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La Mettrie’s Objection: Humans Act like Animals

 A common view of nonhuman animals is that they lack rights because they lack conscious control over themselves. Two thoughts put pressure on this view. First, we recognize the rights of radically cognitively limited humans even though they lack conscious control over themselves. So it would seem mere prejudice to deny rights to nonhuman mammals on the grounds that animals lack autonomy. Tom Regan has been the most eloquent, powerful, and resolute defender of this thought. Second, evidence is growing that healthy adults exercise non-conscious control over themselves most of the time. To deny rights to animals on the grounds that they can only exercise non-conscious control over themselves while affirming the rights of humans who similarly exercise non-conscious control over themselves most of the time also seems prejudicial. Notice that whereas the first thought compares animals to neurally diverse, cognitively challenged humans the second thought compares animals to typically developing, *normal* humans.

In this paper I argue that accumulating empirical data lend increasing support to the second thought. If the research results cited are confirmed, then we control ourselves almost all of the time using non-conscious mechanisms. The control mechanisms of ordinary humans, in sum, are no different from the control mechanisms of other mammals. In the course of everyday events *humans* act, as Julien Offray de La Mettrie (d. 1751) had it, *just like animals*. My tentative conclusion will be that the ethical implications of the accumulating evidence support Regan’s view that nonhuman mammals have rights. Such animals have rights, that is, if humans do.

 In *The Case for Animal Rights*, Regan wants to undermine the idea that humans are different in kind from other animals, a view no less entrenched today than it was in 1859 when Darwin took it on (Darwin, 1988). Like Darwin, Regan must deal both with philosophical arguments that animals have only instrumental value and with the powerful cultural assumption that nonhumans were created to serve humans. Regan achieved at least one of his goals when he succeeded to cast the burden of proof on those ethicists who believe in natural rights for all humans but deny them to all animals. The argument that adult nonhuman mammals are what Regan calls subjects-of-a-life and, therefore, that animals have attendant rights equal to human rights received scant philosophical attention before Regan’s work. Many are now advancing his agenda by contributing to the burgeoning literature defending his views, as the essays in this volume amply attest. I will argue in a complementary fashion that recent work in human psychology and neuroscience adds support to Regan’s conclusions, albeit in an admittedly curious way. For Regan argues, successfully to my mind, that at least some animals—I’ll restrict myself, as Regan does, to adult mammals—exercise more control over themselves than most people are willing to acknowledge. In making this argument, Regan dramatically raises the moral status of those animals. He argues from the bottom-up, as it were, diminishing the gap between us and animals by showing that they are more like than unlike *some* of us. I, on the other hand, will argue from the top-down, as it were, and suggest that animals are more like *most* of us than we commonly think.

La Mettrie’s Objection

 Regan’s first order of business in *The Case* is to cast doubt on the argument commonly attributed to Descartes and his followers that animals are unfeeling robots able only to respond mechanically to inputs or, as the folk would have it, to act only “on instinct”—and never on the basis of reasons. Regan agrees that mechanistic explanations of the motions of lifeless objects are to be preferred over animistic explanations because of the principle of parsimony. He explains the principle as follows.

If we imagine that there are two theories before us, each one offering an intelligible explanation of an equal range of facts, and both equal in what they can predict, but one requiring that we make fewer assumptions than the other, then the principle of parsimony enjoins us to accept the simpler one, the one with fewer assumptions (Regan, 1983, 7).

 Regan illustrates the principle by observing that it is unparsimonious to call in psychological processes to explain events that do not involve mental states. It is a mistake, for example, “to suppose that a pinball machine feels threatened, angry, humiliated, or suffers pain when, because we play too vigorously, it lights up ‘Tilt!’” Descartes applies the principle to animals. Even though animals appear capable of being hurt, physically and psychologically, the appearances are deceiving. Animals are no more subject to pleasures and pains than are Regan’s pinball machine. Hence, according to Descartes, animals should not be understood to be subjects of a life—their behavioral signals to be in pain notwithstanding. For animals, goes the familiar Cartesian view, do not have a sense of their past or future, or a welfare, or “the ability to initiate action in pursuit of their desires and goals; [or] a psychological identity over time” (Regan, 1983, 243). Rather, they are merely robots—machines run by particularly sophisticated algorithms.

 But Regan does not agree with Descartes that animals are unfeeling machines. In beginning his rebuttal, he notes—almost in passing—that if animals are automata then humans probably are too. He calls this La Mettrie’s objection after the eighteenth century French materialist and author of *Machine Man* (Mettrie and Thomson, 1996), Julien Offray de La Mettrie who used the argument from parsimony to undermine the case for human awareness.

 La Mettrie’s mechanistic view of human psychology is best understood against the backdrop of Descartes’ psychology. A popular way to express a Cartesian view of animals is to say that animals are like clocks; while they have moving parts they nonetheless have no feelings. Whereas humans exercise control over their behavior by means of rational, higher order thoughts—thoughts about thoughts—animals cannot similarly control themselves by thinking about what they are doing. For every animal behavior is an engineered movement controlled by a series of turning gears. The first gear is some motion or force in the physical environment, the metaphorical Pavlovian whistle that kicks everything into motion. Here’s an example. A male dog hears its master say, “Here’s your Tug-a-Jug” and sees a treat inside the clear cylindrical object. The animal approaches the toy eager to get at the kibble inside.

