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Animal Awareness

When the German painter Stefan Lochner (1400–1451) painted *Saint Jerome in His Study* (reproduced on the frontispiece of this book), he conveyed through symbols some of the highlights of the life of the fourth-century saint. For example, Saint Jerome was a scholar, famous for his translation of the Bible from Greek into Latin (the Vulgate edition); the book at his desk symbolizes his scholarship. A more interesting use of symbols is the presence of a lion in the painting. According to legend, Saint Jerome had removed a thorn from a lion's paw, and the lion, grateful to his benefactor, remained with the saint. Those who saw Lochner's painting and knew the story of Saint Jerome and the lion understood the symbolism. We, who perhaps know little about Saint Jerome, initially know less about why the lion is present. Indeed, to our eyes the animal in the painting does not even look quite like a lion. The size is not the size of a lion, the tail is fixed in an unlionlike pose, the mane and feet belong to some other creature than the lions we know, the face and one visible ear are humanlike, and the demeanor of the animal is, one might say, more like that of a small dog, a puppy, than like that of the king of the beasts. One might attempt to explain the discrepancies between the lion in Lochner's painting and those lions with which we are familiar by speculating that lions in the fifteenth century were different than lions in the twentieth. But there is another, simpler explanation. Lochner, who was well versed in the story about Saint Jerome and the lion, had never seen a lion. The lion he painted was the work of his own imagination,

constructed out of the scant information and anecdotal tales about lions available to him at the time.

Once we realize Lochner's handicaps, his failure to capture the likeness of a lion is both understandable and forgivable. It would be unreasonable to expect him to have an accurate conception of an animal he had never seen and about which he had little reliable information. Our situation differs. We have had time and opportunity enough to acquaint ourselves with what lions are like, not only their outward appearance but also their physiology and anatomy, their social structure and behavior. Anyone who today supposed that lions had the puppy-dog appearance Lochner gave them would rightly be accused of failing to become acquainted with information that is as well documented as it is easily accessible.

As Lochner used symbols in his work, so his work itself stands as a symbol of humanity's misconception of other animals. Pictured as "lawless beasts" by some[1] and "of the order of sticks and stones" by others,[2] humanity has done its best to keep its distance from recognizing, as the English philosopher Mary Midgley observes, that "we are not only a little like animals; we are animals."[3] How far our predecessors, and perhaps even some of our contemporaries, have gone in denying our kinship with other animals is no more evident than when we consider the debate over animal awareness.

For most of us, it is true, even to ask whether any nonhuman animals are conscious is to strain our robust sense of reality. What could be more obvious than that cats like stroking, dogs feel hungry, elks sense danger, and eagles spy their prey? The attribution of conscious awareness to animals is so much a part of the commonsense view of the world that to question animal awareness is to question the veracity of common sense itself. But though the belief in animal awareness accords with common sense, and though the attribution of consciousness to animals is in harmony with the ordinary language we use in everyday life (when we say that "Fido wants out," after all, it is not as if we were saying something like "The square root of 9 is angry" or "The Washington Monument is thirsty"), though both these facts are well established and relevant, the role they play in the debate over animal consciousness can be reasonably weighed only after, not before, we have examined both sides. Moreover, our investigation of this question will lay some necessary groundwork for our examination of the primary question explored in the next chapter—namely, whether any animals have beliefs and desires. That question is not settled just by defending an affirmative answer to the question about

animal consciousness; but why we answer this latter question as we do has important implications for the question about animal beliefs and desires.

1.1 DESCARTES'S DENIAL

So accustomed are we to viewing animals as conscious that many are surprised to learn that anyone thinks otherwise. The seventeenth-century French philosopher René Descartes does, denying all thought, by which he means all consciousness, to animals. Animals, in his view, are "thoughtless brutes," *automata*, machines. Despite appearances to the contrary, they are not aware of anything, neither sights nor sounds, smells nor tastes, heat nor cold; they experience neither hunger nor thirst, fear nor rage, pleasure nor pain. Animals are, he observes at one point, like clocks: they are able to do some things better than we can, just as a clock can keep better time; but, like the clock, animals are not conscious. "It is nature which acts in them according to the disposition of their organs, just as a clock, which is only composed of wheels and weights, is able to measure the time more correctly than we can with all our wisdom."[4]

