The Story of Autism: How We Got Here, How We Heal by Tao Lin ~dacten-sidlyn

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Neurotribes: The Legacy of Autism and the Future of Neurodiversity

by Steve Silberman

Avery, 560 pp., $15.99

Toxic Legacy: How the Weedkiller Glyphosate Is Destroying Our Health and the Environment

by Stephanie Seneff

Chelsea Green Publishing, 272 pp., $20.00

NOTE: For best reading, open the Endnotes in another tab. This essay's references, given in parentheses throughout, are listed there.

A NEW DISORDER

In the 1940s, Leo Kanner in the U.S. and Hans Asperger in Austria identified a new disorder in young children, different from "childhood schizophrenia" and "feeblemindedness." These kids were very "autistic," an adjective previously used in schizophrenia, meaning self-focused and -isolating, but unlike the insane they appeared to be affected since birth and didn't have hallucinations, and unlike the mentally retarded they ranged in IQ and had "strikingly intelligent physiognomies."

They seemed unwilling to interact with people. During social interaction, they looked preoccupied and inaccessible. Their facial expressions were blank or tense and troubled, and they used little to no gestures. They had "odd" eye gazes, not looking at eyes or faces. It was hard to get and sustain their attention. Many were suspected to have hearing problems, but did not. Some were mute, while others spoke rarely and curtly, in monotones or singsongs, and others were antisocially talkative, asking series of questions, repeating nonsequitur phrases.

Some kids took on a pleased, focused expression when left alone, even smiling to themselves, though some never smiled.

They played alone, with themselves and objects, which they treated affectionately. They enjoyed repetitive behaviors—collecting things, spinning things, drumming with their hands, masturbating, running in circles. One boy liked to shake a blanket while "delightedly shouting, 'Ee! Ee!'" wrote Kanner in "Autistic Disturbances of Affective Contact" (1943). A mother quoted in the paper said about her son, "I could leave him alone and he'd entertain himself very happily, walking around, singing."

They were fussy and unpredictable, sometimes displaying a little affection or joy, sometimes becoming distraught for unknown reasons. When their activities or routines were interrupted—when their expectations were thwarted—they became very upset, crying or tantruming, going into "long tirades," unable to adapt to change. They had what Kanner called "an *anxiously obsessive desire for the maintenance of sameness*."

Autism was rare—Asperger, in Vienna, saw around 200 cases over 10 years, while Kanner, at Johns Hopkins in Baltimore, described 11 cases—and ranged in severity. Kanner wrote of one boy who was a month short of five years old: "He did not communicate his wishes but went into a rage until his mother guessed and procured what he wanted." The boy, who "had no contact with people," was placed in a foster home. A few kids became functional in school and at home as they aged, but they still struggled and remained peculiar and awkward.

While normal kids behave unselfconsciously, autistic children "observe themselves constantly," wrote Asperger in "'Autistic Psychopathy' in Childhood" (1944). They observed others too. They seemed lost in their own worlds, but they knew what was happening around them in the social world, having used their peripheral vision, observed Asperger, whose paper also focused on the positives of autism, including "independence of thought, experience, and speech."

Instead of learning from others, autistic individuals gained knowledge out of their own experiences and theories and methods. This made some of their behavior "particularly original and delightful," wrote Asperger. They had "a special creative attitude towards language," which they tended to process literally, making them not "get" most jokes and be difficult to converse with, but also allowing them to perceive and describe reality

accurately. One boy's father said something about a picture they had "at home on the wall"; the non-literal use of "on" troubled the boy, who corrected his dad: "We have them *near* the wall."

Autists without intellectual disability could achieve "professional success" in the sciences and arts, but their "emotional life remains a closed book" and they would likely have lifelong relationship difficulties, wrote Asperger, who concluded:

> ***Unfortunately, in the majority of cases the positive aspects of autism do not outweigh the negative ones.***

THE CAUSE

Kanner and Asperger theorized autism was mostly genetic. Kanner seemed to also implicate parenting style, calling the parents obsessive and overly intellectual, while Asperger also—and clearly—implicated brain damage from encephalitis (brain inflammation) but did not speculate on the cause of the inflammation, though others since him have, citing the introduction in the 1930s of mercury fungicides(1), the mercury-based preservative thimerosal(2), and aluminum vaccine adjuvants(3).

In the 1950s and 1960s, the medical establishment, influenced by Sigmund Freud, believed the toxic-parenting theory. Autistic children were placed, for their own protection, away from their "cold" parents, in institutions like Bellevue Hospital, where they received electroconvulsive therapy, antipsychotics, benzodiazepines, amphetamines, and punishment-based "aversive therapy," involving electric shocks and the withholding of food and water. Most kids never left.

Parents—guilt-ridden, heartbroken—were given psychotherapy. One therapist repeatedly asked a couple, "Tell me, why do you hate your son?"(4) Women were especially blamed; they were called "refrigerator mothers." Bruno Bettelheim, a Freudian analyst, wrote that autism was caused by "the parent's wish that his child should not exist," and that mothers were more at fault than fathers(5). In *Neurotribes* (2015), a bestselling autism book promoting the genetic theory, Steve Silberban writes:

> ***By blaming parents for inadvertently causing their children autism, Kanner made his syndrome a source of shame and stigma for families worldwide while***

sending autism research off in the wrong direction for decades.

Over the 1970s, mainstream psychiatry switched to the genetic theory, which stated that autism was inborn and lifelong and so couldn't be prevented or healed, only mildly treated, with pharmaceuticals and behavioral therapies like speech, language, and social skills classes. Kids continued to be placed in institutions, but their problems were now the fault of nature itself —their parents' and other ancestors' genes.

