THE SCIENCE OF HUMAN NATURE AND THE HUMAN NATURE OF SCIENCE

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In 1889, the German biologist August Weissmann showed that mice whose tails are cut off do not produce short-tailed offspring. It was a step forward for science, but a step backward for civilization. Weissmann's discovery was good for science because, contrary to what many scientists had believed, acquired characteristics are not, of course, heritable. Weissmann's experiment closed the book on the neo-Lamarckianism that many scientists had adopted in order to blunt the edge on Darwin's theory of natural selection. Darwin had left evolution to chance, and had pretty much ruled out the inevitability, if not the possibility, of progress. "Never use the word[s] higher & lower," he had once written in a note to himself.[1] But if there was something human beings could do to affect the course of evolutionary development, then the story of evolution might have a happy ending after all. If we just

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kept cutting those nasty-looking tails down, generation after generation, we might eventually get rid of them altogether.

Weissmann's demonstration was bad for civilization, therefore, for precisely the same reason that it was good for science. If characters are fixed, if the genome is hermetically sealed off from the environment, then biological characteristics must be immutable. We think of Lamarckianism as retrograde, but, in a century in which white Americans and Europeans believed, almost universally, that the human races are ranked hierarchically, from higher to lower, Lamarckianism held out the hope that with dedicated exposure to Christian civilization, the lesser races might someday be raised up. If enlightenment is not heritable, though, if the tails have to be cut off again in every generation, there was no hope.

Soon after Weissmann announced his conclusions, a huge wave of immigration pounded the United States. Between 1901 and 1910, 8.8 million immigrants were admitted to the United States; 70 percent were from Southern and Eastern Europe, principally Catholics and Jews. Between 1911 and 1920, another 5.7 million people came from abroad, 59 percent of them from Southern and Eastern Europe. By 1910, 40 percent of the population of New York City was foreign-born. At a time when nationality was defined racially, and race was conceived hierarchically, there was widespread anxiety that the presence of large numbers of non-Anglo-Saxon peoples would lead to national degeneration. This is why, in the early years of the twentieth century, the doctrine of eugenicism was not limited to rabble-rousers and bigots. Many of the most educated and progressive thinkers of the time were dedicated eugenicists: Theodore Roosevelt; Oliver Wendell Holmes, Jr.; the sociologist Edward A. Ross; the political scientist Harold Laski; David Starr Jordan, the president of Stanford; Charles William Eliot, the president of Harvard; and even the Marxist revolutionary Emma Goldman.

At the height of the panic over immigration in the United States, there were several efforts to buck the tide of nativist sentiment and assert the virtues of ethnic pluralism. Some of these texts are read today as brave prolepses of multiculturalism—for example, Horace Kallen's anti-anti-immigrant essay, "Democracy Versus the Melting Pot," which he published in 1915. Kallen's essay was written as a response to the eugenicist Edward Ross, who had just published a collection of essays oppos-

ing immigration. But in fact, Kallen's science was exactly the same as Ross's. Kallen was a recovered Jew—that is, he had lapsed from the faith of his father, a German immigrant who had become a Boston rabbi, but had rediscovered his Jewishness as a student at Harvard, under the influence of a professor who persuaded him that the Puritans had Hebrew blood. This reconversion inspired Kallen to his core belief: fulfillment in life is a function of cultural identity; cultural identity is a function of ethnicity; and ethnicity is immutable. The most famous line in Kallen's essay on "Democracy Versus the Melting Pot" is this one: "Men may change their clothes, their politics, their wives, their religions, their philosophies, to a greater or lesser extent; they cannot change their grandfathers."[2] Or as he put it again a few years later: "An Irishman is always an Irishman, a Jew always a Jew. . . . Irishman and Jew are facts in nature; citizen and church-member artefacts in civilization."[3]

Kallen thought that racial ancestry was an unalterable constituent of selfhood. This meant, as he put it, that the happiness people pursue in their lives "has its form implied in ancestral endowment."[4] Your hopes and fears, your limitations and your potential, are already there at birth, in your genes. Kallen did not believe that the races (or nationalities, which he defined racially) were equal in natural endowment. He thought that some races were higher than others, and that each race, or ethnic group, had its own inherent characteristics. Nor did he believe in race-mixing, ethnic interbreeding, although he thought that since people generally prefer their own kind, this was not as great a danger as people like Edward Ross feared. Kallen only believed that each ethnic group deserved equal respect—so long as it kept its social place. He espoused a noninvidious form of ethnic and racial segregation: separate but equal, equal as long as separate, higher distinct from lower. Science had let him see no alternative.