Recently a question has been raised about the textual evidence for interpreting Descartes as denying *all* consciousness to animals (the standard interpretation). In his essay devoted to this question,[5] the English philosopher John Cottingham suggests that some passages show that Descartes believes that animals are conscious of *some* things (for example, hunger or fear), denying only that they can have "thoughts about" what they are aware of (for example, that they can *believe that* there is food or something to fear nearby). And it is true that, in a letter to Henry More, for example, Descartes does write that "I am speaking of thought, not of life and sensation. I do not deny life to animals, since I regard it as consisting simply in the heat of the heart; and I do not deny sensation, in so far as it depends on a bodily organ."[6] The crucial question is, however, How does Descartes understand *sensation*? On this point the evidence seems overwhelmingly to support the standard interpretation.

Descartes, in his *Reply to Objections VI*, characterizes three "grades" of sensation:

> To the first (grade) belongs the immediate affection of the bodily organ by external objects; and this can be nothing more than the motion of the sensory organs and the change of figure and position due to that motion. The second (grade) comprises the immediate mental results, due to the

> mind's union with the corporeal organ affected; such are the perceptions of pain, of pleasurable stimulation, of thirst, of hunger, of colours, of sound, savour, cold, heat, and the like. . . . Finally the third (grade) contains all those judgments which, on the occasion of motions occurring in the corporeal organ, we have from our earliest years been accustomed to pass about things external to us.[7]

The first grade of sensation is common to animals and humans; "it depends," in the words of Descartes's letter to More, "on a bodily organ," and so may be attributed to any being having the appropriate bodily organ, including animals. For example, a human being and a giraffe can both have sensations of sight, in this sense of "have sensations." But in *this* sense, to say that animals "have sensations" is only to say that they have sensory organs (e.g., eyes and ears) that can be stimulated by external stimuli; and this stimulation can occur, Descartes clearly implies, *without* "the mind's union with the corporeal organ affected" and thus without consciousness. To allow that animals "have sensations" of the first grade, therefore, in no way implies that they are conscious.

Unlike this first grade, the remaining two grades of sensation are possible only if a mind is present, either to form a "union with the corporeal organ affected" (the second grade) or to pass "judgments . . . about things external to us" (the third grade). Now, it is an essential part of Descartes's philosophy, as Cottingham himself freely acknowledges,[8] that animals have no mind. Thus, since, according to Descartes, having sensations other than those of the first grade requires the presence of a mind, Descartes's teaching must be that animals have no sensations of grades two and three. Cottingham, then, is correct to note that, as in his letter to More, Descartes does not deny that animals have sensations; but he is incorrect in thinking, as he evidently does, that Descartes's attribution of sensations to animals shows that Descartes thinks that animals are conscious, at least to some extent. It is perfectly possible, given Descartes's understanding of sensation, to say that animals "have sensations," on the one hand, and on the other, to deny that they are conscious. Cottingham's challenge to the standard interpretation thus misfires, and it is this interpretation of Descartes that will be considered in the argument that follows. When Descartes denies that animals "have thoughts," in brief, he denies that they are consciously aware of anything, those "sensations" they do have being nothing more than "the immediate affection of a bodily organ by external objects." While granting that, as Cottingham observes, "to believe that a dog with a broken paw is not really in pain when it whimpers is a quite extraordinary achievement

even for a philosopher,"[9] there are adequate grounds for attributing this achievement to Descartes.

Descartes, in fact, is not alone in managing this achievement, neither among philosophers, as we shall see, nor among the scientists of his day, as the following passage, written by an unknown contemporary of Descartes's, amply attests.

> The (Cartesian) scientists administered beatings to dogs with perfect indifference and made fun of those who pitied the creatures as if they felt pain. They said the animals were clocks; that the cries they emitted when struck were only the noise of a little spring that had been touched, but that the whole body was without feeling. They nailed the poor animals up on boards by their four paws to vivisect them to see the circulation of the blood which was a great subject of controversy.[10]

Though Descartes himself is said to have had a pet dog that he treated well, *as if* the animal were conscious,[11] the practice of these physiologists was in keeping with the spirit of his teachings, which, he writes, "are not so much cruel to animals as they are indulgent to mankind . . . since it absolves them of the suspicion of crime when they eat or kill them."[12]

