



THE BLANK SLATE

The Modern Denial of Human Nature

Human nature is a topic of perennial interest because everyone has a theory about it. All of us have to anticipate how people will react to their surroundings, and so we all need theories, implicit or explicit, about what makes people tick. Much depends on our theory of human nature. In our private lives we use it to win friends and influence people, to manage our relationships, to bring up our children, and to control our own behavior. Its assumptions about learning guide our policies in education; its assumptions about motivation guide our policies in law and politics. Steven Pinker, Johnstone Family Professor of Psychology at Harvard University, describes the doctrines that underpin today's dominant secular theory of human nature and how advances in the sciences of the mind, brain, genes, and evolution are challenging these doctrines. Pinker argues that the influential *blank slate* doctrine is flawed on many levels and gives rise to the modern denial of human nature.



MISSION CONTROL

- ✗ The dominant theory of human nature in modern intellectual life is based on the doctrines of the blank slate, the noble savage, and the ghost in the machine; these doctrines are being challenged by the sciences of the mind, brain, genes, and evolution.
- ✗ Behavioral geneticists have found that all behavioral traits are partially heritable—challenging the doctrine of the blank slate.
- ✗ Evolutionary psychologists and anthropologists have underscored the ubiquity of conflict in human affairs—challenging the doctrine of the noble savage.
- ✗ Modern science has shown that we have every reason to believe that when the physiological activity of the brain stops, the person ceases to exist—a direct challenge to the doctrine of the ghost in the machine.
- ✗ Even if there are dangers in embracing too strong a doctrine of human nature, there are also dangers in denying human nature.



Doctrines of Human Nature

The long-standing Judeo-Christian theory of human nature, based on a fundamentalist interpretation of biblical events, was replaced in the 20th century by a secular theory of human nature grounded in three doctrines, commonly referred to as *the blank slate*, *the noble savage*, and *the ghost in the machine*.

The first doctrine, the blank slate, is generally associated with the English philosopher John Locke. It posits that we all are born with nothing more than a few basic instincts wired into our brains, and the rest of our nature is determined by experience. The blank slate was not just an empirical hypothesis; it had moral and political import in Locke's time and still does today. It implied that dogmas, such as the divine right of kings, could not be treated as self-evident truths that just grew out of the structure of the brain, but had

to be *justified* by experiences that people share, and hence can debate. It undermined the hereditary royalty and aristocracy, who could claim no innate wisdom or virtue if their minds started out as blank as everyone else's. And by the same token, it undermined the institution of slavery by holding that slaves could not be considered innately inferior or subservient.

The second doctrine, the noble savage, is commonly associated with the French philosopher Jean-Jacques Rousseau, who believed that nothing could be more gentle than man in his primitive state. However, Rousseau's

contemporary, Thomas Hobbes, painted a rather different picture of life in the state of nature, which he famously described as "solitary, poor, nasty, brutish and short."

Much depends on which of these armchair anthropologists is right. The noble savage certainly is the more appealing doctrine and, like the blank slate, continues to be influential. It's behind the widespread respect for everything natural—natural foods, natural medicines, natural childbirth, and so on—and a distrust of anything man-made. It's behind the unfashionableness of authoritarian styles of child rearing, which were common in this country until just a couple of generations ago. And it's behind the near-universal understanding of our social problems as repairable defects in our institutions, rather than a traditional view that would ascribe them to the inherent tragedy of the human condition.

The third doctrine, which sometimes accompanies the blank slate and noble savage, is associated with another

Frenchman, René Descartes, who philosophized that the mind or soul of man is entirely different from the body. This idea was later ridiculed as "the doctrine of the ghost in the machine" by the English philosopher Gilbert Ryle.

The ghost in the machine, however, also has considerable appeal. People don't like to think of themselves as heaps of glorified clockwork. Machines, we like to think, are insensate and have some workaday purpose, such as grinding corn or sharpening pencils. Humans, in contrast, are sentient, and have some higher purpose, such as love, worship, and the pursuit of knowledge and beauty. Machines follow the ineluctable laws of physics, whereas human behavior is freely chosen. With choice comes optimism about the possibilities for the future, and with choice also comes responsibility—the power to hold others accountable for their actions. Finally, if the mind is entirely separate from the body, that holds out the hope that the mind can survive the death of the body, an idea whose appeal is all too obvious.



