by way of an assuring word that these indeed were the kind most acknowledged and acclaimed by all? I have heard it said we must seek such attributes someplace else—in gleaming palaces on top of fortified hills, or perhaps in some high-tabled dining halls—for in this list of men being contemplated here I see only the attributes we have already well discussed: social isolation, verbal incomprehension, strange obsessions, and at last, a bitter clashing with the community of men. What worthy religion has been founded yet that did not begin inside the lonesomeness of a cave, or the isolation

of the desert wilderness, or the solitude beneath the peepul tree? Has a sermon ever been heaven blessed that did not at first befuddle—the roiling recitations, analects so cryptic, and these theses nailed to the door? And what humanity-healing balm has yet been crafted not arising from behaviors hard to fathom, from asceticism on a grain of rice to self-coverings of dust and dung? These men were something other than human, I think their compatriots would have been the first to say, but not meaning that in any supernatural sense, but that these men were not quite normal, did not think and act, oh my sapient brother, did not think and act like you and me.

I realize we have not customarily regarded the sacred names in quite this fashion. Perhaps it is because we are forever viewing these men with such perfect hindsight that we continue to see them so poorly. When millions can overflow St. Peter's Square, when the Hajj tents stretch on for mile and mile, when the venerable temples teem from wall to altar wall, what earthly reason might we have to doubt the appeal of messiahs, saviors and prophets, and how can we question the popularity of men so widely hailed and hallowed? What might strike us, however, as we survey this modernly pious planet, is how incredibly little change has taken place from a formerly pious time. For if God were to send representatives again, if the universe beckoned directly, I am certain there would still be many—very many, a majority in fact—who if given this chance would answer that call themselves by bearing witness to a familiar duty. Drawn by the promise of ancient hypotheses and the latest buzz, so many would come to see and hear once more, would follow again from place to rocky place, and if hesitant for just a moment, as though not catching the words quite right, one glance at the size of the burgeoning crowd, just one nod from a trusted authority, would be enough to guide them to their appointed place and there help them stand their ground. Self-assuredly shoulder-to-shoulder, their sanctuary now complete, all could join that enlightened chorus and resume its ancient cry, “Barabbas! Barabbas! Barabbas!”

Of course, I must be committing a blasphemy to claim we have not today learned better. Our colleges are now flush with honored theologians, their learned words bulge our crowded shelves. The pulpits ring with polished instruction, and all is denominationally pure. Assuring family and knowing neighbor fill out the spaces all around us, and everyone can speak the tongue, it seems, of a confident, assembled glory. Still, I wonder what comfort we will take in the days ahead from having recalled and worshipped the resurrected prophets, when it is the stone we are casting at the present saint that is making a martyr of our future. God's representatives *do* dance all around us, the world currently beckons at the

tip of our finger. So much certainty attached to over-gilded faiths, such reliance upon the overflowing coffers, too much prayer directed to declaring war as holy—these are making us forget to build our heaven right here, and thus we are getting stuck in a living hell. That beam is still within our eye, my friend—our worldblind eye. If the sacred texts are to have taught us anything, it is that God does not speak through the gathering crowd, but only through those souls who have learned to bear an awakening both paradoxical and isolating. On this planet, the world is attempting to come to consciousness through the means of our own human biology, and each individual—each potential prophet—has the freedom to assume that duty. In the all-too-common clamoring to receive blessings not yet fairly earned, we have too often ignored these struggling, striving souls, or worse, trampled them underfoot, and thus it is we fail to hear their uplifting words, we lose their saving grace, too numbed by our mumbled, buzzing, repeating words rattling about inside a limited skull, “Oh, Lord, do not forget us at that last dread hour, for we have so many times made answer to you with our pre-anointed, destiny-favored and already godlike mind”—a prayer which indeed is human, all too human.



For more than sixty years—since Leo Kanner and Hans Asperger first described a set of developmental characteristics each would label after the Greek word for “self”—autism’s unveiling and increasingly public visage has not been viewed as a pretty sight. The condition has invoked a profound sense of fear in many, for in addition to its three universally recognized diagnostic symptoms—difficulties with socialization, language delays and peculiarities, and atypically patterned behaviors and interests—autism has also been linked to a long list of unsettling characteristics suggesting inevitable tragedy behind its perceived human impact: muteness, self-injury, mental retardation, severe emotional detachment, required institutionalization. Along with the related disorders of schizophrenia and manic depression, autism has been bringing into prominence the severe burdens anticipated with an abnormal psychology, and has cast into sharper societal focus the immense challenges raised by a mental process ranging far outside the human standard. Furthermore, autism’s specter has been made all the more haunting by the fact it is applied first and foremost to our society’s most cherished members—its children—and by the realization that autism’s discovery has come seemingly just in time for its prevalence to explode suddenly out of control. To read the many alarming accounts and horrifying descriptions being