1.2 HOW NOT TO CHALLENGE DESCARTES

It is tempting to dismiss Descartes's position out of hand, as the product of a madman. But Descartes is far from mad, and his denial of animal consciousness cannot, and should not, be dismissed in an *ad hominem* fashion; we should not, that is, dismiss *what* he says by attacking *him* as a person. Descartes is well aware of the commonsense view that animals are conscious and that his denial is apt to excite stormy protests. But he denies it nonetheless, observing that the belief in animal consciousness is a "prejudice to which we are accustomed from our earliest years."[13]

It is significant that Descartes labels this belief a "prejudice." A prejudice is a belief we accept uncritically, without giving due attention to the need to justify it. For example, if people believe that the world is flat without inquiring into the reasons for accepting this, they are prejudiced. Descartes's point is that this same diagnosis applies to the belief that animals are conscious: we simply haven't taken the time to understand and justify it. If, in reply, we protest by saying that "everyone believes that animals are conscious," the impotence of our reply can be easily seen. We would not change our verdict about the belief in a flat earth just because all or most people happened to believe the earth is flat. Neither should Descartes change his verdict about the belief in animal conscious-

ness for similar reasons. Even if it is true that "we all believe that animals are conscious" (and how can that be true, given Descartes's dissenting voice?), the appeal to what "we all believe" could, at this stage, simply wrap a naked prejudice in the cloak of respectability.

The need to engage Descartes head-on, rather than to seek to avoid the encounter by *ad hominem* devices, can be brought home in another way. Think of a dog's behavior at the sound of a friend's footsteps. The dog behaves excitedly. There is no other word for it. He jumps, barks, scratches at the door, wags his tail—a veritable whirling dervish. Were Descartes to deny this, then his views about animals could be easily dismissed. It is a matter of ordinary perception that the dog behaves as described, and a correct use of ordinary language, under these circumstances, to say that the dog "is excited." But Descartes does not deny any of this. What he denies is that we must attribute consciousness to the dog to explain the dog's observed behavior. The difference between Descartes and those who accept animal consciousness is not a disagreement over any fact regarding overt animal behavior. The disagreement concerns *how we may best explain or understand* these facts.

Once this much is seen, we should also see that it is pointless to attempt to challenge Descartes's view of animals by reciting *any* fact about how animals behave—for example, that the dog behaves excitedly, that porpoises are loyal, or that a cat once traveled three thousand miles, on her own, to be reunited with her human companions. The recitation of these facts is no challenge to Descartes. *He* can accept them all. The question that separates Descartes and his critics is *how these facts are to be interpreted and explained.*

Anthropomorphism

There is a further consideration that militates against uncritical acceptance of common sense in the present context. This is the problem of anthropomorphism. Webster's defines the relevant sense of the verb, *to anthropomorphize,* as "to attribute human characteristics to things not human." Taken literally, the definition is unsatisfactory, since "being alive," for example, is a "human characteristic" and yet we are not guilty of anthropomorphism if we say that a tree or a squid "is alive." What the definition must mean is that we anthropomorphize if we attribute a characteristic that belongs *only* to humans to things not human, as in "the moon gazed in a mystical state" or "the grass made a contract with the rain." To anthropomorphize is not to talk nonsense; what is said is intelligible, and there is a point to saying it; it is just that what is said is not

literally true. To anthropomorphize is to make more of the object spoken of than it really is. It is to speak of it as if it were humanlike, when it is not.

Now, if consciousness is a characteristic of humans only, then we are guilty of anthropomorphism if we regard animals as conscious; we make more of animals than what they are; we erroneously picture them as humanlike. Suppose the charge of anthropomorphism is made against those who view animals as conscious. How can it be met? Surely not by *repeating* the attribution, no matter how many times it is repeated, and no matter how many different people repeat it. All repeating the attribution could show is how many people view animals as conscious, and this fact, while of interest in some contexts, is impotent in the present one; however many people regard animals as conscious, it is quite possible that the view held by these people is anthropomorphic. Given the charge of anthropomorphism, and given the deficiency of trying to meet it by insisting oneself, or getting others to insist, that animals are conscious, it should be clear that another way must be found if this charge is to be met.

We have seen, then, that Descartes is not so mad as to deny that the dog behaves excitedly at the sound of his friend's footsteps. What he denies is that this shows that the dog is consciously aware of anything, either the sounds made (sensations of grade two) or his belief that the sounds are those of his friend (sensations of grade three). We have also seen that certain tempting ways to reply to him will not pass muster. Before developing a more reasoned response, we need to consider why Descartes—a man of substantial intelligence by any measure, truly a pioneering thinker in philosophy, mathematics and natural science—sets forth a view so much at odds with common sense. A survey of Descartes's thought reveals a variety of reasons, some of which we shall consider in the pages that follow.