This remains the dominant belief, even though since the 1960s, and especially in the past fifteen years, an increasing number of nutritional and environmental factors have been identified. Studies have implicated deficiencies in minerals(6) (zinc, magnesium, calcium, selenium(7)), vitamins(8) (A, C, D, K, B2, B3, B6, B12), natural detoxifying compounds (glutathione(9), cysteine(10), taurine(11), melatonin(12)), and circulating endocannabinoids(13), as well as prenatal, perinatal, and postnatal exposures to air pollution(14), electromagnetic radiation(15), cocaine and alcohol(16), MSG(17), PCBs(18), microplastics(19), phthalates(20), fluoride(21), heavy metals (lead(22), uranium(23), cesium(24), arsenic(25), mercury(26), aluminum(27)), pharmaceuticals (acetaminophen(28), valproic acid(29), thalidomide(30), SSRIs(31), anticonvulsants(32)), and pesticides (organophosphates(33), pyrethroids(34), neonicotinoids(35), glyphosate(36)), most or all of which cause brain inflammation, confirming Asperger's causative theory of "encephalitis in early childhood."

Mainstream media, corporations, and the government have ignored the findings, though non-genetic factors are now usually acknowledged with a strange tone of vague mystery: "Autism spectrum disorder (ASD) is a developmental disability caused by differences in the brain," according to the CDC. "Some people with ASD have a known difference, such as a genetic condition. Other causes are not yet known."

Scientists have been unable to define how autism is genetic. Over the past two decades, an increasing number of genes have been blamed in causing the disorder. It's now argued that 500 to 1,000 genes are involved(37), which amounts to 7 to 14 percent of all the genes used in brain function. This is like saying a cut on a leg is caused by genetics, and pointing to the leg-related genes from the site of the cut as proof. Other genetic disorders lack this

tautology—Down syndrome is caused by an extra chromosome 21, Rett syndrome is caused by mutations in one gene.

And so there's no biological test for autism. Diagnosis is based on behavior, assessed through observation, interviews, and questionnaires. The DSM-5 requires "deficits in social communication and social interaction," "restricted, repetitive patterns of behavior, interests, or activities," and that these symptoms cause "significant impairment" in overall functioning. According to WebMD, doctors will ask a child's parents, among other questions, "Do they have trouble making eye contact? Is their tone of voice 'flat'? Any problems with sleep or digestion?"

The Autism-Spectrum Quotient (AQ) test is a 50-item questionnaire created in 2001. Scores above 31 indicate "clinically significant levels of autistic traits."(38) I filled it out for this essay, pretending I was in high school or college, and scored a 39. I tested myself again, from my current perspective, at age 39, and scored a 28.

A PERSONAL HISTORY

At birth, I probably received antibiotic eye drops, as most kids born in U.S. hospitals do. At home, I was weaned on soy milk formula. I cried in the late afternoons and at night. In restaurants, my mom would carry me outside so that my crying didn't disturb others. My parents—Taiwanese immigrants—and older brother were my only relatives in the country. When I was three, I had diarrhea for a week and was given antibiotics.

In elementary school, I was social and had friends, but was shy and often unwell, with stomach aches, headaches, nosebleeds, nausea, rhinitis (runny nose), ear infections, and more diarrhea. When not sick, I was hyperactive, running around, climbing things. According to my mom, I was good at entertaining myself. I was placed in the ESL (English as a Second Language) program, but after a while the teacher said my English was acceptable, and later, after an IQ test, I entered the "gifted" program.

In middle school, I addictively played an online text-based multiplayer role-playing game that was a faceless form of social interaction. For around eight hours a day for two years, I stared at a screen, clicking, typing, chatting, watching numbers go up as my character gained experience and better equipment. At school, when asked, "What's up?" I felt thwarted and a bit confused.

“Nothing,” I’d mumble. I had to learn to process “What’s up?” non-literally, as “Hi” and/or “What are you [doing/up to]?”

I liked collecting things (Magic cards, sports cards, pogs, coins), and I was taciturn both in person and in writing. At the end of 8th grade, the 46 students in my class wrote about our “favorites,” “memorable people,” “memorable events,” and other memories in a yearbook. My classmates wrote an average of around 100 words. My response, 28 words, was the briefest, with no memorable people or events.

My health issues compounded my introversion. Nosebleeds, swollen lymph nodes, and mouth sores limited my desire and ability to speak, move my mouth, or use facial expressions. I had eight teeth pulled so that my remaining 24 could fit in my underdeveloped jaw. I experienced my face as a locus of self-conscious discomfort, instead of as a tool for self-expression; in the computer game, socializing with small finger movements, I lacked this obstacle, and exacerbated it.

By high school, I’d become much more autistic. I rarely spoke, sometimes committing to just not speaking all day. When I did say something, people often couldn’t hear or understand me. I spoke without moving my mouth, one classmate noticed. I grew distant from my friends. My right lung spontaneously collapsed three times. My face looked gloomy and tense. I had low self-esteem. I closely and inconspicuously observed my peers, wanting to identify kids who were more awkward and withdrawn and socially anxious than I was. I identified fewer than 1 in 100 people. I felt doomed.

From 2001 to 2008, in and after college, where I majored in journalism, I became fluctuatingly less autistic by enhancing my physical and mental health through diet, exercise, being around people more, and other natural methods. I still spent more time alone, and had fewer friends and close friends, than seemingly everyone I met, but in 2005 I started a literary blog and became active online and made friends that way.

Around 2009, when I was 26, journalists and other people began to call me, my writing, and my characters autistic. I’d heard of autism for years—probably since 2002 from a psychology class—but hadn’t looked into it closely.

I learned it was a collection of loneliness-causing debilities that I had, that I obsessively examined in my writing (autofiction about self-conscious, covertly emotional, sensitive-yet-somewhat-zombielike characters with uninflected voices and neutral/worried facial expressions), and that I enjoyed reading about in other people's stories and novels—unstable mood and personality, precarious and unsatisfying relationships, a gnawing feeling of being allergic to people yet lonely.

