

THE GREAT CHAIN OF BEING

*The Courtier disdaineth the citizen;
The citizen the countryman;
the shoemaker the cobbler.
But unfortunate is the man who does not have anyone he can
look down upon.*

TOMAS NASH, 1593

*What really fascinated him was. . . . [P]ossessing them physically
as one would possess a potted plant. . . . Owning, as it were, this
individual.*

SERIAL SEX KILLER TED BUNDY

One of the most harmful notions of Western Civilization—and one of the most foundational—is that of the Great Chain of Being, or Latin *scala naturae* (which literally means ‘ladder or stairway of nature’), closely related to the divine right of kings. It is a hierarchy of perfection, with God at the top, then angels, then kings, then priests, then men, then women, then mammals, then birds, and so on, through plants, then precious gems, then other rocks, then sand. It’s a profoundly body-hating notion, as, according to those who articulated the hierarchy, those at the top—the perfect—are pure spirit; and those at the bottom—the imperfect, the corrupt—are pure matter, pure body. Then both men and women live in a battleground of spirit and body, with men tending to be put more in the box representing mind/spirit/better/perfected, and women tending to be put more in the box representing body/life/death/corruption/imperfection. In this construct, humans

are the center of attention, with those above humans being bodiless and perfected, and those below being fully embodied, imperfect, and having no mind. Of course, within each category there are sub-categories. So civilized man is far more perfected than 'primitive' man, who is barely removed from animals. You see this hierarchy everywhere within this culture, only now as we've secularized we've gotten rid of God and angels, leaving civilized (especially white) men at the top.¹⁰ And of course, those at the top get to use those below however they want. For example, men have access to the bodies of women, because men are higher on the hierarchy than women.

The Great Chain of Being has long been used to rationalize whatever hierarchies those in power wish to rationalize. It has been and is central to the notion of the Divine Right of Kings, to racism, to patriarchy, to empire. It is a very versatile tool.

The Great Chain of Being also underlies the modern belief that the world consists of resources to be exploited by humans. Traditional Indigenous peoples across the earth do not believe in this hierarchy; instead, they believe the world consists of other beings with whom we should enter into respectful relationship, not inferior others to be exploited. This is one reason these other cultures have often been sustainable.

Our perception of evolution is infected with this belief in the Great Chain of Being, as so often people, including scientists, think and write and act as though all of evolution was about creating more and more perfect creatures, leading eventually to that most perfect creature yet: us.¹¹



Did you know that mother pigs sing to their children?

And pigs dream.

And pigs have a good sense of direction, and can find their way home from great distances. They learn from watching each other. And they will outsmart each other: one pig will often follow another to food before grabbing it away; the other pig will then change her behavior so she won't get fooled again (which is more than we can often say for many humans).

Scientists have done experiments where they trained pigs to use their snouts to move cursors on video screens. They found the pigs could dis-

tinguish between (human) scribbles they had seen before and (human) scribbles they had not. Pigs learn this skill as quickly as do chimpanzees.

Pigs are capable of abstract representation. They can hold an icon in mind, then remember it till a later date. They can also remember verbal commands—and these commands are given in a human language; I'd like to ask how many words of pig you or I know—and when these commands are repeated several years later, they will still remember what to do.

* * *

I need to go into town this afternoon, so this morning I made a list to remind myself where I need to stop. Evidently, I can't remember my own instructions for even several hours. And who's the smart one?

* * *

Pigs form complex relationships with their peers. They have friends. Of course. How could anyone think otherwise? They sometimes work in pairs to open gates and will open other gates to release other pigs.¹²

* * *

I'll tell you the image I can't get out of my head. It's of a mother pig confined to a tiny crate, suckling her children. And singing. To her children. Human supremacists have stolen her freedom, but they've not been able to steal her capacity to love.

And humans—the ones who put her in the cage—are superior?

* * *

Here's another image I can't get out of my head. It's of a mother dolphin singing to her child. But they are both dying.