1.3 THE PRINCIPLE OF PARSIMONY

To begin with, Descartes seems to accept the *principle of parsimony* or *simplicity* regarding the scientific explanation of phenomena. The fourteenth-century English philosopher William Occam expresses this principle with admirable simplicity when he states that we are "Never to multiply entities beyond necessity." This principle, frequently referred to as "Occam's razor," means that it is better (i.e., rationally preferable) to explain phenomena by making as few assumptions as possible. 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. Though the debates engendered by this principle are far from simple, it seems eminently reasonable. After all, how can it be reasonable to make more assumptions when fewer will do?

Now, Descartes can be understood as believing that we face a choice regarding the explanation of animal behavior. The first alternative (let us call this the *Mechanistic Alternative*) is to explain animal behavior in purely mechanical terms. Animals are viewed, in Descartes's words, as "nature's machines," differing from, say, pinball machines in that animals are alive while these machines are not, but still essentially like these machines in that neither animals nor pinball machines are conscious. In the case of pinball machines, we explain their behavior, to put it very crudely, in terms of the passage of electrical current through myriad circuits, the current having been activated by the impact of a metal ball, and there is no point in the pinball machine's behavior where it must be conscious in order to do what it does. A purely mechanical explanation suffices. Well, animals are like a pinball machine, according to the Mechanistic Alternative, though the mechanics of their behavior differ from those of nonliving machines. In place of electrical current passing through wires and circuits, animals have, so the science of Descartes's time taught, various "humors" or "animal spirits" which, coursing through their bloodstream, cause, when stimulated, various behavioral responses in the animal, one kind of stimulation of the animal spirits eliciting hunger-behavior, for example, while another causes behavior associated with fear. Today, it is true, belief in animal spirits or humors has been replaced by alternative physiological and neurological concepts to serve as terms in the stimulus-response explanatory model, but Descartes would likely view the advance in our understanding of the physiology of animals as adding credence to, rather than as casting doubt upon, the case for the Mechanistic Alternative. The more we understand what animals are like, Descartes would likely believe, the more reason we have to view them as essentially like man-made machines: not conscious, not aware of anything. Just as it is irrational to suppose that a pinball machine feels threatened, angry, humiliated or suffers pain when, because we play too vigorously, it lights up "Tilt!," so it is irrational to believe that animals feel threatened, angry, humiliated or suffer pain; *their* cries and whimpers are merely *their* machine's way of registering "Tilt!" The Mechanistic Alternative thus does not deny any observable fact about how animals behave. What it does is offer an explanation of this behavior, and of animal nature generally, that denies animal conscious-

ness. Perhaps it is not so remarkable, not so "extraordinary (an) achievement," that a mind possessed of (or by) the Mechanistic View could, as the Cartesian scientists did, "administer beatings to dogs with perfect indifference."

That, very roughly, is the Mechanistic Alternative. The second (the *Nonmechanistic Alternative*) differs, not because it disputes any fact about animal anatomy or physiology, nor because it denies that animals behave as they do, but because it affirms that many animals, not just human beings, are conscious. This second alternative certainly appears to be less simple than the Mechanistic Alternative, since it involves two assumptions, not just one, about the basic makeup of animals: animals are not *just* more or less complicated "living machines"; they are also more or less conscious or aware.

Suppose we accept the principle of parsimony, and suppose we grant, for the sake of argument, that each of the two alternatives just explained provides an explanation of animal behavior equal to the other. Which alternative would it be most reasonable to choose? Given these assumptions, reason would be on the side of the Mechanistic Alternative, the one where animals are viewed as essentially like pinball machines. That is the alternative Descartes selects, and some but, as we shall shortly see, not all of his reasons for choosing it are based on considerations of parsimony or simplicity. We may find some flaw in Descartes's argument, but at least the foregoing should serve to show that Descartes does have reasons, does have an argument, for his denial of animal awareness. He does not make his denial in an argumentative vacuum.