I began to view myself varyingly as borderline or slightly autistic. I often used an autistic literary aesthetic, focusing on unexpected concrete details, using weird similes, avoiding idioms and other non-literal language. "You hope it's only the author's crypto-autistic choices that render this universe so painfully real, not the resonance from a spot-on depiction of a soulless culture," wrote Lydia Millet about my novel *Taipei*(39). It was both—culture was soulless, and I wanted to be accurate.

In *NeuroTribes*, Silberman writes that many in Silicon Valley, in the tech industry, seem autistic. I've noticed that many autobiographical authors and graphic novelists do too. There's a connection between autobiographical self-expression and autism, or *auto-ism*, from the Greek word *auto*, meaning "self" or "self-referential." Pain and discomfort point inward, toward themselves, insisting that something be done.

In 2010, I began to treat my autism—and related troubles, like anxiety and depression—with amphetamines, benzodiazepines, MDMA, and other pharmaceuticals, using them to act normal, so that I could be social and reduce my loneliness. Pills were noxious, unsustainable solutions, but they showed me my personality was not set (I could look at eyes, be garrulous and charismatic), and gave me social practice in a self-directed pharmaco-cognitive-behavioral therapy. I quickly became addicted to the drugs, and eventually felt even more doomed, maybe, than in high school.

After stopping pills in 2013 and 2014, I continued learning about natural treatments. I read *Gut and Psychology Syndrome: Natural Treatment for Autism, Dyspraxia, A.D.D., Dyslexia, A.D.H.D., Depression, Schizophrenia* (2010) by Natasha Campbell-McBride, a former neurosurgeon who reversed her son's autism. I read *Bugs, Brains, and Bowels* (2013), an anthology of essays linking gut health with brain function; *An Electronic Silent Spring* (2014), which explained the harmful effects of artificial electromagnetic fields; and *Nourishing Traditions* (2001), a cookbook based on

ancestral wisdom, teaching me to replace vegetable/seed oils with animal fats.

From *The Art of Seeing* (1942) by Aldous Huxley, I learned how to better look at faces and eyes. From Christian Bogner, a doctor with an autistic son, I learned the chemical basis for why cannabis—neuroprotective, anti-inflammatory—disrupts circular thinking, increases mind control, and allows me to smile and laugh(40). The words *stoned* and *autistic* grew antonymous to me—colloquially, phenomenologically, biologically.

Through nutrition, detoxification, exercise, writing (and other autism-friendly forms of self-expression), reading (allowing me to alleviate loneliness in private, without distress), cannabis, change-catalyzing psychedelics, meditation, and practice, I've become much less autistic since high school and college. I estimate I now range from 30 to 98 percent more autistic than my peers, depending on the hour, day, week, and month; every symptom varies, I've learned, depending on sleep, situation, inflammation levels, cultural consumption, mindset, and hundreds of other factors.

To be on the spectrum today, a child needs to be at least 96.51 percent more autistic than his/her peers, since more than 3.49 percent of U.S. children (around 1 in 29) are now autistic.

THE EPIDEMIC

In 1970, a study of 899,750 children aged 3 to 12 in Wisconsin established the baseline prevalence of autism at 0.7 cases per 10,000 children(41). In 1985, autism was still rare, with an estimated 5 cases per 10,000 U.S. children(42). In 1995, when around 20 per 10,000 U.S. children were autistic(43), Navy psychologist Bernard Rimland, the father of a severely autistic son, warned that there was an epidemic. Rimland, whose book *Infantile Autism* (1964) helped discredit the bad-parenting theory, implicated antibiotic overuse, vaccinations (especially the DPT vaccine), and corporate pollution(44).

By 2020, around 349 per 10,000 U.S. children (and 498 per 10,000 boys, who are affected around 4 times as often as girls) aged 3 to 17 were autistic(45). The accelerating, exponential rise—3,000 percent from 1970 to 1995, 18,000 percent from 1995 to 2020—is a large problem for the genetic theory. If autism was mostly genetic, rates would be near-constant. Genetic theory proponents

say the rise is due to widened criteria, misdiagnoses, and increased awareness, but studies have found otherwise.

In 1999, California legislature issued a one million-dollar emergency grant to UC Davis's MIND Institute to investigate the 273 percent rise in autism in the state from 1987 to 1999. The resulting 70-page report stated that the rise was not due to "loosening in criteria" or "misclassification," and that most autistic children "did not have a family history of autism." It concluded that "some, if not all, of the observed increase represents a true increase in cases of autism."(46)

The report, by 27 people at UC Davis and UCLA, also studied parents' beliefs, asking, "What do you think caused your child's autism or other developmental problem?" For parents of autistic kids born in 1993, 1994, and 1995, 47.9 percent did not respond or said they did not know, 45.1 percent implicated environmental toxins (with 33 percent citing vaccines), and only 26.6 percent blamed genetics.

As for increased awareness, a 2014 study by Cynthia Nevison in *Environmental Health* found that only 20 to 25 percent of the U.S. autism rise could be attributed to "better or expanded diagnosis." Nevison compared the rise to "a list of suspected toxins," and found "increasing trends that are positively correlated" for polybrominated diphenyl ethers, aluminum, and the antibiotic herbicide glyphosate.(47)

Today around 2.5 million U.S. children are autistic. Probably less than 10 percent will live fully independently(48), and as a group they are much sicker than other people, with sleep disorders (40 to 86 percent)(49), ADHD (41 to 78 percent)(50), gut problems (up to 70 percent)(51), mood disorders (up to 50 percent)(52), and anxiety disorders (around 40 percent)(53), as well as autoimmune diseases(54), colitis, asthma, arrhythmia, allergies, infections, headaches, rhinitis, skin and lung disorders, diabetes, and epilepsy (chronic brain seizures)(55). Their suicide rate is up to ten times the normal rate(56), and their average lifespan is only 36.2(57); circular running may be fun when small, but teenagers and adults get lonely. Around 40 percent attack themselves(58), and 25 to 50 percent are nonverbal, either not speaking or only using a few single-word communications(59).