Debunking the Doctrines

There are serious problems with each of these doctrines, beginning with the blank slate. The main problem is that blank slates don't do anything. No one can deny the central importance of learning, culture, and socialization in all aspects of human experience. The question is, how do they work? Today the sciences of human nature have threatened the blank slate by trying to delineate what has to be present in the mind for learning to occur in the first place. The cognitive sciences have tried to explicate the innate mechanisms that have to be in place to do the learning that obviously gets done. These include, among others, the basic concept of an enduring object and lawful causation, which can be seen even in young infants; a number sense that allows us to grasp quantity of number; a "theory of mind" or intuitive psychology with which we understand the mental states of other people; and a language instinct that allows us to communicate our own thoughts and feelings via words.

Neuroscience has also challenged the doctrine of the blank slate by showing that there's a complex genetic patterning to the brain—a prime example being the wiring diagram of the primate visual system comprising some 50 distinct areas interconnected in precise ways, largely laid out in the course of prenatal development.

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pair of twins, one of whom was brought up as a Catholic in a Nazi family in Germany, the other of whom was brought up by a Jewish father in Trinidad. Nonetheless, when they met each other in a laboratory in their 40s, both walked in wearing identical navy blue shirts with epaulets. Both of them kept rubber bands around their wrists. Both of them, it turned out on questioning, flushed the toilet before using it as well as after and liked to pretend to sneeze in crowded elevators to watch the other people jump.

Now, some of these similarities are bound to be coincidences—what you would find if you compared *any* two people's autobiographies in enough detail. But the extent of similarities between identical twins is rarely, if ever, found in fraternal twins who were separated at birth, and it has been corroborated by numerous studies using quantitative psychological tests, which show that identical twins separated at birth are highly correlated in measures of intelligence and personality, and in quantifiable behavior as well, such as the likelihood of getting divorced or being a smoker, the number of hours of television watched, and political attitudes. This leads to what behavioral geneticists call the First Law of Behavioral Genetics: that all behavioral traits are partially heritable.

The doctrine of the noble savage has also been threatened by findings in the sciences of mind, brain, genes, and evolution. Behavioral genetics has shown that among the heritable traits are an antagonistic personality, a tendency toward violent crime, and a lack of conscience, or psychopathy. Neuroscience has identified brain mechanisms associated with aggression, and evolutionary psychology and anthropology have underscored the ubiquity of conflict in human affairs—as one would expect from the outcome of a Darwinian process.

But it's the doctrine of the ghost in the machine that has been subject to the most withering threats from modern science. Cognitive science has shown that emotions, motives, and goals can be understood in cybernetic terms as mechanisms of feedback and control. Neuroscience has shown that all our experiences, thoughts, feelings, yearnings, and emotions consist of physiological activity in the tissues of the brain. We know that the mind runs on electrical impulses, as can be seen by our increasing ability to record the electrophysiological signatures of thought and emotion, and by the fact that if you stimulate the exposed brain during neurosurgery, the person will have a vivid experience indistinguishable from reality. We know that the brain is also a chemical organ, as demonstrated by the effects on personality of psychoactive drugs, both recreational and therapeutic. We know that the brain has a staggering complexity—a hundred billion neurons interconnected by a hundred tril-

lion synapses—which is fully commensurate with the staggering complexity of thought and behavior. And we have every reason to believe that when the physiological activity of the brain stops, the person ceases to exist.

The Denial of Human Nature

It is essential to look carefully at the serious moral and political issues that scientific discoveries raise. Four key issues are at stake in the human nature debate: the fear of inequality, the fear of imperfectability, the fear of determinism, and the fear of nihilism. I argue that all four fears are non sequiturs; that is, they don't logically follow from recent discoveries or theories, but arise because the discoveries are so novel that people haven't yet had a chance to digest their implications. And even if there are dangers in embracing too strong a doctrine of human nature, there are also dangers in *denying* human nature. For that reason we should study human beings objectively without trying to put a political or moral thumb on either side of the scale.

First, the fear of inequality. The idea is that if we're blank slates, we must be equal. That follows from the mathematical truism that zero equals zero equals zero. But if the mind has any innate organization, according to this fear, then different races, sexes, or individuals could be biologically different, and that would condone discrimination and oppression.