Descartes's having reasons is no guarantee that he has good ones, however, and we must now inquire into the merits of the case for accepting the Mechanistic Alternative. Does it provide a simpler explanation of the facts? That is the central question before us. In answering it we must take special care not to beg the question by assuming that animals are conscious, and we must also avoid resting criticisms of Descartes's position just on appeals to common sense or "what we all believe," since these latter appeals would invite Descartes's predictable protest that they embody a "prejudice."

1.4 LA METTRIE'S OBJECTION

The eighteenth-century French philosopher and physician Julien Offay de La Mettrie suggests one way to challenge Descartes.[14] This consists of urging that the Mechanistic Alternative proves more than Descartes realizes. For if, as this alternative alleges, we ought not to view animals as

conscious because we can explain *their* behavior mechanistically, why may we not do the same in the case of *human beings*? And if we can, must we not conclude that humans, not just animals, are "machines"? After all, what could be simpler, more in keeping with the principle of parsimony, than to explain all behavior, including that of humans, by reference to a single principle? In contrast to Descartes, La Mettrie takes the Mechanistic Alternative a step further, concluding that the "mental life" of humans is neither more nor less than the alterations of the "humors" in the human nervous system.

One reply Descartes might give is irrelevant. In a letter to the Marquis of Newcastle, Descartes writes that if animals were conscious as we are, "they would have an immortal soul like us. This is unlikely, because there is no reason to believe it of some animals without believing it of all, and many of them such as oysters and sponges are too imperfect for this to be credible."[15] What Descartes seems to be alleging here is that humans should, but animals should not, be viewed as conscious because we are immortal and they are not. Descartes is confused. The ascription of *consciousness* to any given individual does not entail that that individual has an immortal soul. People who deny that there is a "life beyond the grave" are not committed to denying their own consciousness in this life or to making a similar denial in the case of others. It may be true that it was largely owing to his religious convictions, or to the religious convictions of those ecclesiastics he was obliged to please,[16] rather than to his respect for the principle of parsimony, that Descartes attributes consciousness and thus, on his view, a mind or soul (he uses the terms interchangeably) to human beings while denying a mental life to animals. But whatever Descartes's reasons may be for equating the (conscious) mind and the (immortal) soul, there is no good reason why we must follow suit. Sponges and oysters may not be conscious; but whether they are or are not is an issue to be decided in their case, as in the case of human beings, independently of questions about immortal souls.

1.5 THE LANGUAGE TEST

Unlike the first, a second reply available to Descartes is germane to the objection raised by La Mettrie. Suppose we could point to a kind of behavior that can be explained only by postulating consciousness; and suppose, further, that it could be shown that humans, but not animals, exhibit this kind of behavior; then we could attribute consciousness to humans, but deny it to animals, independently of the irrelevant considerations about who or what is "perfect" enough to have an immortal soul.

One can find such an argument in Descartes: the kind of behavior is linguistic behavior, a kind, he thinks, that only humans can engage in. Among the relevant passages in Descartes's writings, the following is perhaps the clearest on this point:

> In fact, none of our external actions can show anyone who examines them that our body is not just a self-moving machine but contains a soul with thoughts, with the exception of words, or other signs that are relevant to particular topics without expressing any passion. I say words or other signs, because deaf-mutes use signs as we use spoken words; and I say that these signs must be relevant, to exclude the speech of parrots, without excluding the speech of madmen, which is relevant to particular topics even though it does not follow reason. I add also that these words or signs must not express any passion, to rule out not only cries of joy or sadness and the like, but also whatever may be taught by training to animals. If you teach a magpie to say good-day to its mistress, this can only be by making the utterance of this word the expression of one of its passions. For instance it will be the expression of the hope of eating, if it has always been given a tidbit when it says it. Similarly, all the things which dogs, horses, and monkeys are taught to perform are only expressions of their fear, their hope, or their joy; and consequently they can be performed without any thought. Now it seems to me very striking that the use of words, so defined, is peculiar to human beings. Montaigne and Charron may have said that there is more difference between one human being and another than between a human being and an animal; but there has never been known an animal so perfect as to use a sign to make other animals understand something which expressed no passion; and there is no human being so imperfect as to not do so, since even deaf-mutes invent special signs to express their thoughts. This seems to me a very strong argument to prove that the reason why animals do not speak as we do is not that they lack the organs but that they have no thoughts. It cannot be said that they speak to each other and that we cannot understand them; because since dogs and other animals express their passions to us, they would express their thoughts also if they had any.[17]

This and related passages[18] raise more questions than they answer. Some of these will be considered in what follows. For the present it is sufficient to emphasize that Descartes here recommends a particular test, henceforth referred to as *the language test*, to determine which individuals are conscious. Individuals who are able to express their thoughts by using a language, either words or their equivalent (e.g., the signs used by deaf-mutes), pass the test and thereby display their consciousness. Those who are unable to do this thereby flunk the language test and are thereby

proven to "have no thoughts" and thus, given the standard interpretation of Descartes's view of the relationship between thought and consciousness, to lack consciousness. It is Descartes's belief that no animal can pass this test. It is worth asking, before testing the adequacy of the language test itself, whether he is right.