The severely autistic, numbering more than one million in the U.S., require 24-hour care and will never be employed or married. Some are forced to wear helmets to protect themselves from beating

themselves unconscious. Many seem secluded in their own excruciating, languageless worlds, weeping, screaming, self-harming (the main cause of emergency visits for autistic children), or destroying things when not catatonic.

Parents worry about what will happen when they're no longer able to care for their severely autistic kids. "Please don't judge me too harshly," said one mother to a doctor, "but when I go I will be taking my son with me."(60)

The most autistic kids of today are much more autistic than those described by Kanner and Asperger in the 1940s. Back then, around 1.5 percent did not speak, and none chronically attacked themselves. If the genetic theory was right, there should have been kids back then too who felt such hopeless despair that they resorted to "self-biting," "eye pressing or gouging," "head banging," and "knee-to-head hitting."(61)

Maybe these kids feel that someone (some person or higher power) will help them if they exert their languageless will enough, or maybe they're instinctively trying to destroy the source of their anguish—their own brains.

The commoner and more severe autism becomes, the less sense the genetic theory makes. How and why would nature select for self-destructive, nonreproducing, antisocial muteness? The genetic theory also can't explain "acquired autism," when symptoms appear after years of normal development(62); why 30 to 50 percent of autists regress, becoming suddenly more autistic(63); or why, according to studies in *Pediatrics International*(64), *Journal of Child Psychology and Psychiatry*(65), and other journals, an estimated 10 to 20 percent of autists recover, leaving the spectrum.

Another egregious flaw of the genetic view is that it doesn't address the fact that calling a disorder genetic does not absolve environmental factors, since pesticides and radiation (nuclear(66), electromagnetic(67)) are genotoxic, damaging DNA, causing mutations. A 2022 study in *Nature Genetics* that identified 72 mutations associated with autism observed that most of them were *de novo*, meaning they were not inherited; the 75 authors of the study did not discuss the cause of these mutations(68).

"After seventy years of research on autism, why do we still seem to know so little about it?" writes Silberman in the introduction to

NeuroTribes. He doesn't seem to answer his own question; instead, he suggests we stop learning about autism, especially its environmental causes, and focus on accepting it as a part of being human.

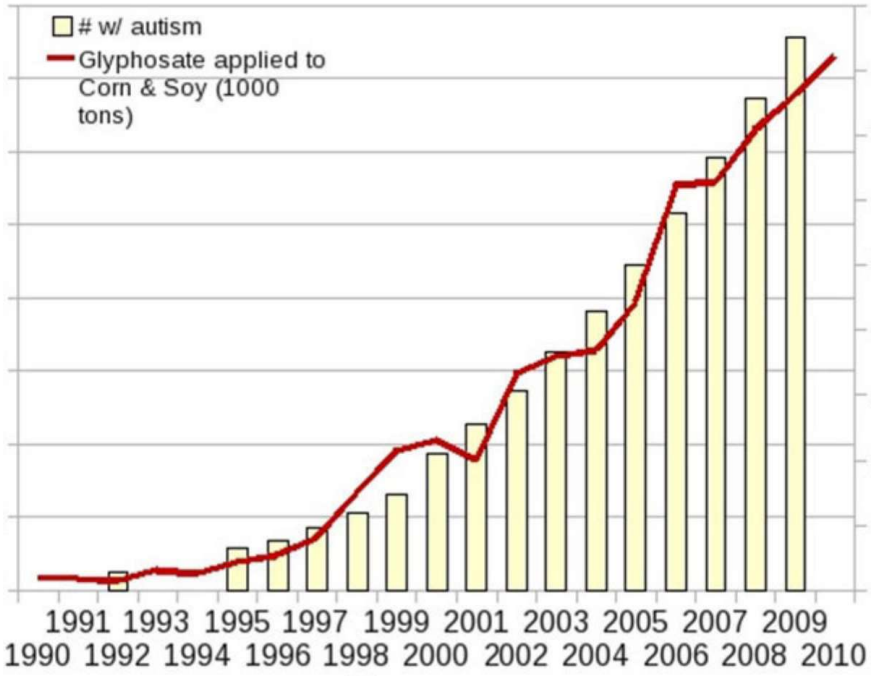
To me, the answer seems clear: because corporations have convinced most governments, scientists, journalists, and media outlets that their products are safe.

GLYPHOSATE

In *Silent Spring* (1962), Rachel Carson wrote that almost 500 new chemicals, "having no counterparts in nature," were put into use in the U.S. every year. She viewed these synthetic compounds, which mainly came out of World War II, as a major threat to human existence. She wrote that "we must be more concerned with the delayed effects of absorbing small amounts of the pesticides that invisibly contaminate our world."

The chemical industry spent at least 250,000 dollars to discredit her(69), and she died of breast cancer in 1964, but her book, first serialized in the *New Yorker*, was widely read and politically influential, inciting the creation of the Environmental Protection Agency (EPA) in 1970 and the banning of a few pesticides.

In 1974, two years after DDT was banned in the U.S., the already corrupt and/or incompetent EPA allowed Monsanto, the main seller of DDT, to begin selling glyphosate in its weedkiller Roundup. Seven hundred tons of glyphosate were used in the U.S. that year, 20,000 tons in 1995, and 138,000 tons in 2014(70), a 200-fold increase nearly matching the rise in autism over the same period. It's now the most-used herbicide in history. It's in non-organic cotton, tobacco, vape cartridges, and most non-organic foods (though even organic foods may contain small amounts of it), and has been found in air(71), soil(72), rain/surface/tap water(73), blood(74), urine(75), breast milk(76), and baby formula(77).