There is a great battle going on in our intellectual culture today. It is a battle between people who believe that science opens new possibilities for human life and people who worry that it closes them. I spend most of my time around the second kind of people, people who regard science as more or less an agent of social control disguised as a neutral observer. These people think that scientists are reductive, and that they

are too quick to leap from data to prescription. More than this, they think that science refuses to admit the reality of anything that it cannot measure. The great web of metaphor and image that people use to describe and make sense of their experience in the world is dismissed by scientists, who prefer to talk about things like genes and neurotransmitters instead. But to the skeptics, genes and neurotransmitters are just as much imaginary constructs as witches' curses and the Oedipal complex, and a lot less suggestive. They seem hopelessly underpowered explanatory devices, boxed in by the dogmatics of empiricism.

The type of racial science that informed the thinking of people like Ross and Kallen is now, thankfully, discredited. No one believes that the nonheritability of artificially shortened mouse tails has implications for immigration policy. Contemporary anti-immigrationists rely on different arguments. But there are new developments in science today that, in their popularized form, seem to many people to propose restrictions on human possibility. These are behavioral genetics and evolutionary psychology, sometimes referred to as "the new sciences of human nature."

In 1996, scientists announced the discovery of the gene for anxiety. It made the front page of the *New York Times*, which reported that people who are fretful, anxious, and neurotic—"kvetches," in the *Times*'s helpful translation into regional dialect—have a shorter version of a certain gene (*SLC6A4*, which is the serotonin transporter gene on chromosome 17q12, if you want to look it up) than do people of sunny disposition. The only sensible conclusion to be drawn from this report was that if you're a worrier, it is not because you have a lot of things in your life to be worried about. It's just because you're a worrier. Does this make people who worry feel better? Of course not. They *can't* feel better. That's the whole point.

The discovery of the worry gene followed closely on the discovery, reported earlier that year, of the gene associated with the taste for novelty and excitement, the so-called "gene for bungee-jumping." Now, it's easy to make fun of these genes for behaviors, like bungee-jumping, which were not even invented back when our species emerged from the protozoan slime. But the truth is that they are immensely clarifying contributions to thought, for they reverse the usual relation between accident and necessity in human life. For people who lived in New York City, the obvious question raised by the discovery of the gene for anxiety was, if crabby and kvetchy behavior is genetically determined,

why does New York City have so much of it? The answer must be that New Yorkers are not neurotic because they live in New York. They live in New York because they're neurotic.

Once this principle has been grasped, many prejudices fall away. Cabdrivers are not impatient because they're cabdrivers; they're cabdrivers because they're impatient. Taking care of small children does not make people feel stressed out; feeling stressed out is what makes people take care of small children. And so on. This is determinism, but it is determinism of a deeply appealing kind. We used to think of our moods and tastes as byproducts of the social and personal relations in which we happened to be stuck. Now we can see that the social and personal relations we are stuck in are only the accidental consequences of our tastes and moods. Many are born impatient; the lucky ones become cabdrivers. The animus seeks its animal. The circularity takes your breath away. It is as though scientists were to explain the behavior of the mosquito by showing it to have a gene for being annoying.

Still, every simplification sooner or later leads to complications, and genetic explanations for human personality and behavior, as delightfully shorn of metaphysical distractions as they seem to be, are no exception. First of all, there is, when you are explaining the basis of personality, the question of what a personality really is. Peter Kramer, in *Listening to Prozac*, a more thoughtful book than it got credit for being when it came out, noted the odd phenomenon of patients who told him, after they were on an anti-depressant medication, that they finally felt "like themselves." For, of course, you can deal with the side effects of having a shortened serotonin transporter gene—the anxiety gene—by taking a selective serotonin reuptake inhibitor, or SSRI. This makes you lose the sensation of anxiety, and the result, even if you have always been an anxious person, can indeed be to make you feel "like yourself." Kramer noted that this was a bit of a paradox: how is it that the chemically altered self feels more real, more genuine, than the biologically natural self?