 The physical explanation goes something like this. Scattered light enters the male’s cornea and is projected onto the rods and cones of his eye’s photoreceptors. The retina in turn sends signals up the optic nerve, setting in motion—to continue our metaphor—a second set of gears. At the rear of the brain, neurons in the primary visual cortex fire and, as these ascending neural signals are processed, they cause the production of chemicals such as testosterone and adrenaline. These chemicals cascade outward toward the face and body. The dog’s eyes vasodilate, his head bows. He jumps in circles, licks and nuzzles the object. He bends to the toy, steps on it, and tries to pull on the rope protruding from it so as to extract a biscuit.

 All of this happens reliably and mechanistically, without the male dog exercising active agential control over it. What the dog does not do, on Descartes’ view, is *control* his emotions or *govern* his behavior. He does not *want* or desire anything because he is, strictly put, nothing more than the set of interlocking gears, each gear put into motion by the preceding gear (Figure 1). How then does the animal exercise control, guiding his bodily movements in ways that will achieve his goals? Answer: He doesn’t. *He* doesn’t exist any in anything like the sense that we exist. The dog lacks qualia; there’s nothing it feels like to be him. For in him, external environmental causes and internal neural gears are doing all the work. The dog can no more feel pleasure than a pinball machine can feel pain.

INSERT FIG. 10.1 HERE

 La Mettrie endorses this picture and continues as follows. If the parsimonious explanation of animal behavior is that animals are not consciously in control of their bodies, why is it not the case that the correct explanation of human behavior is the same--that *we* are not consciously in control of our bodies? LaMettrie’s Objection (LMO) can be represented (Fig. 2) by simply substituting “human” wherever “animal” appears in Fig. 1.

INSERT FIG.10. 2 HERE

 Descartes objects to La Mettrie’s reductionism by arguing that Fig. 2 is a deficient account of human psychology. It ignores the most essential part of us, the part of which we are intuitively aware and to which we have immediate access, the soul. Descartes’ psychology is represented in Fig. 3.

INSERT FIG. 10.3 HERE

 Because humans have souls, asserts Descartes, we can do what the dog cannot—assess our desires, survey which of our desires we have the best reasons to endorse, and freely decide whether or not to act on our most powerful urges. The soul is that part of men and women that empowers us to be able to renounce lust, re-direct our gaze and movements, and determine our actions according to reasons. in their behaviors by physical forces beyond their control. Unlike a dog or horse which responds automatically to environmental inputs and whose behaviors are determined by physical forces beyond the animal’s control, men and women can reverse the direction of motion in which their gears have been set turning. We can act on weaker motives. We can decide to stop our gears from turning and, indeed, to re-start them so that they move in the opposite direction (red arrow).

 For example, in Fig. 2 the middle, neural processes, gear turns in counter-clockwise direction so that the gear on the far right—the human behavior—turns *clockwise*. However, in Fig. 3, the soul intervenes to reverse the flow of energy, causing the right-most gear to turn *counter-*clockwise. Descartes’ soul is not immaterial or insubstantial. It has teeth and power, and it acts on the brain inside the pineal gland, according to Descartes’ anatomical speculations.

 Descartes thought of the pineal gland as the physical location of the immaterial soul. He did not know that the pineal gland is a part of the endocrine system and produces a simple hormone in response to sunlight. At noon, the gland is in a relatively quiescent stage. After the sun goes down, however, diminishing amounts of light trigger physiological pathways to synthesize and secrete melatonin, causing drowsiness. All of these processes happen blindly, without our direction. There is no evidence that the soul affects these neural processes, or any other neural processes.

 Back to the dog. The physiological neurons and chemicals plus the philosophical principle of parsimony are all that is needed to explain animal behaviors in purely physicalist terms. Now, if animal consciousness, the felt quality of being the subject of a life, is explained *away* in this process, why should it not be the case that human consciousness is similarly explained away by invoking analogous structures and mechanisms? If science can explain the essential features of human belief, desire, memory, intention—in brief, all of our mental states—then isn’t *my* feeling of being an agent in control of my beliefs and actions also an illusion? And, if consciousness is an illusion, isn’t the ability to direct one’s attention to this object rather than that also an illusion?

 How does Regan fit into this story? Remember that Descartes rejects La Mettrie’s view and insists that we have a soul that can intervene in our innate behavioral programs. Like Descartes, Regan finds objectionable La Mettrie’s view that we are run by algorithmic fixed action schemata. Unlike Descartes, Regan finds appeals to the soul mysterious and unhelpful. Regan offers two different responses. Regan’s first response is to deny that LMO needs any response at all. His second response is to argue that even though humans may lack souls, we do not lack subjectivity—and neither do (some) animals.

 The first two chapters of Regan’s book are a sustained attack on the idea that animals are automata-without-consciousness. Indeed, the success of the overall work rests largely on Regan’s novel defense of the commonsense view, that animals while lacking language are sentient, have a point of view, possess feelings, and are capable of making choices. The case he martials for animal awareness is impressive.[[1]](#endnote-1)

 In the course of the argument, Regan notes almost in passing that “skeptical doubts about human consciousness” could be used against the case for animal rights. If humans are unfeeling machines, robots that respond only to stimuli, what reason could there possibly be to suppose that dogs, horses or cows are anything more? For if humans lack conscious control over their desires, what are the chances that pigs and chickens possess it?

 Skepticism of this sort has not diminished since *The Case* was published. If anything, doubts about free will on the one hand and, on the other, enthusiasm for computational theories of the human mind are more common today than in 1983. The humans-are-automata-without-conscious-control is an idea, I will argue, that has gained evidential support in the last three decades. Regan knew the problem well when he sat down to write and he dubbed LMO the Mechanistic Alternative. How might a defender of animal rights respond to the challenge today? Let’s look first at how Regan approaches the subject in *The Case* and proceed by surveying new evidence for the Mechanistic Alternative from experimental psychology and neuroscience.