Here's why.

Mother dolphins nurse their young for eighteen months, longer than many humans. The mother dolphins love their children with fierceness

and loyalty. Even when a baby dolphin is caught in a tuna net, the mother will often not abandon the child, but move in close, and comfort and sing to her baby until both are drowned in the net.

Fishing companies acknowledge that most of the dolphins they kill are children and their mothers, who will not leave them even unto death.

* * *

And did you know that cats can count? A litter of kittens was caught in a house fire. Their mother kept returning to the fire to bring out her children, one by one. The fire and smoke blinded her. When the kittens were all safe outside she made sure she had them all by touching each one with her nose, counting.

She did not regain her eyesight. But while she took care of her kittens as they grew, she would always make sure to touch each one with her nose, to make certain they were all there.

* * *

Human supremacists could argue that she was not counting them, but instead smelling them.

I would argue these human supremacists are missing the point entirely.

* * *

Sometimes, because I eat meat (that doesn't come from factory farms), vegans have accused me of speciesism. But the truth is quite the opposite. I don't believe in the Great Chain of Being. I believe that plants are every bit as sentient as anyone else. Human supremacists draw the line of being/not-being between humans and nonhumans, with humans being sentient and having lives worth moral (and other) consideration, and nonhuman animals, not so much. Vegans often draw the line of being/not-being between nonhuman animals and plants, with nonhuman animals being (to varying degrees) sentient and having lives worth moral (and other) consideration, and plants, not so much. I don't see it that way. I believe that no matter whom you eat, you are eating someone.

Not infrequently, vegans have, seemingly without a sense of the irony of doing so, mocked my and many others' beliefs in plant sentience using the same scorn, and indeed sometimes the same words, with which many meat-eaters dismiss vegan beliefs in nonhuman animal sentience. Same scorn, same uncrossable line between meaningful subject and meaningless object; the line is merely drawn at a different place.

I try not to draw the line at all. When I was a child I didn't draw it. I don't think most of us do. And then I was, like nearly all of us, taught to draw that line, by religion, by science, by entertainment, by art, by day-to-day interactions with those who had themselves been taught to draw that line.

I remember twenty-some years ago I interviewed the great environmental philosopher Neil Evernden. He said he didn't believe in drawing a line between meaningful humans and non-meaningful nonhumans. I was confused, and curious, and asked him where, then, *would* he draw the line between those who are meaningful and/or sentient, and those who are not? I'll never forget the liberation—the homecoming—I felt when he asked, sincerely yet clearly rhetorically, “Why do we need to draw that line at all?”

* * *

Once that question is asked, meaning that the assumptions of human supremacism, and more broadly the Great Chain of Being, have begun to be questioned, the supremacists'—and it doesn't much matter whether we're talking about male, white, civilized, or human supremacists—next line of defense is often religion. We are superior because God says we are. It's a crude yet powerful defense of any supremacism because no one can prove you wrong. It's effectively a conversation stopper. Like the bumper sticker tells us: “God says it, I believe it, that settles it.” No thought required (or allowed). Nothing to dispute here. Move along.

So a couple of thousand years ago some people told themselves and their friends the rather flattering story that they alone among species were created in God's image (and that their culture was God's culture, and that their sex was God's sex), and that God told them to tell everyone else that God gave them dominion over the earth. The followers of these

stories have pillaged their way across the planet, bringing us to today, when all major US Presidential candidates call themselves believers in and followers of this story, and all of them are in their respective capacities presiding over what amounts to the final plundering and murder of the planet. But God gave Man dominion, didn't He?

As I said, it's crude, but effective as a defense. It says nothing about whether this human supremacism is in any way warranted. I was going to add that it also says nothing about whether this supremacism is moral, but of course it does, by declaring it supremely so, which is precisely the point and *raison d'être* of any (in)decent supremacist religion.