put forth by politicians and researchers alike, one would have to assume autism is indeed a medical monster set loose upon our land, damaging the brains of infants, destroying the joys of toddlers, stunting the intellects of adolescents, and leaving behind a trail of adult-like shells housing the person who might have been. This looming, growing, grotesque face of autism must surely be the most frightening nightmare now walking the human landscape—the condition’s devastating impact, unquestioned and asserted by so many, seems to have left no room for doubt about that.

In attempting to characterize autism’s underlying cause and pave the way to finding an eradicating cure, scientists have embarked upon a feverish quest for that holy grail most dearly treasured—the elusive, explanatory detail lying at the heart of autism’s puzzling pathology. Embarrassed by a self-serving history of easily debunked notions such as refrigerator mothers and vaccine-induced poisonings, autism researchers these days direct their chase more cranially inwards, into the hunting grounds deemed more safe and acceptable—the organic deficits just waiting to be discovered within the flawed mechanics of the autistic mind. Brain tissue damage. Synaptic breakdowns. Neuronal glitches. Genetic defects. Just one glance through the reams of modern medical literature is more than adequate to reveal a veritable cornucopia of likely candidates behind autism’s dreaded scourge: excessive prenatal testosterone, faulty mirror neurons, too much white matter, too little white matter, insufficient blood in the frontal lobe, low amygdala density, mutant PTEN genes, mutant neuroligin proteins, anomalies on chromosome 2, anomalies on chromosome 4, anomalies on chromosomes 7, 11, 15, 17 and perhaps a dozen others, unregulated glutamate neurotransmissions, some missing Purkinje cells, axons both under- and over-pruned, a way-too-dainty fusiform gyrus, and doubtlessly some further discoveries to be written up next week. It would seem the psychiatric technique of tracing a mental aberration back to a specific biological cause has found its apotheosis in the fertile field of autism, for here we have stumbled upon a one hundred-fold flowering of the technique’s explanatory effect, autism’s complexity now matched perfectly by the many-tentacled nature of its presumed genesis. In effect, modern cognitive science has been overwhelmingly verifying the suspicions we have already had—that autism is indeed the most hellacious disease ever to have cursed our human species—for what other malady could possibly lay claim to having been spawned by so many devilish details.

Nonetheless—and clearly counter to the prevailing wisdom—autism’s mystery will not be solved within the confines of a medical laboratory, its etiology cannot be explained by its most narrowly defined detail. Not our understanding,

or even our *lack* of understanding, of autism's neurobiology compels this contrarian view; rather, it is just one glance through the history of human progress that prompts the second look, urges a stepping back from this hurly-burly of modern medical research. From our not-so-long-ago struggles as foragers on the African plains to our more recent adventures as Big Bang photographers and genetic code breakers, we as *Homo sapiens* have been transforming ourselves and transforming our planet not by digging ever more deeply into the details of immediate biological need—a clinging to what we as a species have already known. On the contrary, we have built up our intelligence, awakened our consciousness, recast our entire world by opening the human gaze ever wider—farther into space, deeper into time, always beyond the immediacy of our former selves. It has been so in our religions, where hunger for the unknown has driven a progression from spirited animation of rocks and trees to an awareness of the cosmic forces shaping our lives and suffusing our world. It has been so in the practice of our arts, where joy with surrounding form has inspired a re-creating brilliance, from cave wall hunts to the music of noble tragedies and divine comedies. It has been so in the maturing of our philosophies, where awe with the abundance passing through each individual has forged an increasingly honest attempt to know ourselves and describe our place. And it has been so in our sciences, where reaches throughout the expanding realms of space, time, matter and energy have brought us to the very edge of paradoxical self-knowledge. We have been busy these last fifty thousand years, busily engaged in broadening our horizons, expanding our context, for it has always been the *widening* of our understanding—not a *narrowing in*—that has been the hallmark feature of a stunning transformation we seem only now to be slowly awakening to.