 Regan’s strategy is to argue that none of Descartes’ reasons for denying that animals are feeling subjects of a life is persuasive. He argues that the mental lives of animals have a felt quality that matters to them and in this respect their experiences are comparable to analogous experiences of ours. His strategy therefore is to lift animals up, morally speaking.

 Here is one way to formulate the argument that motivates La Mettrie’s Objection. The first premise is the main principle of what Alex Rosenberg calls approvingly “scientism,” the view that all motion in the world can be reduced to physics—including all human thought and action (Rosenberg, 2009).

1) All human behavior can be fully explained in mechanistic terms.

1) is La Mettrie’s echo of Descartes’ view of animal behavior. Such behavior can be fully explained without invoking the soul, free will, or moral reasons. The principle of parsimony requires such low-level reductionistic explanations. On this view, an external cause (think the sound of Pavlov’s bell) is an input to an animal’s neural system which in automatic and deterministic fashion produces a predictable physiological response, the behavior (salivation).

 Now we add a premise to the effect that whenever a reductionistic explanation in terms of external causes and neural processes is available for a behavior, then that behavior is not attributable to anyone. There is no agent in the picture, no consciousness in control—only chemical levers and gears as it were.

2) Any behavior that can be fully explained in mechanistic terms is not under the control of the one behaving.

 Now we need a premise connecting conscious control over behavior with moral responsibility. As legal systems the world over recognize, one cannot be blamed (or credited) for an act which one could not have prevented oneself from doing. A woman with Tourette’s Syndrome, for example, may disrupt a family gathering by yelling an obscenity but we do not hold her accountable if she utters the expletive under the influence of causes she is powerless to counteract.

3) Individuals cannot be held responsible for behaviors not under their control.

Premises 1) – 3) constitute a valid argument for LMO:

4) Humans cannot be held responsible for their behavior.

According to LMO, then, both free will and responsibility are empty concepts. If this is correct, none of us can ever be held responsible for what we do—much less what we do to animals. Thus the way has been opened to use animals in painful experiments and to confine, slaughter, and eat them. Those who engage in such practices cannot be expected to do otherwise because they *cannot* do otherwise. Or so LMO would lead us to believe.

Regan’s response

Rebuttal #1: Moral philosophers may assume LMO is false

 Regan has two responses. The first is to reject premise 1) in a strategy that is as direct as it is persuasive. Moral philosophy, he contends, is neither possible nor necessary if LMO is sound. If the concept of responsibility is null there is no point in working to construct a coherent ethical theory. For if we are constitutionally incapable of acting in any way other than the way we are caused to act, why bother thinking about our ethical obligations at all? What is the point of worrying about how we should treat each other, much less animals, if in fact we have no capacity to do otherwise than as we are determined mechanically to do? If we cannot choose to avoid inflicting harms through our dietary selections or scientific research protocols, how could we be held responsible for those harms? If 1) – 3) present an unassailable argument for 4), we need not concern ourselves with ethics of any kind. But that conclusion is reprehensible as well as dangerous. Not all crimes are crimes of passion, and not all acts of abusing animals are beyond the control of the abusers. We may not treat animals much less each other however we wish. To suggest otherwise is simply not to be thinking clearly.

 Read this way, *The Case* notes the skeptical challenge only to set it aside—“as a work in moral philosophy may do” (p. 29). However, read another way, the entire first half of the book is an extended response to LMO insofar as it presents a neo-Kantian anthropology in which humans are described as such robust and complex moral agents that the mechanistic apparatus cannot suffice to provide the promised explanations. Rather, we must employ philosophical concepts to explain the subtle and self-conscious psychological capacities of humans since our ability to guide our actions according to moral reasons will not yield to mechanical explanation.

Rebuttal #2: LMO is false because humans are rational moral agents with control and responsibility

 According to this second reading of *The Case*, Regan responds to LMO by describing human psychology in such a way that our inherent value is seen to lie in our ability to control our long range intentions, our ability to make something of ourselves. Regan relies on a neo-Kantian idea that normally developing adult human beings are rational agents with categorical interests, interests in shaping one’s life according to one’s own conception of the good. And yet Regan rejects the allied notion that one must be a rational agent to have moral standing. Instead, he argues that one need only be an experiencing subject of a life—a moral patient—to qualify for moral standing. And this is his reason for thinking that adult mammals have rights.

 What is it to be an experiencing subject of a life? In brief, it is to be a sentient individual with a mental life complex enough to support a point of view, a psychological identity. Subjects not only have perceptions and use concepts, but they form beliefs on the basis of their memories and intentions on the basis of their desires. They have the ability to travel mentally in time, to the past in their memories and to the future in their anticipations and hopes. Any individual with a first-person perspective has a psychology and is the subject of a life.

 In *The Case*, Regan appeals to Kant’s claim that each and every human being has intrinsic worth, “that, in Kant’s terms, each of us exists as ‘an end in himself’—*and* that this intrinsic worth which belongs *only* to human beings, is shared *equally* by all. While Regan rejects Kant’s claim that only rational moral agents have intrinsic worth, Regan does not reject the Kantian view that typically-developing adult human beings are persons, agents who can act on the basis of moral principles they adopt for themselves. Regan’s difference from Kant arises in his views about the scope of moral rights, which beings have intrinsic worth, not on whether neurotypical humans are autonomous and have free will. One need not, on Regan’s view, be a moral agent or be capable of engaging in reciprocal moral relationships to have intrinsic worth. Whereas Kant makes rational moral agency the basis for dignity, Regan makes being the ‘subject of a life’ that basis.[[2]](#endnote-2) All subjects of a life have inherent value, Regan argues, and anything with inherent value has it equally with others. All who have inherent value have moral rights. It follows that all subjects of a life have equal moral rights. Not the same set of moral rights, but individual rights that, when the same right is held by another subject of a life, both rights are always equal in weight.