This brings us to what is often the next line of defense for different types of supremacism: science. The point here is not to discuss how science has been used to support slavery, genocide, gynocide, ecocide, white supremacism, male supremacism, and on and on. I've described this in book after book. The point here is also not to discuss how science is founded on and implicitly fosters human supremacism in that it is based on the notion of the intelligent, meaningful, superior, spectating, and speculating human subject who observes, measures, and controls (bends to his will, or, as scientific philosopher Richard Dawkins puts it, makes jump through hoops on command) a less- or unintelligent, meaningless, inferior, acted-upon object or Other: a resource. This is a subject I have also treated in book after book. The point here is not to discuss how science has from the beginning been about increasing human control over the rest of the world. The point here is not to discuss the great harm science (both as a worldview and in its applied forms) has done to the real world. Once again, I have discussed in book after book ways in which the real world is not better off because of the existence of science as a field of study. The point here is not to discuss how science is based on the same old Great Chain of Being, with Perfect and Abstract Reason (Scientific Law, Abstract Law, Abstract Economics, and so on) now substituted for a Perfect and Abstract Distant Sky God, and with machines now substituted for angels, since of course machines are far more perfect than humans, far more controllable and not subject to "human error." They also do not die. These are just a few of the ways science supports human supremacism. Remember, unquestioned beliefs are the real authorities of any culture.

The point I'm more interested in emphasizing here is that most of the scientific (and "common sense") arguments used to defend human supremacism (and the same is true for various scientific and "common sense" means that have been used to defend white or male supremacism) are tautological, in that humans are using themselves as the standard by which all others are judged. Here's another way to say this: humans choose human characteristics as the measure of what characteristics define superiority. It doesn't much matter whether you're a member of a religious group that decides you are the Chosen People and says that some God only you can hear told you that you and you alone are made in the image of this omnipotent God; or whether you're more modern and project an anthropocentric version of sentience onto the real world, whereby beings are considered sentient primarily based on how closely they resemble humans. In either case you're projecting this culture's destructive notion of a hierarchical Great Chain of Being onto a beautiful, vibrant, living, sentient world full of others.

That's fucking nuts. Or convenient. Or both.

Let me give an example.

Or maybe not. Honestly, after more than twenty books of talking about this bullshit, I'm sick of it. Let's cut to the chase. I'm superior to you. I'm smarter than you. I'm more sophisticated than you. My life is more meaningful than yours. You are, frankly, insignificant compared to me. I am a sentient being. You are a resource for me to exploit. It's that simple. How do I know this? Because I have more than twenty books out and you do not. Having more than twenty books out is the measure by which I have determined that we judge superiority, intelligence, sophistication, and a meaningful life. How do I know that's the measure? Well, I decided that's the measure. And besides, it's just common sense. I remember years ago I read (or maybe someone told me, or maybe I made it up) that the most complex logical task anyone can do is write a book. It doesn't actually matter to me whether it's true, because it sounds right, and also because it supports my superiority.

Look at it this way: obviously, I am able to think, and obviously I am able to communicate. By definition. Or else I wouldn't have more than twenty books out. And just as obviously, you are not able to think, and you are not able to communicate. Because if you did, you, too, would

have more than twenty books out! QED. I know what you're going to say: *Stephen King*. How can I be superior when Stephen King has written, at last count, more books than it is possible to count? But that's easy: I'm still superior because most of his books are novels. I understand that some of my books are novels, too, but mine still count and his don't because mine are strongly pro-feminist novels about fighting back against those who would abuse women or the land, which means they and I are both superior. Yes, I know King wrote *Dolores Claiborne*, but that book doesn't count, because, well, I'm sure you can see why it doesn't count, right? Same with *Rose Madder*, by the way. I'm still superior and smarter. Aren't I?