Can Any Animals Use Language?

It would be unfair to Descartes to criticize him for failing to take note of efforts to teach primates, including gorillas and chimpanzees, a language such as the American sign language (ASL) for the deaf. Such efforts were not undertaken—though they were imagined (e.g., by La Mettrie)—until very recently. A number of books and essays have chronicled this enterprise, and many advocates of the Nonmechanistic Alternative have been quick to give these early reports their enthusiastic support. Whether this support might be a bit premature is a point to be discussed. The following account of an interview, conducted in ASL, between *New York Times'* reporter Boyce Rensberger and Lucy, an eight-year-old chimp who had received instruction in American sign language, is typical of the early results reaching the general public.

> Reporter (holding up a key): What is this?
> Lucy: (A) key.
> Reporter (holding a comb): What is this?
> Lucy: (A) comb (takes comb and combs reporter's hair, then hands comb to reporter). Comb me.
> Reporter: O.K. (combs Lucy)
> . . . .
> Reporter: Lucy, do you want (to) go outside?
> Lucy: Outside, no. (I) want food, (an) apple.
> Reporter: I have no food. Sorry.

Regarding the interview, Rensberger writes:

> Brief. Not especially deep. But certainly communication. . . . After each exchange, Lucy and I would stare into each other's eyes for a few seconds. I do not know how she felt, but I was nervous. I was participating in something extraordinary. I was conversing in my own language with a member of another species of intelligent being.[19]

There are many deep, troubling questions such accounts leave unanswered. Two in particular stand out. The first concerns the nature of language. What is a language? Unless we know, the claim that Lucy is "able to use a language" remains murky. Perhaps we are attributing to

her more than her behavior merits. If, for example, a language, properly conceived, involves not only a vocabulary (words, signs) but also rules of syntax governing how these words or signs can properly be strung together, then possibly Lucy's performance does not constitute a genuine use of language, or, alternatively, use of a genuine language. The issues are complicated, well beyond the reach of the present inquiry. Still, it is important to realize that this is a question that must be explored by anyone who views a chimp such as Lucy as a language-user.

Second, even assuming that Lucy qualifies as a language-user, one might ask how competent she is in comparison to, say, a human child who is in the early stage of language acquisition. Serious doubts have recently been raised about believing that chimps and these children display equal competence. The person raising the strongest doubts is hardly unqualified and cannot be pictured as one having a vested interest in discrediting animals' linguistic abilities. Herbert S. Terrace, professor of psychology at Columbia University, headed a four-year effort to teach American sign language to a chimpanzee named Nim Chimpski. Nim mastered the signs for well over a hundred words, including *finish, berry, hello, sleep, chair,* and *play*. All early interpretations of the chimp's success indicated considerable facility at language acquisition. Upon a more careful reconsideration of the evidence, however, including videotapes of sessions involving Nim and his teachers, Terrace came to question his earlier assumptions. A number of relevant facts emerged. For example, unlike children, including deaf children learning sign language, Nim never reached the point where he regularly extended the length of his sentences. "Having learned to make utterances relating a subject and a verb (such as 'Daddy eats')," Terrace writes, "and utterances relating a verb and an object (such as 'eats breakfast') the child apparently learns to link them into longer utterances relating the subject, verb, and object (such as 'Daddy eats breakfast'). Later, the child learns to elaborate that utterance into statements such as 'Daddy didn't eat breakfast' or 'When will Daddy eat breakfast?' and goes on to still further elaborations. Despite the steady increase in the size of Nim's vocabulary, the mean length of his utterances did not increase."[20]

Another pair of relevant findings were the degree to which Nim signed spontaneously (that is, without someone else initiating the conversation) and the frequency with which the signs Nim used had been used by the other party to the conversation. One statistical breakdown of what is called the *discourse analysis* of children learning a language, such as English, shows that children frequently are more apt to respond to, rather than to initiate, conversation (70 percent of the child's utterances were

occasioned by what someone else said), but that "in most instances the child did not reply by simply repeating what the parent had said but *added to the parent's utterances or created a new one from totally different words*. Less than 20 percent of a child's utterances were imitations of its parent's utterance."[21] Terrace sees Nim's case as significantly different.