 To have a moral right is to have a claim against others that they not use you merely as a means to their ends. This right derives in part from the fact that subjects have both altruistic and egoistic concerns; we have an individual welfare that is important to us. We care about how our life goes even if no one else does. To have an individual welfare is to have the kind of life in which your good can be promoted—or undermined—by the things that happen to you. Since we take an interest in our lives, and since we are subject to the vagaries of the genetic lottery, environmental luck, social dislocation, mean-spiritedness by others, and countless other insults and evils, our lives can go well or poorly for us. Consequently, all beings with inherent value are entitled to being treated with respect, a right that entails the presumptive right not to be harmed. (The right not to be harmed is subject, however, to the miniride and worse-off principles; cf. *The Case*, p. 305.)

 Regan’s argument is extensive; here is a brief summary.

5) All individuals who are subjects of a life have a good of their own, a welfare that makes their life valuable to them.

6) Any individual with a good of their own has inherent value.

7) Any individual with inherent value has it equally with other individuals with inherent value.

8) Any individual with inherent value has an equal right to be treated with respect, that is, not to be used as an instrument or means only to another’s ends.

Premises 5) – 8) constitute a valid argument for the following conclusion.

9) Therefore, any subject of a life has the right to be treated with respect and not to be used as a means.

And if, as Regan goes on to argue, “mentally normal mammals of a year or more” (p. 78) are subjects of a life, then it follows further that those animals have a right to be treated with respect that is equal with the same right of every human. Regan’s basic idea is Kantian in one respect and decidedly anti-Kantian in another (a matter to which we will return). It is Kantian in its anti-utilitarianism. Whereas utilitarians want to aggregate preferences and values and decide the right course of action by calculations of overall utility, Regan, like Kant, wants to block such calculations wherever they threaten the irreplaceability and dignity of the individual. For, as Kant wrote,

. . . everything has either a *price* or a *dignity*. If it has a price, something else can be put in its place as an *equivalent*; if it exalted above all price and so admits of no equivalent, then it has a dignity.

. . . but that which constitutes the sole condition under which anything can be an end in itself has not merely a relative value—that is, a price—but has an intrinsic value—that is, *dignity* (Kant, 1964, 71).

 Read in this way, Regan’s response to LMO is not to deny that LMO needs an answer but to mount a detailed defense of the claim that neither human nor animal behavior can be explained mechanistically. If I am not mistaken, the view of human nature found in *The Case* looks something like Fig. 4. I shall refer to this view as a Kantian view (although I have no interest, or need, to defend it as an accurate reading of Kant’s own position). For Regan, human behavior at its best is the result of the deliberations of a Kant-like rational agent, an agent who can and does consciously exercise control over themselves *via* practical, moral, reasons.

INSERT FIG. 10.4 HERE

 Few deny that some human behaviors can be explained using La Mettrie’s mechanistic laws. But we engage in behaviors that cannot be explained mechanistically because we, unlike animals, have the capacity to *delay acting on our desires*. Cognitive control, it is claimed, allows us to harness our automatic behaviors and to defer acting on them. I now briefly introduce some of the empirical work that seems to support the anti-Kantian view.

 At Stanford University in 1968, Walter Mischel began a series of experiments in which he would eventually present hundreds of four-years old children with a tantalizing choice. Eat one treat *now* (usually a cookie or marshmallow) or get two treats if you can stave off the impulse to eat for fifteen minutes (Mischel, Shoda, and Rodriguez, 1989). Predictably, some children could resist the impulse for instant gratification while others could not.[[3]](#endnote-3) Now, what was going on in the heads of those children who successfully resisted? If the subjects were adults, they might have been having a running dialog with themselves about what they had gotten themselves into. "Why on earth did I agree to this silly experiment? Now that I've started it, I guess I might as well finish it—nothing better to do." And so the adults would feel themselves consciously controlling their behavior.

 But the four year olds, presumably lacking equivalent self-awareness, would not be wrestling with such reflexive thoughts. Their wiggling and squirming would betray less sophisticated mental states, expressed in monologs something like these:  "Don't stare at that thing,” or “Look out the window,” or, “Think about *anything* else, our new puppy —just get my eyes off of . . . *that cookie*!" etc. Other children might not be having an internal dialog at all. They might only be wrestling with a set of competing pictures. They might, for example, be seeing in their mind’s eye two images of themselves: one picture of their face in the near future frowning and gobbling down one cookie and a second picture of their face smiling in the more distant future with two cookies in hand. It seems that we can imagine children having the feelings of conscious control even if the children are not using language to do so.

 Let us distinguish two cases then. In the first, individuals have linguistic resources they use to exercise conscious control over their thoughts. In the second, they have pictorial resources, suggesting they are “thinking in pictures” (Grandin, 1995). Mischel found that a successful strategy was to have the children picture the desired object as something it was not: the marshmallow as a cotton puff or UFO; the cookie as a painting on the wall. The salient point here is that feelings of conscious control seem to be present whether the child is thinking in language or in pictures. For we cannot distinguish the two cases by a child’s behavior because the behaviors are the same in the non-linguistic and linguistic cases. Both children fidget, form facial expressions of confusion, tense their muscles. Whether or not they silently *say* anything to themselves does not matter for—with or without language—they have the characteristic *feelings* that accompany decisions in which we are truly torn between attractive alternatives.