Graph from Beecham and Seneff (2016) comparing U.S. children with autism and tons of glyphosate used on corn and soy. Correlation does not necessarily mean causation, but it does mean, "This seems suspicious and should probably be investigated."

Glyphosate causes most-to-all modern disorders and diseases, including autism, cancer, Alzheimer's, and diabetes, according to six papers published from 2013 to 2016 by Anthony Samsel and Stephanie Seneff. It does this by, among other ways, breaking down gut and blood-brain barriers; suppressing cytochrome P450 enzymes (used by animals to metabolize toxins, synthesize endocannabinoids and hormones, activate sensory neurons); disrupting the shikimate pathway in plants and microbes, causing animal deficiencies in at least serotonin, DMT, 20 opioids, nine vitamins, dopamine, melatonin; and by being erroneously inserted into thousands of proteins because it resembles glycine, one of the 22 amino acids that life uses to build itself(78).

Seneff, a senior research scientist at MIT, has argued that glyphosate, which the U.S. uses the most out of any country—spraying it on an area equivalent to around three Californias(79)—is the one toxin most responsible for the autism epidemic. In a 2016 paper, Seneff and James Beecham described at least seven ways that glyphosate could cause autism, including through adverse effects on the thyroid glands of mothers and children during gestation, by disrupting calcium inflow to immature neurons, and by causing mothers to pass cytokines to the placenta/fetus(80).

In 2016, the nonprofit Moms Across America sent five childhood vaccines to Microbe Inotech Laboratories to be tested for glyphosate. Using the ELISA test, glyphosate was found in all five vaccines, at 0.107 to 2.671 parts per billion(81). The MMR vaccine, which is grown as a live culture on gelatin, contained the most glyphosate. Additional tests from multiple labs on 19 vaccines confirmed the contamination(82), which to many people was not surprising, since vaccines contain soy, sucrose, fructose, lactose, bovine serum, egg protein, and gelatin derived from glyphosate-sprayed crops and factory-farmed animals fed heavily contaminated soy, corn, and beet pulp.

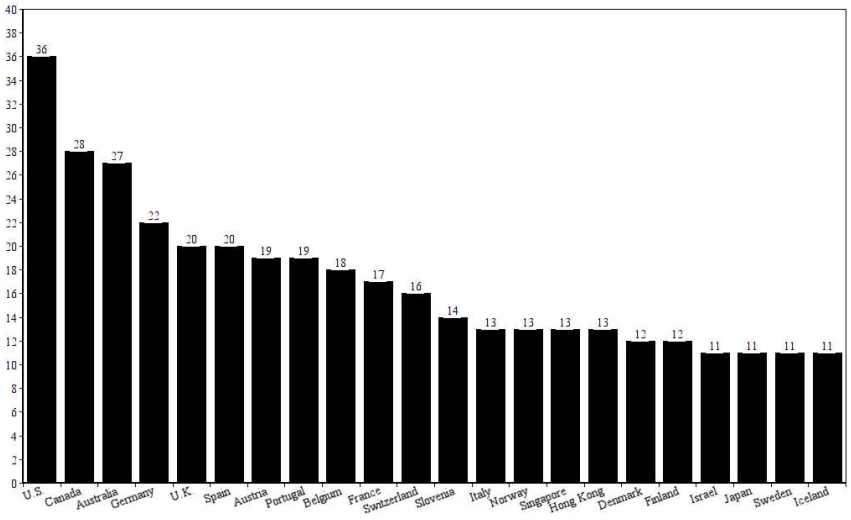
Monsanto responded by saying the ELISA test wasn't reliable. The Genetic Literacy Project, a pro-pesticide non-profit funded, at the time secretly, by Monsanto and other corporations(83), parroted Monsanto, adding that "if glyphosate residues are present in vaccines, which is highly doubtful, t's [sic] almost certain that the residue exposure levels are so minute as to be meaningless," even though Moms Across America's press release referenced studies finding that glyphosate levels lower than in the vaccines were neurotoxic, destroyed gut bacteria, and caused human placental cell death.

The CDC, informed of the findings, said it was the FDA's problem. The FDA, asked by Moms Across America if they would test vaccines for glyphosate, said they would not be testing glyphosate levels in anything(84). Mainstream media, largely funded by Big Pharma, has also ignored the findings. The *New York Times* instead reported, 10 months later, that glyphosate had been found in Ben & Jerry's ice cream.

The removal of thimerosal from three childhood vaccines beginning in 1999 is often stated as evidence or proof that vaccines don't cause autism—"Even after thimerosal was removed from almost all childhood vaccines, autism rates continued to increase," says the CDC's website—but the blood-brain-barrier-crossing antibiotic is still in flu shots given to pregnant mothers and annually to infants, and glyphosate hasn't been addressed, nor have the other unintentional toxins in vaccines, like lead(85), stainless steel(86), and the numerous non-glyphosate pesticides in soy/corn/gelatin, or the intentional ones, like the non-thimerosal preservatives and the aluminum adjuvants.

Most non-live, non–whole-pathogen vaccines are not toxic enough to provoke a sufficient immune response; to increase the toxicity, aluminum adjuvants were added to vaccines in 1932(87).

Aluminum, which has no biological function, remains the most-used “adjuvant,” which means “to help.” The government does not test how much aluminum corporations put into their vaccines. Levels vary(88), even among the “same batch,” writes Christopher Exley in *Imagine You Are an Aluminum Atom* (2020) —“within a pack of five ready-to-use vaccines, the aluminum content can vary by 50 percent or more.”



Number of vaccines in 2009 for fully vaccinated children under five years of age. Interestingly, some of the healthiest countries use the least vaccines. (Statistics from The Age of Autism, “Autism and Vaccines Around The World: Vaccine Schedules, Autism Rates and Under 5 Mortality,” Generation Rescue, 2009.)