> During Nim's last year in New York only 10 percent of his videotaped utterances were spontaneous. Approximately 40 percent were imitations or reductions. If the conversations we videotaped and transcribed were representative of the thousands of conversations from which our corpus was derived—and I have no reason to believe that they were not—I must conclude that Nim's utterances were less spontaneous and less original than those of a child.[22]

Thus, Terrace writes that he

> must therefore conclude—though reluctantly—that until it is possible to defeat *all* plausible explanations short of the intellectual capacity to arrange words according to a grammatical rule, it would be premature to conclude that a chimpanzee's combinations show that same structure evident in the sentences of a child. The fact that Nim's utterances were less spontaneous and less original than those of a child and that his utterances did not become longer as he acquired more experience in using sign language, suggests that much of the structure and meaning of his combinations was determined, or at least suggested, by the utterances of his teachers.[23]

Of course, even if it were established that chimpanzees do not have the ability for language acquisition equal to that of young children, it would not follow that they have none at all. The issue of the extent to which chimps and other primates can "learn to talk" remains one worthy of further study, as does the question, What is a language? Neither issue can be pursued in detail here. It is sufficient for present purposes to remind ourselves that not all the evidence is in and that, until more is known, we would do well to remember Terrace's cautioning words, not to be "premature" in attributing significant linguistic abilities to nonhumans such as Nim.

Quite apart from the problems relating to the use of language by chimps or gorillas, there is a further point that cries out to be made. Suppose that, contrary to Descartes's view, there are some animals who *are* able to use language to express their thoughts—chimps and gorillas, let us suppose, and perhaps a few others. That fact by itself—if it is a fact—carries no weight whatsoever for the many, many other species of

animals whose members are not able to develop a facility for using a language such as American sign language. Thus, if, following Descartes, we were to agree that the use of a language to express one's thoughts is the decisive test for determining which animals are conscious, the very most we could do is correct Descartes for being too conservative. Besides humans, there would be a few other species whose members are conscious. As for cats and dogs, chickens and hogs, llamas and tigers, for example, since they give no evidence of being able to master the use of a relevant language, they would remain in the category assigned them by Descartes. They would remain in the category of "thoughtless brutes." This is not the outcome desired by many who accept the nonmechanistic view of animals, which should be enough to direct their critical attention to other, more fundamental issues. The question they should ask is not, How many animals can use language to express their thoughts? Rather, it is, Is the use of language a reasonable test for determining which individuals are conscious?

The Inadequacy of the Language Test

The language test holds that individuals who are unable to use a language lack consciousness. This cannot be true. If all consciousness depended on one's being a language-user, we would be obliged to say that children, before they reach an age when they can speak, cannot be aware of anything. This not only flies in the face of common sense—an appeal that, as noted earlier, Descartes is likely to dismiss as possibly an appeal to prejudice—but, more fundamentally, it makes utterly mysterious, at best, how children could learn to use a language. For if, prior to their mastery of a language, children are not conscious of anything—they are, that is, not aware of sound, or light, or tactile sensations—then how shall we teach them the rudiments of, say, English? Shall we write it out for them? But if they are not conscious of *anything*, there can be nothing for them to learn by means of their sight. Shall we speak it? But if they are *altogether* lacking in awareness, how shall our sounds reach them? The point is, instruction in language use requires *conscious reception* on the part of the learner. Unless we assume that, *before* learning a language a child can be aware of something, we shall be at a loss to explain how the child can learn it. When we dispute the adequacy of the language test as a test of consciousness, therefore, we should not be viewed as trying to combat Descartes's views merely by appealing to common sense. Since the language test implies that pre-language-using children are not conscious at all, and since this makes it mysterious (miraculous?) how they could learn

to use a language, we have principled reasons for rejecting the test's adequacy. However, once we have come this far, we cannot treat the language test as a kind of double standard, allowing that humans do not have to pass it in order to be conscious while insisting that animals do. If a young child can be conscious independently of learning a language, we cannot reasonably deny the same of animals, despite the latter's inability to say what they are aware of.