And don't even talk to me about all the other things you might have done. It doesn't matter. If you don't have more than twenty books out, I'm superior to you, smarter and more significant than you are. What? You say you raised two children to be happy and healthy adults? Well, first I would correct your language. You didn't "raise children"; you "produced offspring." And clearly producing offspring can't be a sign of intelligence or superiority; for crying out loud, mice produce offspring every six weeks. Producing offspring is not like writing, because writing is truly creative. It is the superior mind creating something out of nothing, with no help from anyone else. Producing offspring is just instinct, and takes no talent or creativity whatsoever: a female comes in heat, is mounted by (never makes love with) a male (while being watched through binoculars by David Attenborough, who already a bit-too-breathlessly described their courtship rituals), and their genes are passed on. Nothing but hormones and instinct. And same with the so-called raising of these so-called children. Instinct, instinct, instinct. Just like it is with so-called mother bears and so-called mother elephants (and while we're at it, let's call them mother trees and mother bacteria (LOL)). For crying out loud, if a "mother" mouse can "raise" her "babies," where's the talent? Where's the exclusivity? Birds do it. Bees do it. What makes *you* feel so special? So-called *procreation* (snort) is sure as hell not as much of a miracle as a book, which is a wondrous creation of the (or especially my) mind.

Now that we've so clearly shown we can dismiss mere bio "creation" as any sort of sign of intelligence or superiority—it's just instinct and "natural"—let's move on to other so-called creations. What about mon-

uments or other "great" engineering "achievements"? Why do my books qualify me as smarter than and superior to, for example, an engineer who "creates" a dam? Doesn't it take intelligence and superiority to build a dam? Well, apart from the fact that I—not dam builders—am defining the qualifying characteristics, I've only got one word for you: beavers. Seriously, beavers build dams, and what are beavers? They're nothing but rodents with big teeth. Instinct! (Never mind that beavers teach their children how to make dams.) And besides, beaver dams make some of the most biodiverse habitat in the world, and engineer-made dams kill rivers. So how does it feel, Mr. Big Shot Engineer, to be less competent than a fucking rodent with big teeth? Once again, where's the talent?

Another reason I'm superior to you is that I have a Bachelor's of Science degree in Mineral Engineering Physics. That proves I'm smart, in fact smarter than anyone who has ever lived, including those who died long before there was such a field of study as physics, and so never had the opportunity to get a degree in it. If they were so smart, they would have figured out a way. Likewise, my superiority based on my writing books extends over those who lived before the invention of the printing press; if they were as high as I on the Great Chain of Being, they would have overcome this trivial obstacle. And once again, I know what you're thinking: given the superiority of someone with a BS in physics (with an emphasis in BS), why, then, are those with a Master's or a PhD not even more superior? I think that's pretty obvious: I was smart enough to not stay in physics.

And here's another reason I'm smarter than and superior to you, and that my life is meaningful while yours is not: the color of my skin. It's white, or more precisely, if you don't mind just a tiny bit of completely-deserved arrogance, my skin color is flesh tone. Why does my white (flesh-tone) skin make me superior to you? Because I'm white, that's why.

Yet another reason I'm smarter than and superior to you has to do with my chest hair. I have just the right amount, which is some but not a lot. If I had a lot, of course that would make me too much like an animal, which would make me inferior. And if I had none, then I would make me too much like a woman, which would also make me inferior.

And how else do I know I'm smarter than you, that my life is significant and yours is not? Because I have a penis. I'm a man. A Man. I know

what all you other men are thinking: you're thinking that you have a bigger, better penis than I do. But let me assure you: you don't have mine. I have it on the very best authority, in fact the only authority that matters—mine—that my penis is special.

Just to be clear, if you don't understand or don't agree with what I wrote above, well, that's just another sign of your inferiority.

So here's a question: if you can easily see the offensiveness, arrogance, stupidity, falsity, and tautology of the above arguments when they apply to me declaring myself smarter than and/or superior to you, why do so few people see the same when it comes to humans declaring themselves smarter than and/or superior to nonhumans?