Aluminum is also in baby formula, pharmaceuticals, antiperspirants, sunscreen, and cookware, but those factors aren’t intravenous and haven’t increased exponentially. In 1962, U.S. children received three vaccines. In 1983, when I was born, ten vaccines were mandated. In 1986, the National Childhood Vaccine Injury Act freed corporations from liability for vaccine injuries, leading to a runaway expansion of the U.S. vaccine schedule; by 2018, “fully vaccinated” kids in the U.S. got 38 vaccines from ages 0 to 5(89)—the most out of any country, more than twice the average of countries in Europe and Asia, where autism rates are a fourth(90) to a 10th(91) that of the U.S.

In 2018, the first study on aluminum in the brains of deceased autistic individuals found “extraordinarily high” levels, the highest ever found in human brain tissue(92). In *Imagine You Are an Aluminum Atom,* Exley, one of the study’s authors, explains one way it got there—immune reactive cells, like macrophages, take in

aluminum at the injection site; when these cells die, in the brain and elsewhere, they release their "highly toxic cargo." Seneff, in *Toxic Legacy*: *How the Weedkiller Glyphosate Is Destroying Our Health and the Environment* (2021), describes another way it got there:

> ***Two glyphosate molecules wrap around an aluminum atom, hiding its charge and producing an uncharged small molecule that easily crosses barriers. This glyphosate binding allows aluminum to be carried past the gut barrier and into the brainstem nuclei, where an acidic environment prompts the glyphosate to release it.***

Glyphosate and aluminum may be the current largest factors so far identified in autism, but many others are known, and thousands of new chemicals are introduced each year (more than 80,000 are now approved for use in the U.S.(93)), while banned ones persist in the environment. DDT and its metabolites, including DDD and DDE, are still detectable in squash, broccoli, and other foods(94), and a 2005 study by the Environmental Working Group found 287 chemicals, including car emissions, fire retardants, and various banned pesticides, in the umbilical cord blood of 10 American babies; 217 of the compounds were known neurotoxins, and 208 had been shown to cause birth defects or abnormal development in animals(95).

"It's possible that in our increasingly toxic world, neurological dysfunction such as autism might increase even in the absence of glyphosate," writes Seneff in *Toxic Legacy*. This is important to remember because a standard, successful strategy of corporations is to simplify health discourses to one factor, like thimerosal or the MMR, and then "prove," through the distortion, suppression, or destruction of evidence and the crypto-control of mass media, that it does not cause whatever disorder.

It seems that the modern brain—multigenerationally malnourished, chronically sleep-deprived, immersed in anthropogenic radiation—is overwhelmed by thousands of old and new poisons crossing leaky gut and blood-brain barriers, leading to chronic brain inflammation, causing the symptoms of autism and other disorders.

Sufficiently inflamed and damaged brains can't generate the new connections required to parse and respond to complex dynamic novelty. This makes eyes, faces, and people—unpredictable things

requiring instant, ongoing reactions—overwhelming and frustratingly unengageable. Studies in 2017 found that (1) autists avoid eye contact not due to "interpersonal indifference," as traditionally believed, but because it's "terribly stressful,"(96) and that (2) non-autists had negative first impressions of autists, judging themselves less likely to hang out, talk to, or like them(97).

Autism, I know, is annoying to others and discouraging to autists. Autistic traits—moodiness, sensitivity to sounds, fussiness with routines, ambiguous social tics, subpar eye contact, frequent faux pas, awkward faces, mumbly voices—keep others away in a despair-ridden, self-feeding cycle. Many times I've feared and/or avoided social interaction simply because I didn't want to make people feel uncomfortable.

The pleasure, bonding, satisfaction, meaning, fulfillment, and stimulation—the opioids, oxytocin, endocannabinoids, dopamine, etc.—normally achieved through human relationships, in the autist is instead diverted, beginning in the formative years when the brain is rapidly developing, to non-social activities with self-invented goals. This explains some of autists' unusual behavior—rocking, hand-flapping, and other forms of *stimming* (self-stimulating)—and why they prefer repetitive, solitary activities.

The pain-and-anxiety-driven isolation also explains (1) their interest in computers, the internet, science, and art, as opposed to politics and sports, and (2) one of the bittersweet positives of autism: Autistic individuals are less likely to conform, in part because conformity feels less gratifying and comforting to them than to other people. Autists' inbuilt resistance to peer pressure and authority, combined with their outsider status and precise language, allows them to notice and describe society's flaws better than those comfortably immersed in it since birth.

NEURODIVERSITY

NeuroTribes promotes a new, extreme form of the genetic theory called neurodiversity, which states that autism, ADHD, and other neurological conditions are "naturally occurring cognitive variations," as inborn as being gay or Chinese, to be accepted as normal, optimal, and ancient. Silberman can make this argument because he ignores severe autism, most of human history, the effects of pollutants, and that autists have higher rates of almost every mental and physical ailment(98). He thinks we should stop researching both genetic and environmental etiology, and instead focus on destigmatizing autistic traits and adding social services,

like “quiet areas” in school “where a student who felt temporarily overwhelmed could avoid a meltdown.”

I agree that destigmatization and protective services would be helpful—and, going further, that we could prize and nurture our functional autists, guiding them into roles valuing their ability to see and say what others cannot—and I agree we could stop researching genetic causes, but I don’t think we should stop investigating environmental factors. In 2009, Irva Hertz-Picciotto from UC Davis’s MIND Institute said, “Right now, about 10 to 20 times more research dollars are spent on studies of the genetic causes of autism than on environmental ones. We need to even out the funding.”(99)

The genetic theory—and especially its neurodiversity variant, which implies that autism is not just mostly but completely genetic—absolves corporations and the governments they control (at least 15 people have worked over their careers for both Monsanto and the federal government(100), a cross-industry, bipartisan dysfunction called the “revolving door”)(101), putting all the blame onto nature itself, continuing what Rachel Carson called “man’s war against nature.” And so *NeuroTribes*, lauded by the corporation-controlled media, was extremely successful.