It has been so also in our study of human psychology, where a desire to grasp the essence of mindful experience has inspired cognitive modeling both elegant and sublime—but perhaps not so much nowadays. As one of the newer sciences in name but certainly one of the oldest in practice, psychology stands at the intriguing crossroads of human experience, at the place where the enormity of the world's substance and structure meets the immediacy of the living creature. This confluence of all and now, object and subject, world and self has piqued the imaginative, constructive efforts of many blazing pioneers—Freud, James, Rogers, Jung, and again that devil Wittgenstein—men who themselves may have struggled with their own individual, social and celestial experience, but ironically enough had something of importance to say *about* that experience. Alas, it appears to be no longer so. Today the fields of psychology and psychiatry are mostly a business enterprise, their human impact measured out in terms of ses-

sions, hourly rates and prescribed pills, and to keep these splintering disciplines from sounding too much market driven, all are backed increasingly by ever more extravagant scholarship and research, useful sounding enough to be sure, but at heart little more than a subtle propaganda that only the tools and techniques of modern medical science—MRIs, microarrays, Ritalin—can cure the ills of the human condition. Today's most highly regarded psychiatric researchers are also the great gatherers, the ones who can mix and match ever larger teams of junior assistants, ply them with the latest theory and the most impressive pieces of equipment, sprinkle all with enough grant funding to help the long hours go down, and deliver finally a plausible-sounding catalog of factors and treatments stitched together from seemingly every officially stamped and over-centrifuged idea ever concocted by medical man, and failing in just that one approach only those with the condition might one day miss—a broader vision. As a means for gainful employment and an opportunity to play with the most expensive toys, the specialized fields of human psychology now greatly excel. But as a source for understanding just *who we are* and what we might *one day be*—well, that has mostly moved on.

The current face of autism is indeed a gruesome sight, but only because of the way we have chosen to see it. In one of the greater ironies of human judgment, we have been measuring the souls and capacities of autistic individuals against yardsticks of human normalcy, without recognizing that upon this planet we as a species have turned so astoundingly abnormal ourselves. We are now aloof strangers to our former animal selves, we speak abstract, expanding languages incomprehensible to any other beast, and we persevere in many unusual, world-altering behaviors—some subtle, some grand—all running counter to the expectations of our own biology and to the course of millions of years of evolutionary prelude. The traits of autism echo in the spaces all around us—in our books, our machines, our behaviors, our lives. The traits of autism echo throughout our known history, in the work and biographies of so many catalyzing individuals, the ones we have occasionally accepted, revered and understood in retrospect, but have nearly always shunned, reviled and *misunderstood* in their blazing moment. That shunning, reviling and misunderstanding—it is now being applied to the autistic population as a whole, for in our psychiatric will to blindness we are being badly misinformed. The majority of autistic individuals are *not* mute, they do *not* self-harm, they are *not* mentally deficient, they are *not* emotionally detached, and they most certainly are *not* in need of institutionalization, the prevailing wisdom clamor all it will. The majority of autistic individuals live quietly and productively among us, and they always have. Struggling through the diffi-

culties of difference, and attaching themselves—some more, some less—to a species they do not easily recognize, autistics have changed the course of human existence by opening to it a strange new vision, one extending far beyond our biological selves and transcending our limited past. Only blindness could make of autism nothing but disorder and disease. On this fast-transforming planet, for this quickly turning species, autism would be much better linked to something more like the voice of God.

Of course, I realize I must be asking far too much from this already enlightened age. With our religions bound up inside selfish prayer, our artists enraptured by slavish imitation, our philosophies content with mere sophistry, and our sciences stuck in a dogma of brain-sufficient mind, we cannot see much beyond ourselves, we cannot look outside what we think we already know, and thus it is we suffer the illness of entrapment inside immediacy. To ignore the autistic influence on mankind's now diversely melded traits is to extinguish the spark of a sudden and very real transformation. To suppress all forms of autistic expression—be they in individuals or in society as a whole—is to deprive this culture of its most forwards-looking glance. And to eradicate the condition itself would be to doom this species to a species' ultimate fate. Humanity's current circumstance, wondrous and tenuous all at once, is not the work of normalcy but the result of difference supporting difference. Human mind and consciousness, ancient and modern all together, are not the birth of limited brain but the product of world built around us. Here are the beginnings of the next transforming context, here might be the end of what I have labeled as worldblindness. If not from the despair of disabled society, then perhaps from the hope of individuals willing to look anew and yet a little further on, we might develop once more our taste for destiny, we might learn again to spurn complacency, we might join the many forces of our diverse humanity, and we might conjure again the power of struggling, striving will. This is how it has always been, you know. This is how we have constructed the newer knowledge. This is how we have expanded our hungering reach. And this is how we will dare to embrace a burgeoning awareness of a much broader, more universal and all-suffusing mind—an act of courage which would *still be human* ... oh, so splendidly human.