None of which alters the fact that humans *are* smarter than *and* superior to all others because we've got really big brains. As one rather narcissistic website proclaims, "The human brain is the most complex phenomena [sic] in the known universe."¹³

Really? The human brain is more complex than oceans? Than forests? Than the sun? This culture likes its narcissism undiluted. But what else would we expect from a culture whose members designate themselves *Homo sapiens sapiens*: the wisest of the wise?

There are at least four problems with the notion that humans are smarter and superior because of the size of our brains.

The first is that it's the same old tautology. In math, a tautology is "a logical statement in which the conclusion is equivalent to the premise." You could also call it circular logic. It's like the old joke, "The first rule of the tautology club, is the first rule of the tautology club." Here is the tautology: Humans have big brains. Humans decide big brains are a sign of intelligence and/or superiority. Therefore, because humans have big

brains, humans must be more intelligent and/or superior. Now, that was a surprise, wasn't it?

The second problem, and we'll discuss this more later, has to do with whether it is meaningful or appropriate to attempt to make intelligence comparisons across species. Humans are more intelligent at what? And so far as this larger exploration—human supremacism—humans are superior at what?

The third problem is that I'm not convinced we think only with our brains. I think we think partly with our brains, but also with our whole bodies, and with our surroundings. If creatures think only with brains, how, for example, do wasps, with brains only one-millionth the size of human brains, correctly differentiate between photographs of the faces of other wasps? I thought only "higher" animals, like, uh, the highest of the high animals, humans, were able to differentiate between photos of their friends. And how do honeybees know how to communicate through dance? As one writer states, "Honeybees don't have much in the way of brains. Their inch-long bodies hold at most a few million neurons. Yet with such meager [sic] mental machinery [sic] honeybees sustain one of the most intricate and explicit languages in the animal kingdom [sic]. In the darkness of the hive, bees manage to communicate the precise direction and distance of a newfound food source, and they do it all in the choreography of a dance. Scientists have known of the bee's dance language for more than 70 years, and they have assembled a remarkably complete dictionary of its terms, but one fundamental question has stubbornly remained unanswered: How do they do it? How do these simple [sic] animals encode so much detailed information in such a varied language?"¹⁴

My fourth problem with the notion that humans are smarter than and superior to all others because we've got really big brains is that if we *do* think with our brains, we have to recognize that there are plenty of beings with brains larger than ours. Hell, human beings 5,000 years ago had brains 10 percent larger than those of human beings today. I guess that means we're 10 percent stupider than we were back then. This would explain many things, from fundamentalisms of all stripes to pop culture to presidential politics to environmental policy to the existence of bright green environmentalism to the stupid arguments of human supremacists. Neanderthals also had larger brains than do humans, which might explain

why Neanderthals never created insurance advertisements claiming that something is so simple even a caveman can do it. In any case, if intelligence or superiority is measured by brain size, humans lose. Average human brain weight is somewhere around three pounds. Walrus are nearly as big, at almost two and a half pounds. Elephants are much larger, at more than ten pounds. And whales run from four and a half pounds up to more than seventeen pounds.

But wait, I can hear you say, changing the rules as we go, actual brain size isn't important. Brain size to body mass ratio is what leads to intelligence, and specialness, and all sorts of scrumptious wonderfulness that makes humans meaningful and everyone else meaningless! Of course a big animal needs a big brain to control its movements. Or something.

Let's leave off the fact that big animals don't really need big brains—the Stegosaurus weighed four or five tons and had a brain weighing less than three ounces—and take this one at face value. The human brain is about 2.5 percent of our body weight. Sadly for us, this is about the same as it is for mice. The brains of small birds make up about 8 percent of their body weight. The brains of shrews are about 10 percent of their body weight.

Well, that's embarrassing. I guess since we didn't win either of those contests, we'll have to come up with another way to determine intelligence. As one author puts it, while arguing that humans are unquestionably more intelligent than anyone else: "Neither absolute brain weight nor the relationship between brain weight and body size provide us with sensible criteria for comparing the intelligence of different species."¹⁵ Of course they don't; any sensible criteria would make it so we're number one.