The genetic theory seems to have sent autism research “in the wrong direction for decades,” as Silberman wrote about the psychogenic, parent-blaming theory; neurodiversity has the potential to send the discourse in an even more wrong direction. Its proponents, believing autism to be static instead of dynamic, want everyone to stop examining its negatives. This to me is like if someone ran into me by accident, hurting me, and then almost everyone kept saying to focus on the positives, while a few people worked on preventing future accidents and healing my injury.

In 2018, a California court ordered Bayer, the German pharmaceutical corporation that bought Monsanto that year, to pay $289 million in damages for glyphosate causing cancer in a school groundskeeper(102). In 2019, when Bayer lost two more cases and was facing tens of thousands of similar lawsuits, the *New York Times* ran an advertisement by Bayer that was simply a quotation from a government agency:

> ***“EPA has found no risks to public health from the current registered uses of glyphosate.”—Andrew Wheeler, EPA administrator***(103)

In 2022, the 9th U.S. Circuit Court of Appeal's panel of judges found that the EPA's assessment of glyphosate on human health was erroneous because it ignored important studies, discounted expert advice, and used "inconsistent reasoning."(104)

Bayer has said it will stop selling glyphosate to U.S. consumers beginning in 2023(105), Costco has stopped selling it, more than 25 countries have banned or restricted its use, and the World Health Organization has labeled it "probably carcinogenic to humans," stating additionally that evidence was "strong" that it's also genotoxic, but the U.S. government—which over decades has continually, at the request of Monsanto, raised the amount of glyphosate residues allowed in food(106)—still says it's safe.

The direct and indirect influence of trillions of dollars from chemical and pharmaceutical corporations over the 20th century—in advertisements, lobbying, front groups, donations to Congress, secret and open public relations campaigns, harassing and spying on journalists(107), paying scientists to defend their products in mainstream media(108), ghostwriting articles and papers(109)—has generated a hidden, pervasive, anti-nature, pro-technology, pro-synthetic-chemical bias in mainstream culture.

In *NeuroTribes*, the bias comes through as a stiff, irrational, incoherent disdain toward investigating environmental toxins: To Silberman, the view that autism is "a historical aberration—a by-product of the toxic modern world" is an "insidious illusion" that has "contributed to an astonishing neglect of the needs of autistic adults and their families." Late in his book, in one curious pair of sentences, he admits he doesn't know what autism is, dismisses the effects of civilization, and states what autism is:

> ***Whatever autism is, it is not a unique product of modern civilization. It is a strange gift from our deep past, passed down through millions of years of evolution.***

But the earliest he goes in his 548-page book is the 18th century, suggesting that Henry Cavendish (1731–1810) was autistic. It's as though Silberman were in a hospital, and he kept saying, "It's like this everywhere," without looking outside.

EVOLUTION

Around six million years ago, some apes began to move from forests to savannas and grasslands, gradually shifting their omnivorous diet from plant- to animal-based, evolving, in the invisible glow of Earth's natural electromagnetic field of around 8 hertz, into the *Homo* genus by two-and-a-half million years ago. The dietary change continued through *Homo habilis* and *Homo erectus*, with an increasing focus on animal fats(110), and *Homo sapiens* appeared around 300,000 years ago, occupying every continent except Antarctica by 60,000 years ago at the latest. Our forebears from this time period still exist in many places, in around 5,000 groups, from the Paiwan in Taiwan to the Mazatec in Mexico to the Hadza in Tanzania. They are aborigines—our living ancestors.

From 1830 to 1857, George Catlin lived with, interviewed, and painted people from 150 North and South American tribes, all of which were still biologically resonant with nature, following their ancestors in matters of diet and medicine. Civilization's beliefs about aboriginal health had been severely skewed, according to Catlin, by a racist bias against "savages." In Catlin's experience, wild people were stronger, happier, more well-adjusted, and much less diseased than civilized people, laughing and smiling more, with active elders and less than 0.5 percent infant mortality. Catlin wrote:

> ***Amongst two millions of these wild people whom I have visited, I never saw or heard of a Hunchback (crooked spine), though my inquiries were made in every Tribe; nor did I ever see an Idiot or Lunatic amongst them, though I heard of some three or four, during my travels, and perhaps of as many Deaf and Dumb.***(111)

These days, among two million Americans, around 20,000 have ankylosing spondylitis (an autoimmune disease I have that can lead to a crooked spine), 50,000 are mentally retarded(112), at least 50,000 are schizophrenic(113), 35,000 have dementia(114) (Alzheimer's, Parkinson's, etc.), 10,000 are severely autistic, and 650 are deaf-blind.(115)

Catlin wrote that some writers had theorized that "the entire absence of mental and physical deformities amongst these people" was because they killed anyone with such debilities, but this was not true. In every case that Catlin encountered or heard of, "these unfortunate creatures were not only supplied and protected with extraordinary care and sympathy, but were in all

cases guarded with a *superstitious* care, as the probable receptacles of some important mystery, designed by the Great Spirit, for the undoubted benefit of the families or Tribes to which they belonged."

Catlin's findings have been corroborated by many people, including Vilhjalmur Stefansson, who lived and traveled with Alaskan aborigines from 1906 to 1912(116), and, most famously and rigorously, by dentist Weston A. Price, who in the 1930s visited 14 non-modern groups in diverse locations, from Australia to Kenya. In *Nutrition and Physical Degeneration* (1939), Price wrote that aborigines got up to 10 times the vitamins and minerals of their civilized counterparts, didn't need to have their wisdom teeth removed, and had near-perfect teeth; but when they switched to modern diets, they experienced physical and mental degeneration that accumulated over generations.