But it is a paradox only if you assume that the self, or personality, is a stable entity to begin with. This is not a topic to be approached glibly. The subject of identity is a sea on which many philosophers have lost their way. Consider a bundle of sticks from which one stick is removed, then another, and then another. After the removal of which stick does the bundle of sticks cease to be a bundle of sticks? Or take the case of

a knife whose blade has been replaced once and whose handle has been replaced three times. What grounds do we have for calling it "the same knife?" As with things, so with selves. The eighteen-year-old who is ready for anything, the puller of all-nighters, the consumer of three pizzas and a six-pack, on the one hand, and the sagging commuter of twenty years later, who staggers home hoping only to have the stamina to make it through the first half of Charlie Rose, on the other, are nominally the same person. But by virtue of what? Of having the same Social Security number? If we have a self, it is never the same self for very long. Identity is the artificial flower on the compost heap of time.

So that when we begin to talk about the self on antidepressant medication, we are immediately aware of a certain fugitive quality in the object of our attention, and chemistry need have nothing to do with it. Mood transformers have many agents. The person who has just polished off an entire pint of coffee ice cream with cookie dough is not the same person who opened the refrigerator door fifteen minutes earlier. The person who spent the night cleaning up after a six-year-old with a stomach virus is not the calm and obliging person who went to bed the night before. The person who paid ten dollars to sit through *Gangs of New York* is not the person who thought this sounded like a really good movie. Probably the only thing to say about our "real" self is that it is the self we are least embarrassed about owning up to. The rest of the time, we're, well, just not ourselves.

In short, if genetic behaviorism is a kind of determinism, it is a very indeterminate kind of determinism. And the reason is that all behavior within the normal range is overdetermined anyway. There are too many inputs for us to be able to distinguish the true cause from what we might call, on an intelligence analogy, causal noise. If one gene is telling you to bite your fingernails, seven other genes might be pumping out the neurological equivalent of Easy Listening music, telling you to lay back and chill out. There are, as well, the environmental triggers, the mental history of the organism, the Rocky Road ice cream, the Prozac, the anhedonic effect of Charlie Rose, and all the rest. Another way to put it is to say that gene-based explanations for human behavior belong to a kind of polytheistic view of the universe. If you think about it, there is not that much difference between saying, "He jumped off the bridge because the gods made him crazy," and saying, "He jumped because his dopamine made him do it." Genetic explanation

is a way of ascribing personality and behavior to some involuntary cause. In the ancient world, there were many gods, and if one god put a spell on you—if one god made you a bungee-jumper, let's say—there were plenty of other gods around who could take the spell off. And so it is with genes and medications: few powers are so great that we cannot summon other powers to thwart their effects.

It is interesting that just as genetic explanations for behavior are becoming popularized, there is a parallel fascination with cultural explanations for behavior. In between the old polytheism of the ancient world and the new polytheism of the genome project, there were, of course, a number of fairly successful monotheisms, single-variable explanations that won wide adherence. In between "Circe put a spell on her" and "Her genes made her do it," there were, besides the major religious monotheisms, "her subconscious rage against her parents made her do it," "the iron law of history made her do it," and "market forces made her do it." Those monotheisms are still around, but cultural explanations are by definition polytheistic; they are the "his epistemology made him do it" explanations. The idea is that personality and behavior are determined by cultural input, which is why different cultures produce different sorts of human beings: some are warlike, some are peaceful, some are sexist, some are androgynous, and so on. There is a basic contradiction between the gene-based polytheisms and the cultural polytheisms, since what is wired into the hardware cannot be reconfigured by the software. You can't believe that certain people have a naturally selected gene for aggression and, at the same time, that people become violent by watching *The Terminator*. Most people are likely to want to believe a little of both—that people are what they are, and that they might be made better by going to church more regularly. But one group of gods has got to go. It's like having the Greek gods and the Incan gods in the same pantheon.