 But what is the explanatory *cause* of such agent’s behaviors? Descartes’ soul may have been mysterious, but it had teeth. It caused behavior by interacting with the pineal gland. Where are the “teeth” of the neo-Kantian rational agent? How does the agent cause behavior? If Cartesians must answer the question Regan poses (how does the soul cause the body to move?), Kantians must answer this question, How does practical reason cause the body to move?

 It is a difficult question to answer. It is critical to observe, however, that for the purpose of defending animal rights, Regan need not answer it. For on his view, individuals are owed respectful treatment even if they are *not* rational agents, even if they *lack* free will. For Regan, unlike Kant, does not think moral autonomy is necessary for intrinsic value. For Kant, individuals are autonomous only if they can formulate reasons for their actions in morally charged situations, comparative the relative merits of each reason, and act only on those reasons that they can universalize. For me to universalize a reason is for me, first, to imagine myself as another human being facing exactly the same dilemma that I am facing and to ask whether I would approve of their acting in the way that I am contemplating acting and acting for the same reason that I am contemplating. Second, I must choose to act on the reason that I could successfully will for everyone else to act under similar conditions.

 Kant famously thinks only such rational universalizing agents have autonomy. For Kant, animals lack such autonomy and we, therefore, have no direct duties to them. Regan, on the other hand, thinks individuals can have intrinsic value with a weaker form of autonomy because individuals need only have autonomous preferences to have rights. For Regan, rights holders need not be abstract rational universalizers; they need only be feeling and desiring creatures, the subjects-of-a-life who have qualitative experiences. For Regan, individuals are autonomous “if they have preferences and have the ability to initiate action with a view to satisfying them.” Calling his view “preference autonomy,” Regan observes that on his view “it is not necessary…that one be able to abstract from one’s own desires, goals, and so on, as a preliminary to asking what any other similarly placed individual ought to do…” (Regan, 1983, 84). One need only have “the cognitive prerequisites for having desires and goals…” perceptions and memories, and “the ability to form and apply general beliefs” (Regan, 1983, 85).

 On Regan’s view, Kant sets the bar too high when Kant makes moral autonomy a necessary condition of dignity. Regan argues that any individual with preference autonomy—any feeling subject of a life—has rights. But here the account faces a difficult problem. How can we distinguish feeling and unfeeling individuals? How distinguish the individual with conscious states such as “preferences and … the ability to initiate action with a view to satisfying them” from the individual who exhibits behaviors that falsely convey the presence of preferences and deliberative action? In the latter category are zombies and humans having what Peter Carruthers calls “nonconscious experiences” (Carruthers, 1992). Carruther’s example of a nonconscious experience is this: imagine how you feel when you are driving at high speed and deep in conversation with a friend. You pass but do not notice a truck and, later, upon being asked about it, you realize that you do not remember ever seeing it. Zombie-like, some of our experiences happen when we are awake and yet we are not conscious of them—they do not “feel like” anything. During nonconscious experiences, we behave in a way that shows that we have preferences (e.g., not to hit the truck while steering around it) and can initiate action with a view to satisfying them (e.g., move the steering wheel left and then right) and yet during such episodes we are not feeling subjects—we are unfeeling automata, zombies. It’s all just physical motions, mere biology.

 The question for Regan then is this: What do animals have that zombies lack? One answer: cognitive control over behaviors. How does a subject of a life exercise control over his or her life? As this is a scientific question we must turn to the empirical literature for an answer. The literature suggests that rational control over our thoughts and behaviors is not as powerful as we assume. If the literature is correct the gap between allegedly rational human agents and allegedly a-rational animal subjects may be smaller than we assume.

La Mettrie revisited: The accumulating data against conscious control of proximal intentions

La Mettrie’s theory, that human behaviors can be explained in non-psychological terms, reappears in the contemporary idea that the feeling of free will is an epiphenomenon of brain processes, an idea promoted by a group of thinkers usefully dubbed the “willusionists” by Eddy Nahmias (Nahmias, 2009). The contention that humans have no more control over their behaviors than do animals does not deny that we *believe* and *feel* as if we are in control of our desires via practical reason. But, in fact, ordinary environmental forces actually control my behaviors to a great extent and in surprisingly mundane ways. Or, at least, research in three areas, including Libet-style experiments in neuroscience (Libet, 2004), lead thinkers such as Daniel Wegner to this conclusion; we are not in fact in control of any of our behaviors (Wegner, 2003).

 For willusionists, the narratives I construct about my actions reinforce my feeling that I’m in control of these very short-run intentions, but these narratives are confabulations that only reinforce the illusion that I’m in the driver’s seat. With increasing frequency, experiments in three areas are throwing off results that seem to converge on a common argument against conscious control. These areas are *experimental economics, moral psychology,* and *neuroscience.* Let us briefly examine some of the results.

*Experimental economics*

The power of environmental factors to sway our decisions, and in disturbing ways, is well established. We have cognitive biases that incline us to choose inconsistently and, at times, to make choices contrary to our aims. For example, if you tell me that a surgical procedure X offers a 85 percent chance of success, I will embrace it. If you tell me that the same procedure offers a 15 percent chance of failure, I may well reject it—even though you have given me the same odds of success both times.

Tversky and Kahneman told a group of research subjects that they could either choose to save 200 of 600 people afflicted with a deadly disease by choosing option A, or, by choosing option B, to gain a 33% chance of saving all 600 while simultaneously risking 66% chance of saving no one (Tversky and Kahneman, 1981). Given that choice, 72% chose option A, probably because it is less risky than option B and most humans are risk-averse. However, when Tversky and Kahneman gave a different group the same choice described in a different frame, the group reversed the decision. The alternate frame was this: You can choose option C with the result that 400 people die or option D that presents a 33% chance that not one will die and a 66% probability that everyone will die. Some 78% of the participants chose option D over C—even though D is equivalent to B and C is equivalent to A and the majority of us favor A over B. Are our responses really so malleable?