Natives were conscious that if their parents-to-be weren't "in excellent physical condition and nourishment," their babies would incur mental and physical "injuries," wrote Price. In many groups, "girls were not allowed to be married until after they had had a period of special feeding" lasting up to six months—organs, fish eggs, spider crabs, on top of their normal diet, which included all parts of animals and a variety of plants. In many African groups, fathers-to-be also received special foods. Indigenous societies seemed optimized for creating what Price called "perfect infants."

In contrast to the "discomfort and length of time of the labor of modern mothers," childbirth for our ancestors was "a very simple and rapid process, accompanied by little fear or apprehension," wrote Price. In many groups, newborns were wrapped in an "absorbent moss" and left unbathed for weeks, resulting in clear, healthy skin. Special diets continued for women through lactation. In one tribe in Peru and many tribes in Africa, nursing mothers ate quinoa as a "stimulant to the flow of milk."

All these and many other traditions probably go back hundreds of thousands, if not millions, of years, during which the myriad pollutants of civilization did not exist.

HEALING

To me, the bigger message of autism is this: We are poisoning ourselves. Nature is not cruel; rather, it is modern civilization that is self-destructive.

Civilization emerged (or, more likely, reemerged) with Çatalhöyük and Old Europe around 9,000 years ago and became increasingly nature-disconnected after the advent of war around 6,500 years ago(117). Millennia later, in the 1700s, the Industrial Revolution spewed toxic metals into the air, soil, water, and food chain. Around 1800, humans began to generate artificial electromagnetic fields(118). Construction on the 60-hertz U.S. electric grid began in the 1890s. The world wars spurred the production of synthetic poisons, plastic ephemera, and radioactive weapons. More than 2000 atomic/nuclear bombs were detonated in the atmosphere, underground, and underwater from 1945 to 1992, releasing uranium, cesium, etc., into the biosphere. Psychiatrists began to prescribe antipsychotics, antidepressants, and other drugs for mental illness to adults in the 1950s and children in the 1980s(119). Genetically modified crops, engineered to resist glyphosate, increased glyphosate usage exponentially beginning in 1996. Wi-Fi was introduced a year later, and each generation of mobile network has used higher frequencies, with 5G operating at 0.7 to 80 billion gigahertz. Gigahertz radiation has increased a million-trillion-fold in the past few decades, according to a 2018 *Lancet* article titled "Planetary Electromagnetic Pollution: It Is Time to Assess Its Impact."(120)

All these new pollutants potentiate one another—Wi-Fi and cell phones, for example, break down various bodily membranes and barriers, increasing the intra-body range of petrochemicals and other molecular toxins. Some people are more susceptible than others. The authors of a 2013 paper in *Pathophysiology* noted that the "biological fragility" of autistic people may make them particularly vulnerable to the manifold adverse effects of electromagnetic radiation.(121)

Compared to our ancestors from 50,000, 5,000, 500, 100, and even just 50 or 25 years ago, we are all deeply damaged, are all, on what I call the Civilization Spectrum Disorder, depressed, anxious, unstable, demented, psychotic, and autistic. In this chaotic milieu, empathy, patience, and forgiveness seem essential, especially toward children: The deeper into history one was born, the more damaged one is likely to be.

Christopher Exley has suggested that conditions like ADHD, dyslexia, and dyscalculia are "simply 'mild' forms" of more serious neurodevelopmental disorders such as autism(122). Others have noted that Alzheimer's, schizophrenia, and many other mental disorders are, like autism, also (1) probably mostly-to-entirely

caused by civilization and (2) viewed by mainstream medicine as mysterious genetic disorders.(123)

The United States—which as of 2011 had the highest first-day infant death rate in the industrialized world(124)—might succumb to autism, becoming a cautionary example for other countries. The autism rate here has doubled an average of every five years since 1970. At this rate, the majority of American boys will be autistic by 2036, and by around 2045 most children here will be nonverbal.

Civilization doesn't need to be this toxic. We could easily return to the 1980s, when autism was rare. The U.S. could rethink its out-of-control vaccine schedule. Uncontaminated soy, gelatin, and virus-growing cultures—and safer adjuvants than aluminum—are available. We could ban direct-to-consumer drug advertisements like every other country besides New Zealand, and replace the dystopian content with helpful, empowering information on how to become healthier and happier naturally.

Nutrients, fasting, grounding (touching Earth with bare feet or other body parts), sunlight, sleep, and exercise facilitate the body's detoxifying, self-healing abilities. Animal organs are ample, underused sources of fat-soluble vitamins. Silicon-rich mineral water removes aluminum from the body(125). *Bacillus subtilis*, a rod-shaped bacteria, can degrade 65 percent of the glyphosate in soil, while microbes in sauerkraut and other fermented foods may be able to metabolize glyphosate and its also-toxic metabolite AMPA(126). Regenerative, pesticide-free farming, perfected over millennia by our ancestors, sustainably produces nutritious food while also healing the planet. Electrosmog can be significantly reduced by unplugging unused electronics and appliances, putting phones on Airplane mode, and using cabled internet.

Instead of drugging 64 percent of autistic kids with antidepressants, antipsychotics, amphetamines, benzodiazepines, and other neurotoxins(127), we could focus on proven, natural treatments, centered around nutrition, detoxification, and physical activity. Instead of looking toward ultra-profitable corporations with long histories of chronic criminal behavior for help, we could examine the thousands of peer-reviewed scientific papers ignored by the corporate media, the many books by parents who've healed their children's autism, and our indigenous ancestors—nature itself, the longest surviving system—for knowledge.

The more autistic among us, the more injured and excluded by civilization, blessed and cursed with reclusion and mental

independence, bent toward accuracy in numbers and language, could lead society in the gradual, rewarding work of healing.

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by Tao Lin

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