What is exasperating to the nonscientific mind about genetic explanations is that the people who advance them speak as though genes are some sort of irreducible reality, as though they are a power behind human affairs that cannot be abrogated or countervailed against. It is a version of the early-twentieth-century belief that since the genome is sealed off from environmental effects, people cannot fundamentally be changed. This is sometimes the claim of evolutionary psychologists: they write as though biology is fate. The trouble with evolutionary

psychology seems to me to be that it is not really psychology. Take, for example, two recent works that study the effects of parenting on children's personalities: Judith Harris's *The Nurture Assumption* and Steven Pinker's *The Blank Slate*. The authors claim that shared family environment—that is, parents—have little or no influence on a child's personality. (Strictly speaking, they claim that parenting does not account for the variation in differences in personality, which is what statistical science measures.) They point out that biological siblings who have been reared together are not more alike, or less different, than biological siblings who have been reared in separate families. They conclude that half of personality is the product of what they call the unique environment—that is, the child's personal history—and half is the product of genes. The effect of parenting is statistically insignificant. Harris's argument is that children's peers are the principal source of the nongenetic input. Parents used to obsess about reading bedtime stories regularly to their children. These new sciences of human nature have established that a belief in the civilizing effects of bedtime stories on a child's personality is a modern superstition.

What *is* personality to people like Harris and Pinker, though? The answer is OCEAN: the personality attributes in the Five Factor Model. In this model, personality has exactly five dimensions: people are, in varying degrees, either open to experience or incurious; conscientious or undirected; extroverted or introverted; agreeable or antagonistic; neurotic or stable. OCEAN is the acronym for these spectra. There is no need for finer tuning, because OCEAN accounts for everything. As Pinker puts it, "Most of the 18,000 adjectives of personality traits in an unabridged dictionary can be tied to one of the five dimensions."[5]

What the genetic claims about parenting boil down to, therefore, is that parents cannot turn a fretful child into a serene adult. But parents can make their children into opera buffs, water-skiers, painters, food connoisseurs, bilingual speakers, trumpet players, and churchgoers. Parents introduce their children to the whole supra-biological realm. The claim that chronic anxiety is biological is proven by the fact that an SSRI can relieve it. But that's just the *biology*. The *psychology* is everything that the organism does to cope with its biology. Anxious people develop all kinds of strategies for overcoming, disguising, avoiding, repressing, and even exploiting their tendency to nervousness. I know, because I am someone who, for most of his life, has disguised an

inveterate anxiety with an affect of coolness. No one ever reads me as an anxious person, and seeing myself in that mirror helps me to manage my anxiety. Am I therefore an anxious person or a calm person? Strategies like these are acquired—people aren't born with them—and they are constructed from the elements the environment provides. The mind can work only with what it knows, and one of the things it knows are parents, who often become major players in the psychic drama of anxiety maintenance. The mere fact of having the gene for anxiety determines nothing, which is why some anxious people become waterskiers, some become opera buffs, and some are most comfortable speaking in front of large groups. Some anxious people, it's true, sit and stare out the window, brooding on the fact that their parents did not read them enough bedtime stories. These people are unlikely to be relieved by learning that genetic science has determined that bedtime stories are overrated.

The most unfortunate aspect of contemporary evolutionary psychology, in its popularized form, is the obsession with the mean point of the normal distribution. Evolutionary psychologists seem to forget that the mean is a mathematical construct, corresponding to no actual human being. It represents, in many cases, not the acme of attainment, but, on the contrary, the lowest common denominator. But it is often treated as though it were some sort of species norm, the bull's-eye at which civilization aims. The classic case of this kind of apotheosis of the average is the study that discovers the ideal female face by blending all the features people identify as most beautiful. The result is a homogenized, anodyne image with very little aesthetic or erotic appeal. This is because people don't go for faces that deviate from the ideal because they can't have the ideal. The deviation is precisely what makes those faces attractive.