It seems so. Experimental evidence mounts in support of the idea that others can exercise significant control over my decisions by placing anchors, perhaps surreptitiously, in my mind. Few MBA students know that Attila the Hun was defeated in the year 451. But if you want to lead them to guess a year that is lower than that figure, separate out those students who have phone numbers the last three digits of which are low (e.g., 008). Ask them to recall the last three digits of their phone number and write it down. If you then ask them when Attila the Hun was beaten they will guess numbers lower than 451 more often than chance would predict. (If you want to lead a group to guess a year higher than 451, segregate out those with high phone numbers and turn the same gears (Russo and Schoemaker, 2002). Why should as mundane a mental activity as remembering my phone number affect my sense of when a critical historical event happened? Because the brain has a tendency to establish anchors, ideas that are readily accessible and not necessarily true or unbiased. We apparently search for anchors when looking for answers—and unconsciously fix on those we find, no matter how irrelevant or biased they may be. And never mind that they were placed there without our knowledge by others.

One might think these results are interesting but negligible since the examples come from peripheral areas of life (Attila the Hun and phone numbers?). But analogous results crop up in investigations of no less a significant domain of our lives than our moral character. Alice Isen and Paula Levin set out to determine whether they could persuade and dissuade people from acting charitably by manipulating their environment. In 1972 they planted dimes in pay phones and then observed whether the folks who found the coins were more likely to help someone who had, as a confederate in the experimental protocol, dropped a sheaf of papers on the floor. The results were astonishing. Some 84% of shoppers would help if they had first found a dime—a dime! A mere 4 percent would help if they had not first discovered the change.

When interviewed, the helpful shoppers did not attribute their good nature to the fact that they had found a dime. Similarly, Princeton seminar students who stopped to help a man in need did not attribute their Good Samaritan behavior to the fact that they—unlike the majority of their peers who were in a rush—had plenty of time on their hands to stop and assist (Darley and Batson, 1973). In both the dime in a phone and Good Samaritan cases, the cheery altruistic-minded subjects were quick to claim that their behaviors were consistent with their “character.” They had good “habits,” “traits.” They were the sort of people that were naturally inclined to being virtuous.

The evidence proves they are wrong. It is not internal moral commitments that typically turn our gears or reliably predict our actions. That role is often played by external environmental factors (Doris, 2005).

*Moral psychology*

As the dime in the pay phone research illustrates, misunderstanding of the actual causes of one’s behavior is not confined to banal everyday activities. Few choices are more consequential than our choice of a place to live. And yet even here unconscious influences work their magic on us.

My name is Gary, my wife’s name is Karen, Karen’s mother calls her Kary. When we decided to look for a house in North Carolina, we looked for almost a year before settling on one in Cary. It took us so long because we knew exactly what we wanted: transitional style under a certain price, wooded backyard, close to campus, etc. Between the two of us, we had a list of criteria as long as your arm. We were advised by two friends explicitly not to buy a place in the city we wound up in. We would have found it amusing, and frankly demeaning, if you had told us that we settled on *Cary* because the town name sounds like ours. In fact, the similarity never even occurred to me until eight years after we moved to Cary (indeed, as I was writing this paragraph).

And yet study after study show that such nonconscious external causes play an unnervingly effective role in our decisions. One is more likely to move to a state that bears a resemblance to one’s name (Georgia to Georgia, Virginia to Virginia) than chance would predict. Indeed, the rate is 36% higher for perfect matches. Similar studies show a similar influence of one’s name on the profession one takes up. There is a higher than predicted number of Denises and Dennises in dentistry, and of Georges and Georgias in geoscience (Pelham, Mirenberg, and Jones, 2002).This is but a small sample of evidence suggesting that we make up stories to rationalize our judgments—sometimes of judgments we were never conscious of making in the first place. If offered a choice between two cards bearing pictures of different people and told to select the one we find most attractive, we will quickly make up a detailed reason why we chose the other person if through sleight of hand we are given the picture of the person we did not choose and asked to explain why we did choose her (Johansson, 2005). We are, it appears, inveterate rationalizers.

One might not find these results especially troubling, even if they involve such momentous life choices as where one lives or what profession one assumes. But what if ethics works in a similar fashion? That is, each one of us is determined by external causes and emotional reactions to reach moral judgments and then only--after the fact—do we look for our reasons for holding the judgment? Work by Joshua Greene in the sentimentalist tradition of David Hume suggests that our moral judgments are produced only as rationalizations of our emotional responses to moral situations. The language we use to defend our emotional responses will depend on whether we have time to engage in cool, utilitarian, reasoning or must, on the other hand, react quickly—in which case we will call in the heavy duty equipment of “moral rights” and deontological duties. If Greene is correct, the two major competing moral theories, utilitarianism and deontology, reflect the operations of separable brain modules. Theoretical appeals to rights and duties reflect the processes of quick and dirty emotional systems. Appeals to utilitarian calculations of ratios of good over bad consequences reflect a more deliberative and conscious set of cognitive mechanisms (Greene, 2007). Greene suspects that the controversy between deontological and consequentialist reasoning in ethics is correlated with dissociable brain systems. fMRI data suggest that abstract reasoning, information processing, and higher cognition are associated with activity in the dorsolateral prefrontal cortex and anterior cingulate cortex. These are also areas that are active when utilitarian judgments are being defended. fMRI studies also suggest that emotion and social cognition is associated with the medial prefrontal cortex and posterior cingulate/precuneu. These are areas that are active when direct affronts to one’s person are being processed in terms of violations of rights or duties (Greene et al., 2004). An article by Jonathan Haidt with the provocative and descriptive title, “The Emotional Dog and Its Rational Tail,” points in the same Humean direction as Greene’s work (Haidt, 2001). The reasons we often cite for our decisions are often nothing more than post-hoc rationalizations.