We could have predicted that supremacists would be quick to propose lots of variants on this same human supremacist theme: for example, that intelligence is determined by the quantity brain size minus spinal column over body weight, and on and on.

It doesn't really matter, so long as we win.

But the whole "humans are smarter/superior because of brain size" theory has a bigger problem than either whales or shrews. The bigger problem is fungi. As I wrote in *Dreams*, "Did you know that fungi are intelligent? I didn't. But [Paul] Stamets writes [in *Mycelium Running*], 'I believe that the mycelium operates on a level of complexity that far

exceeds the computational powers of our most advanced supercomputers.' And he backs this up. Fungi demonstrate simple straightforward intelligence (even measured by our own narcissistic standards); if you put a slime mold¹⁶ at one end of a maze, it will grow randomly until it finds food. If you take a piece of this slime mold and put it in the same maze, it will remember where the food is, and grow directly toward it, with no false turns. Further, if you compare the information-transferring organization of mycelium to the organization of the Internet, you'll find that, as Stamets says, the 'mycelium conforms to the same mathematical optimization curves that Internet theorists and scientists have developed to optimize the computer Internet.' Or rather, the Internet conforms to the same curves as the mycelium." Fungi can be seen as huge neurological nets. Back to *Dreams*, where I begin by citing Stamets, "I believe that mycelium is the neurological network of nature. Interlacing mosaics of mycelium infuse habitats with information-sharing membranes. These membranes are aware, react to change, and collectively have the long-term health of the host environment in mind."

"I had to read that last phrase three times. But now I get it.

"Have you ever wondered, for example, how tiny trees survive in the shade of their much-larger elders?"

"I asked Paul Stamets about this.

"He answered, 'If you've been in an old-growth forest, you've probably seen hemlock trees on rotting nurse logs. They're usually the first trees to come up in these highly shaded environments. They have very little exposure to light. When these small saplings were dug up and taken to a greenhouse-like environment and given a similar amount of low light, they all died. The question became, where are these young trees getting their nutrients? So researchers radioactively tagged carbon and watched the translocation of carbon in the forest. They found that birch and alder trees growing in more riparian habitats along rivers—where there is more sunlight—were contributing nutrients to the hemlocks via mycelium.'

"I said, 'Wait. Are they . . . ?'

"He said, 'Yes. The mycelium—which, if you remember, run all through the forest soil and connect different parts of the forest to each other—are transferring nutrients from trees of one species who have nutrients to spare to trees of another species who need nutrients or they

will die. The mycelium is taking care of the health of the forest. I think they are doing this because they understand that the health of the biodiversity of the ecosystem speaks to the survival of these fungal populations. I think these fungi have come to learn through evolution that biodiversity and resiliency of ecosystems are for the benefit of all the members, not just for one.”

Above, I said that fungi can be seen as huge neurological networks. Let's step away from the scientific language and say *brains*. Now let's talk about how huge these brains can be. A final time from *Dreams*: “Fungi can grow to be immense. A single *Armillaria ostoyae*—or honey mushroom—growing in Oregon covers 2,200 acres, or more than three square miles. It's estimated to be 2,400 years old, and weighs more than six hundred tons. For hundreds and then thousands of years, this fungus has lived below and at the surface of the soil. It has nurtured tree upon tree, forest upon forest. It has attended to the needs of these trees, the needs of this forest. It has fed them. It has witnessed fire and rain, snow and drought. It has been parent and child to this forest; lover and friend; killer, decomposer, and creator. And through all of this it has built up the soil upon which all depend. Unfortunately, now it has also witnessed chain saws and clear-cuts. It has witnessed logging-induced destruction of soil. It has suffered herbicides and fungicides. It has suffered logging roads that have cut it into pieces. It may very well be witnessing the end of the forest, the forest it has lived with and loved so well.”

Nearly all of the mass of this fungus consists of neurological network, so I guess that throws both our “brain size” and “brain-to-body-mass ratio” criteria out the window.