And so it is with most of the things we care about in life: food, friends, recreation, art. Biology reverts to the mean; civilization does not. The mind is a fabulator. It is designed—by natural selection, if you like—to dream up ideas and experiences away from the mean. Its instinct is to be counter-instinctual; otherwise, we could put consciousness to sleep at an early age. The mind has no steady state. It is never satisfied. It induces the organism to go to fantastic lengths to develop capacities that have no biological necessity, and that in some cases, such as bungee-jumping, are completely counter-indicated by

biological conditioning. The more defiant something is of the instinctual and the habitual, the more highly civilization prizes it. This is why we have the *Guinness Book of World Records*, the Gautama Buddha, and the Museum of Modern Art. They represent the repudiation of the norm. The composite beautiful face tells us as much about beauty as a dish containing all the flavors people identified as tasty would tell us about cuisine. Darwin's fundamental insight as a biologist was that among groups of sexually reproducing organisms, the differences are much more important than the similarities. If human beings were identical, a single change in the environment could wipe out the species. Similarity, ultimately, is death. So why do Darwin's contemporary followers want to make what people have most in common into a social good? The true good is the different, not the same.

That's what Horace Kallen was trying to say, though, back in 1915, in his article on "Democracy Versus the Melting-Pot"; and as we have seen, he made that argument by essentializing race and nationality, making them immutable. Since groups *are* different, since you can't do away with difference without bringing down the level of the whole, then we must account difference a social good and preserve it: that is basically what Kallen said. So if we value difference and deviance on Darwinian principles, as well as on principles of fairness and tolerance and even (though it is in short supply today) humility, how do we avoid doing what Kallen did, and root those differences in biology? Rooting them in culture is no better: both explanations, biological and cultural, tend to be deterministic, and determinisms are false not because behavior is not determined, but because it is overdetermined. No single cause accounts for the whole.

Another way was found by a friend of Horace Kallen's, a fellow Harvard graduate named Alain Locke. Locke's situation was not exactly parallel to Kallen's. Locke's situation was not exactly parallel to anyone's. He had heart trouble and an unusually slight physique (he was five feet tall and weighed ninety-nine pounds); he was homosexual; and he was black. He had come to Harvard from Philadelphia, where his parents were schoolteachers, and where he had been a brilliant student in mostly white schools. His undergraduate career at Harvard was similarly distinguished. But he was careful not to associate too much

with other black students at Harvard because he regarded his life as an experiment in blocking out physical accidents like race. He was the first African American to win a Rhodes Scholarship, and the fact received considerable attention, but it was not how he wished to be known. "I am not a race problem," he wrote to his mother after winning the Rhodes. "I am Alain LeRoy Locke."[6]

When Locke arrived at Oxford on his Rhodes, though, his race did become a problem. Five Oxford colleges denied him admission, and the Southern Rhodes Scholars in his class, who had already formally appealed to the Rhodes trustees to overturn Locke's award, shunned him. Locke found himself the personal focus of racial politics, and he was taken up by nonwhite colonial students from India, Natal, Egypt, and Ceylon. The experience was traumatic, and it gave Locke a much richer appreciation of the social salience of race. He left Oxford without taking a degree. By the time he returned to the United States in 1911 and secured a teaching position at Howard University, he had abandoned the notion that racial difference was a fact of life one could ignore.

In 1915, the same year that Kallen's "Democracy Versus the Melting-Pot" was published, Locke gave a series of lectures at Howard called "Race Contacts and Interracial Relations." He began by citing the work of the man who had helped modify some of the conclusions people had drawn from Weissmann's experiment. This was Franz Boas, one of the fathers of cultural anthropology, and therefore, in a sense, the man who introduced cultural polytheism to the world. Boas had shown, in a physiological study of immigrants, that environment does have biological effects; and Boas was himself very much a cultural pluralist.