*Neuroscience*

The conclusions of experimental psychology are being buttressed by work appearing in neuroscience journals. There we read an increasing number of experts announcing that the apparent causal power of conscious willing is an illusion. The most widely discussed finding is Benjamin Libet’s, who claimed to have disproven the claim that we have free will by showing that nonconscious electrical processes occur in our neural systems before volitional acts and that we only later interpret these unconscious processes as having been initiated by us. We ordinarily think that we initiate the acts we do because we first have consciously chosen them. Libet's work arguably disproves this idea and indicates that our conscious awareness of initiating an action is a subsequent neural event to the process that actually triggers the behavior.

In 1983, Libet reported on research in which he’d asked subjects to wear electrodes on their scalps so that he could measure their EEGs. He asked the volunteers to decide when to flex their fingers or wrists and, using a clock with a sweep second hand, to keep track of the exact moment when they made the decision to move. Libet, measuring brain activity, found that a subject’s initiation of a freely voluntary act occurred three or four tenths of a second *after* the brain had reached a critical shift in its readiness potential (RP-shift), an electrophysiological mark of motor preparation. The brains of the subjects, as it were, had already initiated action some 150-350 ms before the subjects wanted to flex (Libet et al., 1983). The neural processes of cerebral activity involved in decision-making, concluded Libet, not only operate independently of our conscious intentions, but actually control the decisions we make. In other words, our brains initiate action before we become subjectively aware of wanting to make a decision to act.

Confabulation may be essential to the human condition insofar as it is necessary for mental health. For when events in our immediate environment are so foreign that they threaten psychological stability we need a mechanism to combat psychopathology and preserve homeostasis. According to willusionists, we over-rate not only our ability to introspect the causes of our behavior but also our ability to identify the actual relationships between external causes and our resulting mental states. Consequently, our left-hemisphere interpreter must work over time to make up coherent explanations of the body’s movements.

In sum, the accumulating data suggests that whereas we think know immediately, intuitively, who we are and why we are behaving in a certain fashion, increasingly it appears that we are sometimes wrong about the causes of our behaviors. Fig. 5 illustrates the human psychology suggested by the accumulating data.[[4]](#endnote-4)

INSERT FIG. 10.5 HERE

 If epiphenomenalism is true, we do not consciously control anything even as we continue to think that we do. The red arrows in the figure trace a path by which practical reason first observes what my body has done and then supplies a reason for it. Whereas the black arrows show causal relations with observable physical effect, the red arrows show merely mental relations, *post hoc* justifications without observable physical effects. So the “human behavior” wheel does not turn in the direction I expect. I react with surprise. But then I engage my powers of practical reason which supply me in turn with a plausible justification of why I am acting in a way contrary to my expectations. On this view, practical reason is a “gear” in name only because it lacks teeth. Practical reason can supply me with a rationalization and thereby restore to me a sense that I am in control of my body, but it does not have the power to reverse the gears. I am not in control of my behavior—the initial perceptual and neural inputs are. I am only in control of *the story* I tell myself about why I am acting as I am.

Nonconscious control in nonhumans

 Which animals, if any, have the feelings of control? Perhaps the answer is: those animals that have practical reason in the sense just described; that is, those animals that have the capacity to confabulate reasons to support *feelings* of control. The male dog has a standing intention to approach any clear cylinder containing treats. He sees one, but there is a chain link fence between them. He looks for ways around it. He has the feeling he can hoist his body high enough to jump over it, so he tries to leap. Or he has the other feeling, thinks he can’t get up that high so he tries to go under it. Or through it. In each of these cases, the animal has the same feeling of control over his actions as we do in similar circumstances. We can see those feelings wax when his body moves confidently and we can see them wane when his body language conveys uncertainty, assessment, hesitation. Whether the animal feels that everything is in hand or that he must slow down and take stock of his options, he is experiencing the same feelings of control that we do even though neither of us actually is in control—it’s all “just” physical motion, “mere” biology—for us and for them.

But what kind and degree of self-control, if any, are these animals *feeling*? A full answer to this question is not possible here, but allow me one speculation following on Suhler and Churchland’s lead (Suhler and Churchland 2009). When Fido chooses between two routine behaviors, he feels that he’s in control. We cannot say with much confidence what the content of his feeling is because he might feel that he wants to eat *more than* he wants to run and he might feel, alternately, that he wants to eat *before* he runs. Exactly what is in his mind we cannot say, but it must be roughly like the feeling we have when we make a similar decision. And we can justify the claim, now, that animals are feeling something like the feelings we have when they exercise nonconscious control. The animals, like us, think that they are in control and they experience primitive emotions that accompany such thoughts; a sense of happiness with one’s decision, perhaps, or some residual anxiety that one has made the wrong choice, perhaps.