This line of reasoning confuses the value of *fairness* with the claim of *sameness*. When the framers of the Declaration of Independence wrote, "We hold these truths to be self-evident, that all men are created equal," they surely did not mean "We hold these truths to be self-evident, that all men are clones." Rather, a commitment to political equality means two things: First, it rests on a theory of universal human nature, in particular, universal human interests, as when the Declaration continues by saying that "people are endowed...with certain inalienable rights, and that among these are life, liberty, and the pursuit of happiness." It's also a commitment to prohibit public discrimination against individuals based on the average of certain groups they belong to, such as their race, ethnicity, or sex. And as long as we have that policy, it doesn't matter what the average statistics of different groups turn out to be.

The second fear is the fear of imperfectability—the dashing of the ancient dream of the perfectibility of humankind. It runs more or less as follows: if ignoble traits such as selfishness, violence, or prejudice are innate, that would make them unchangeable, so attempts at social reform and human improvement would be a waste of time. But this, too, is

unsound. Even if people do harbor ignoble motives, they don't automatically lead to ignoble behavior. That disconnect is possible precisely because the human mind is a complex system of many parts, some of which can counteract others, such as a moral sense, cognitive faculties that allow us to learn lessons from history, and the executive system of the frontal lobes of the brain that can apply knowledge about consequences and moral values to inhibit behaviors.

The third fear of human nature is the fear of determinism: if behavior is caused by a person's biology, he or she can't be held responsible for it. What is the suitable response to the fear of determinism? First we have to think about what we mean when we say we "hold someone responsible." Ultimately what it means is that we impose *contingencies* on their behavior—reward, punishment, credit, blame. For example, "If you rob the liquor store, we'll put you in jail." These contingencies are *themselves* causes of behavior—environmental causes, to be sure, but causes nonetheless—and we impose them because we think that they will change behavior in the future. They will lead, for example, to fewer people robbing liquor stores. This logic does not appeal to an immaterial soul, a capricious ghost, or some strange entity called free will, but rather to parts of the brain that can anticipate the consequences of behavior and inhibit it accordingly. We can accept this influence on the brain systems for inhibition even as we come to understand the brain systems for temptation.

Finally, there's the fear of nihilism—the fear that biology strips life of meaning and purpose. It says that love, beauty, morality, and all that we hold precious are just figments of a brain pursuing selfish evolutionary strategies. For most people who ask the question "Why am I here?" the answer "To pass on your genes" is less than comforting. To address this discomfort, one first has to distinguish between religious and secular versions of the fear of nihilism. The religious version is that people need to believe in a soul that seeks to fulfill God's purpose and is rewarded or punished in an afterlife. According to this fear, the day that people stop believing in a soul, we will have, in Nietzsche's words, "the total eclipse of all values."

The answer to the religious fear is that a belief in a life to come is not necessarily such an uplifting idea, because it devalues life on Earth. Think about why you sometimes mutter the cliché "Life is short." That realization is an impetus to extend a gesture of affection to a loved one, to bury the hatchet and end some pointless dispute, to vow to use your time productively instead of squandering it. I would argue that nothing makes life more meaningful than a realization

that every moment of consciousness is a precious gift.

What about the secular fear of human nature? It's not just people who believe in an afterlife who are troubled by the idea that we're just products of evolution. It is common to confuse the scale of human time—what is meaningful to us, how we want to live our lives today with the brains we have—and evolutionary time, which is the process that determines why our brain causes us to have those thoughts in the first place. Another way of putting it is that even if in some metaphorical sense our genes are selfish, and if evolution is amoral and without purpose, that doesn't mean that the products of evolution, namely, ourselves, are selfish, or that we are amoral and without purpose.

Conclusion

I've suggested that the dominant theory of human nature in modern intellectual life is based on the doctrines of the blank slate, the noble savage, and the ghost in the machine, and that these doctrines are being challenged by the sciences of mind, brain, genes, and evolution. The challenges are also seen to threaten sacred moral values. But, in fact, that doesn't follow. On the contrary, I think a better understanding of what makes us tick, and of our place in nature, can *clarify* those values. This understanding shows that political equality does not require sameness, but rather policies that treat people as individuals with rights; that moral progress does not require that the mind be free of selfish motives, only that it have other motives to counteract them; that responsibility does not require that behavior be uncaused, only that it respond to contingencies of credit and blame; and that meaning in life does not require that the process that shaped the brain have a purpose, only that the brain itself have a purpose.

Finally, I've argued that grounding values in a blank slate is a mistake. It's a mistake because it makes our values hostages to fortune, implying that some day discoveries from the field or lab could make them obsolete. And it's a mistake because it conceals the downsides of denying human nature, such as mystifying the rationale behind responsibility, democracy, and morality, and the devaluing of human life on Earth.

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