Locke argued that there was a distinction between difference and inequality. Racial difference is biological and racial inequality is social, but they are constantly confused. As Boas had said, it is illogical to prevent a group from developing a civilization and then to attribute its failure to develop a civilization to biological inferiority; but that is what Europeans had done to nonwhite races around the world. They had created a history of racial invidiousness, and then they had called it natural. Locke concluded—a conclusion drawn from his own experience at Oxford—that individuals are the bearers of that history, whether they choose to be or not. "When the modern man talks about race," Locke said, "he is not talking about the anthropological or biological idea at all. He is really talking about the historical record of success or

failure of an ethnic group. . . . [T]hese groups, from the point of view of anthropology, are ethnic fictions."[7]

They are fictions whose effects are real enough, however. What Locke proposed was a way to make the fiction useful for minority ethnic groups. He did not think that those groups could improve their situation by maintaining separateness, as Kallen had advised in the case of European immigrants. For modern civilization does not tolerate separateness. "Modern systems are systems that require or seem to require social assimilation," as Locke said. People may eat their ethnic food and wear their ethnic hats, but in the things that matter, they are obliged to adhere to the dominant standard. Modern societies, Locke said, "are not necessarily so arbitrary about their social culture as . . . earlier societies were, but they are at least arbitrary to this extent: that in the interests of what they call a common standard of living, common institutions, and a common heritage, they exact that a man who elects . . . to live in a modern society must adopt, more or less wholesale, the fundamental or cardinal principles of that social culture."[8]

Still, if it is a mistake to cling to ethnic identity, it is also a mistake to abandon it. The trick is to use it in order to overcome it. "The group needs . . . to get a right conception of itself," Locke said, "and it can only do that through the stimulation of pride in itself. Pride in itself is race pride, and race pride seems a rather different loyalty from the larger loyalty to the joint or common civilization type. Yet . . . through a doctrine of racial solidarity and culture, you really accelerate and stimulate the alien group to rather more rapid assimilation of the . . . general social culture, than would otherwise be possible."[9] Although racial identity has no basis in biology, and although racial pride is, by itself, socially divisive, the only way to overcome social divisiveness is to stimulate racial pride, to encourage minority ethnic groups to take satisfaction in their particular practices and achievements. The desire to be accepted as like everyone else—the desire to meet the "common standard"—flows from the desire to be recognized as different from everyone else. You want to prove that your group is as good as every other group. The elegance of Locke's formulation is that neither human sameness nor human difference is treated as real and essential. They are defined functionally. Universality and diversity are both effects of social practice. They are not given in nature; they are outcomes of what people do.

Horace Kallen and Alain Locke were both students of William James, who is best known as one of the founders of the philosophy known as pragmatism. Pragmatism today is associated by some people with the denial of truth and objectivity, and it therefore can seem anti-empirical and anti-scientific. But the two most important figures in the development of pragmatism were both trained as scientists—William James and his friend Charles Sanders Peirce. James began teaching at Harvard in 1874 in the physiology department. His field was experimental psychology. He came to philosophy late in his career.

Pragmatism is not a debunking of the concept of truth. It is an effort to adapt the concept of truth to the universe Darwin described, a universe where things happen higgledy-piggledy, where reality doesn't sit still long enough for us to form an accurate picture of it. Pragmatism regards truth in the same way that statistical science regards a fact: it is the provisional place that the preponderance of experience leads us to assert a belief. Truth is like a natural law in science: it is what, given certain conditions, will happen *most of the time*. It is not an iron law. The universe being what it is, there may be a natural law of iron, but there are no iron laws of nature. As one nineteenth-century philosopher of science put it: "Scientific laws are the bed over which passes the torrent of facts; they shape it even as they follow it. . . . They do not precede things, they derive from them, and they can vary, if the things themselves happen to vary." The tendencies of living beings to follow predictable paths "can look, viewed from outside, like necessary laws," but they are only habits. Without variation, everything would be dead matter.[10]

Pragmatists also believed that on a theory of natural selection, there is no warrant for the notion that our minds are supposed to mirror reality objectively. This isn't just because reality doesn't stand still. It's because there is no adaptive utility in having a mirror in our heads. The evolutionary value of having minds is the same as the evolutionary value of having opposable thumbs: it helps us cope with our environment. The truth-value of a belief, therefore, is the same for a pragmatist as the truth-value of a statistical fact is for a scientist: its predictive usefulness. True beliefs, James liked to say, are beliefs that cash out in experience. One of his favorite examples was belief in an idea

central to scientific inquiry: causation. You cannot *show* causation, James said, any more than you can show the existence of God. But belief in causation is warranted because experience shows that it pays to believe in causation.