 To lend further support to this view, note that the animals, like us, lose the feeling of control when their chemistries, anatomies, or neurophysiologies fail to function in the ways necessary to support these feelings of control.[[5]](#endnote-5) Humans perform poorly on tests if they are required to complete a prior test that requires extensive exertion of self-control. If you are hungry for a cookie and are presented with freshly baked cookies even as you are asked to refrain from eating one, you will not be able to exercise as much self-control if, later on, you are presented with a second task demanding self-control. If, on the other hand, you are hungry for a cookie and are presented with a carrot even as you are asked to refrain from eating the carrot, you will be able to persist longer on the second self-control task (Segerstrom and Nes, 2007). However—and this is the point that argues for the mere biology interpretation—if you are tempted with cookies but are subsequently given a boost of glucose before entering the second trial, your self-control will improve to the same level as it would have been at had you been tempted with something as unappealing as a carrot. The bottom line: our ability to control ourselves is largely dependent on our biological states. Without the requisite amount of glucose in our bloodstream, our self-control is severely diminished.

 And so it is with dogs. As if owners who have trained their dogs to sit and stay do not have sufficient evidence for believing dogs exercise self-control, we now have experimental evidence to justify the claim. Holly Miller presented dogs with a difficult choice. In one condition, the animal’s owner commanded it to stay and then the owner left the room for ten minutes. If the dog moved, the owner returned and repeated the command. In a second condition, the animal’s owner commanded it to stay and then placed it in a cage for ten minutes. After ten minutes, both animals were given a Tug-a-Jug with a treat inside. The formerly caged animals, those who did not have to exercise self-control, persisted longer at the task of extracting the food from the toy. And, in subsequent iterations, the dogs under the self-control condition were restored to full willpower if given a boost of sugar (Miller et al., 2010).

 Now, we ask, what were the dogs in the “self-control” condition *feeling* as they resisted their impulses to move? Lacking language, they were not talking to themselves in propositions; they were not thinking: "Don't stare at the door where owner just exited,” or “Think about *anything* else, my new Tug-a-Jug—just to get my mind off of . . . *moving from this seated position*!" But they may well have been wrestling with a set of competing pictures. They might, for example, be seeing in their mind’s eye two rival images: the first image a picture of owner’s face in the near future frowning as she returns with furrowed brow to find doggie moving, and the second a picture of owner’s face in the more distant future smiling as she returns with a treat for obedient doggie.

 When the dogs successfully resist the impulse to move, are they doing so by using their conceptual resources to distract themselves from the immediate temptation so as to achieve the longer-term objective? If so, then are they changing their mental states so as better to govern their behavior? If they are calling to mind pictures of owner’s furrowed brow and disapproving look on past occasions they have disobeyed and using the picture-enabled feelings to delay the urge for instant gratification, then they are having the same feelings of conscious control that we imagined the children who are not using language to have had. It appears that species that lack language do not on those grounds alone lack feelings of self-control (Robinson, 2010; Belke, Pierce, and Powell, 1989).[[6]](#endnote-6)

Conclusion

 Recent discoveries cast longer and longer shadows over belief in free will. If the results of recent scientific research are to be trusted, we must adjust downward our assessment of the human capacity to control our behaviors. Our short-run decisions and judgments are much more malleable, far less transparent, and not nearly as responsive to our conscious control as we presume. LaMettrie’s objection gains renewed importance with the advance of neuroscientific and social psychological research which seems to show that the feeling of free will comes from our skills of fiction-making rather than from our deliberative autonomy.

The accumulating data carries significant consequences for our view of the other animals. By putting downward pressure on assessments of the amount and precision of our control over our mental states, the data make it more difficult to deny that ordinary humans control their mental states in much the same way as animals are reputed to do, namely, through nonconscious mechanisms. These results lend additional support to Regan’s contention that the gap between human and nonhuman psychologies is smaller than we think.[[7]](#endnote-7) If Regan shows that animals exercise more control over themselves than we imagine, growing evidence shows that we exercise less control over ourselves than we think. If the only difference between us and other mammals is that we have more sophisticated behaviors, it comes as no surprise that we need more sophisticated story-telling capacities to invent confabulations to cover ourselves and keep us in the driver’s seat.

 Insofar as neither animals nor humans exercise free will, then normal humans think and act more like animals than most people allow. If that is true then we ought no more to permit intentional harm of animals on the grounds that animals lack conscious control all of the time than we ought to permit intentional harm of normal humans on the grounds that they lack conscious control most of the time.

Notes

1. Regan’s work persuaded one former cattle ranch hand to become a vegetarian (Comstock, 2000). [↑](#endnote-ref-1)
2. This view is discernible in Regan’s earliest essay on the subject (Regan, 1975). [↑](#endnote-ref-2)
3. A complementary follow-up study shows that children who are able to use “mental transformations” and other techniques to delay gratification and control themselves are more likely at age 32 to have avoided behavioral problems in school and drug abuse and to have higher credit ratings, elevated SAT scores, better parent-teacher evaluations (Moffitt et al., 2011). [↑](#endnote-ref-3)
4. I refer to the view as La Mettrie’s for want of a better shorthand description. While the view does call to mind aspects of his theory, I do not mean to imply that I am trying to describe his view. [↑](#endnote-ref-4)
5. Suhler and Churchland argue that cases of NCC must be caused by (a) intact anatomical features playing their proper functions (the normative function in evolutionary history that the feature was selected to play, e.g., pumping blood rather than making a thumping sound in the case of the heart) and regulate behavior “in a way consistent with prototypical cases of good control” and (b) physiological mechanisms operating in the way they operate during paradigm cases of conscious control. If either condition, (a) or (b) is violated, the individual is not exercising NCC. [↑](#endnote-ref-5)
6. The species matters. (Belke, Pierce, and Powell, 1989) found no glucose-boosting results for self-control in pigeons. [↑](#endnote-ref-6)
7. Whether it means, further, that we may hold animals morally responsible for what they do, at least to some degree, is a question for another day.

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