This was a view about truth drawn directly from science. One of James's students, the future educational psychologist Edward Thorndike, had, for his doctoral thesis, put chickens in boxes with doors on them. Then he measured how long it took the chickens to learn how to open the doors and get at the food pellets outside. He observed that although at first many actions were tried, apparently unsystematically, only successful actions performed by chickens who were hungry—only actions that opened the door to food the chickens wanted to eat—were actually learned. Actions that produced no results were simply forgotten by the chickens. He concluded that success is what caused those movements to be imprinted in the brains of the chickens. Belief that pushing this lever with my beak will give me access to food is a belief that cashes out in experience. It is therefore, pragmatically, true. Belief that I have to emit a special cluck before I push the lever could be a vestigial belief, discarded when it becomes clear that without the cluck, the door opens anyway.

The pragmatists thought that philosophers had mistakenly insisted on making a problem of the relation between the mind and the world, an obsession that had given rise to the attempt to answer the question, "How do we know?" The pragmatist response to this question is to point out that nobody has ever made a problem about the relationship between, for example, the *hand* and the world. The function of the hand is to help the organism cope with the environment; in situations in which a hand doesn't work, we try something else, such as a foot, or a fishhook, or an editorial. Nobody worries in these situations about a lack of some preordained "fit"—about whether the physical world was or was not made to be manipulated by hands. They just use a hand where a hand will do.

The pragmatists thought that ideas are the same as hands: instruments for coping. An idea has no greater metaphysical stature than, say, a fork. When your fork proves inadequate to the task of eating soup, it makes little sense to argue about whether there is something inherent in the nature of forks or something inherent in the nature of soup that accounts for the failure. You just reach for a spoon. But

philosophers have worried about whether the mind is such that the world can be known by it, and they have produced all sorts of accounts of how the "fit" is supposed to work—how the mental represents the real. The pragmatist point was that "mind" and "reality" are only abstractions from a single, indivisible process. It therefore makes as little sense to talk about a "split" that needs to be overcome between the mind and the world as it does to talk about a "split" between the hand and the environment, or the fork and the soup. The pragmatist would make the same point about biological and psychological explanations of personality and behavior: they are abstractions from a single entity, which is the human being. You can speak of the human organism from the point of view of genetics, and you can speak of it from the point of view of psychology, spirituality, or culture. Anything that helps us get a grip on understanding the phenomenon is useful. The phenomenon itself is the sum of all possible understandings.

James was a Darwinian, but he was not a Darwinist, exactly. What he admired about the theory of natural selection was that it did not attempt to ignore the eccentricities of the world, as taxonomical biologists and creationists had tried to do, but built its theory up from them. "It is one of the fortunate points of the general theory which bears [Darwin's] name," James wrote when he was a young man, "that the more idiosyncrasies are found, the more the probabilities in its favor grow," since idiosyncrasies in nature are evidence of the existence of chance variation.[11]

But James thought that people took the wrong lesson from *On the Origin of Species*. This is the belief that we see today in popularized evolutionary psychology, the belief that evolutionary science can lay a foundation for norms, that natural selection serves as a kind of "bottom-line" arbiter of merit. This makes the logic of evolution the logic of human values: it suggests that we should pursue policies and honor behavior that are consistent with the survival of characteristics understood to be "adaptive," and it justifies, as "natural," certain kinds of coercion. It is therefore a scientific theory for winners: it ratifies every triumphant outcome by explaining it as the result of natural selection. It is a free-market philosophy for organisms.

James believed that scientific inquiry, like any other form of inquiry, is an activity inspired and informed by our tastes, values, and hopes. But this did not, in his view, confer any special authority on the conclusions

it reaches. On the contrary: it obligates us to regard those conclusions as provisional and partial, since it was for provisional and partial reasons that we undertook to find them. The mistake is not simply endowing science with an authority it does not merit. It is turning one belief into a trump card over alternative beliefs. It is ruling out the possibility of other ways of considering the case. James believed that the theory of natural selection should be regarded like any other idea—as a hypothesis, good in some situations, not so good in others. It should not be regarded as a basis for values. Natural selection is, after all, a chance process. The bird with the better-adapted beak isn't smarter or nobler than the other birds; it just lucked out. A characteristic that helps an organism survive may be completely undesirable from every other point of view, and survival in one season can mean extinction in the next. The real lesson of *On the Origin of Species* for James—the lesson on which he based his own major work, *The Principles of Psychology*, published in 1890—is that natural selection has produced, in human beings, organisms gifted with the capacity to make choices incompatible with "the survival of the fittest." There *is* intelligence in the universe. It is ours. It was our good luck that, somewhere along the way, we acquired minds. They released us from the prison of biology.

After James changed fields from psychology to philosophy, he began developing his idea of pragmatism. In 1907, he published a book with that title, presenting his philosophy to the world. He dedicated it to the British philosopher John Stuart Mill, who, James said, "my fancy likes to picture as our leader, were he alive today." Mill had died in 1873. A year after his death, one of his last essays was published. It is called "On Nature," and I close by quoting from the ending of it.

"The word 'nature,'" Mill wrote, "has two principal meanings: it either denotes the entire system of things, with the aggregates of all their properties, or it denotes things as they would be, apart from human intervention. In the first of these senses, the doctrine that man ought to follow nature is unmeaning; since man has no power to do anything else than follow nature; all his actions are done through, and in obedience to, some one or many of nature's physical or mental laws. In the other sense of the term, the doctrine that man ought to follow nature, or, in other words, ought to make the spontaneous course of things the model of his voluntary actions, is equally irrational and

immoral. Irrational, because all human action whatever consists in altering, and all useful action in improving, the spontaneous course of nature. Immoral, because the course of natural phenomena being replete with everything which when committed by human beings is most worthy of abhorrence, any one who endeavored in his actions to imitate the natural course of things would be universally seen and acknowledged to be the wickedest of men. The scheme of Nature, regarded in its whole extent, cannot have had, for its sole or even principal object, the good of human or other sentient beings. What good it brings to them is mostly the result of their own exertions. Whatsoever, in nature, gives indication of beneficent design proves this beneficence to be armed only with limited power; and the duty of man is to cooperate with the beneficent powers, not by imitating, but by perpetually striving to amend, the course of nature—and bringing that part of it over which we can exercise control more nearly into conformity with a high standard of justice and goodness."[12]

These are wise words still.

NOTES

1. *Charles Darwin's Marginalia*, Vol. 1, ed. Mario A. di Gregorio (New York: Garland, 1990–), 164.

2. Horace Kallen, "Democracy Versus the Melting-Pot," *Nation* 100 (1915): 220.

3. Horace Kallen, *The Structure of Lasting Peace: An Inquiry into the Motives of War and Peace* (Boston: Marshall Jones, 1918), 31.

4. Kallen, "Democracy Versus the Melting-Pot," 220.

5. Steven Pinker, *The Blank Slate: The Modern Denial of Human Nature* (New York: Viking, 2002), 50.

6. Alain Locke to Mary Locke, March 23, 1907; quoted in Louis Menand, *The Metaphysical Club* (New York: Farrar, Straus and Giroux, 2001), 390.

7. Alain Locke, *Race Contacts and Interracial Relations: Lectures on the Theory and Practice of Race*, ed. Jeffrey C. Stewart (Washington, D.C.: Howard University Press, 1992), 12.

8. Locke, *Race Contacts and Interracial Relations*, 91.

9. Locke, *Race Contacts and Interracial Relations*, 96–97.

10. Emile Boutroux, *De la contingence des lois de la nature*, 2nd ed. (Paris: Ancienne Librarie German Baillière, 1895), 39, 167. My translation.

11. William James, "Two Reviews of *The Variation of Plants and Animals under Domestication*, by Charles Darwin" (1868), *Essays, Comments, and Reviews*, in *The Works of William James*, ed. Frederick Burkhardt (Cambridge, Mass.: Harvard University Press, 1975–88), 234–35.

12. John Stuart Mill, "On Nature" (1874), *Nature, the Utility of Religion and Theism* (London: The Rationalist Press, 1904), 32–33.