One can anticipate the following objection. We cannot argue that dogs and cats must be conscious before they learn to use, say, English, since otherwise they could never learn to use it. And we cannot argue in this way for the simple reason that dogs and cats *never do learn* to use a language such as English. This disanalogy between the human and animal cases suggests an argument for denying consciousness to animals while ascribing it to humans.

1. Only those beings who have the potential to master a language are conscious without having to master it.
2. Animals (with the possible exception of chimps and gorillas, say) lack this potential.
3. Therefore, animals (with a few possible exceptions) are not conscious.

There are reasonable grounds for denying this argument's first premise. Certainly some mentally enfeebled humans, who lack the potential for language acquisition, seem nonetheless to be conscious of some things—for instance, sounds and pains. Thus, if some humans who lack the potential for language acquisition are conscious, then one cannot deny that animals who lack this potential can be. Moreover, even in the case of those humans who do have the potential to become language-users, it is unclear how this potential assures their actual prelinguistic consciousness. There are well-known problems involved in inferring what is actual from what is potential. When Henry Aaron was a wee toddler it was true that he was potentially the person who would set a record for the most career home runs hit in major league baseball, and, as things turned out, he actually set this record. But it does not follow that the-wee-toddler-who-is-Henry Aaron *at that time* actually holds this record; at most what follows is that he will in time set the record. Similarly, even if baby Jane has the *potential* to become a language-user, and even if it is true that to be an *actual* language-user one must be conscious, it does not follow that she is actually conscious because she has the potential to learn a language. At the very most what follows is that she will in time become conscious,

which is a significantly different belief than the one expressed in this argument's initial premise.

But to concede even this much to this argument would be to concede to it more than it deserves, since the first premise assumes, without explaining, that there is an essential connection between, on the one hand, being able to use a language, including having the potential to do so, and, on the other, being conscious. Whether there *is* such a connection, however, is precisely the question at issue. As things stand, therefore, premise (1) of this argument is question-begging: it assumes the truth of the very thing it is called upon to prove. For this reason, if for no other, this argument fails to justify the belief that the only beings who are conscious are those who pass the language test or who have the potential to do so.

1.6 SKEPTICISM

At this juncture, Cartesians in particular face a serious problem. Since (a) they claim that the behavior of animals is to be explained by the Mechanistic Alternative but favor the Nonmechanistic Alternative for explaining the behavior of human beings; since (b) appeal to immortal souls is irrelevant to questions about who or what is conscious (1.4), and since (c) the language test has been shown to be less decisive than Descartes assumes (1.5), how are Cartesians to avoid the conclusion that human beings too, not just animals, are "thoughtless brutes"? As noted earlier (1.4), this is the conclusion La Mettrie thinks Descartes should reach. And perhaps he is right. That issue is beyond the range of the present work. The same is true of another, related question. This latter question asks how any one person can know that there are "other minds," other human beings in particular, who are consciously aware of anything. There is a vast and ever expanding literature devoted to this problem. But though skeptical challenges to our claims to knowledge deserve a respectful hearing when voiced in appropriate contexts, the present work is not one of them. Here we must side with Descartes, at least in one respect, and part company with La Mettrie. Human beings, we shall assume, are not "thoughtless brutes" who only "respond" to "stimuli," not "mindless machines," but are creatures who have a mental life. This is a necessary assumption for any work in moral philosophy. If human beings do not experience pleasure and pain, for example, or do not prefer some things over others, or cannot make decisions and act intentionally, or are incapable of understanding what is involved in

treating others with respect, then there could not be anything for ethical theory to be a theory of. Our attempt to understand the morality of our acts or institutions, in other words, must be premised on certain assumptions about the sort of creature we are, and a minimal assumption in this respect is that we are creatures with a mental life. In concert with Descartes, therefore, and in this respect in opposition to La Mettrie, we will assume that humans have a mental life (have, that is, sensations of grades two and three or, alternatively, that we perceive, believe, remember, expect, desire, prefer, etc.). Skeptical challenges to this assumption will have to be aired and addressed on some other occasion.

1.7 EVOLUTIONARY THEORY AND CONSCIOUSNESS

Given the assumption that we humans are conscious, the question must still arise concerning what other creatures, if any, are. If the answer depended on which creatures have immortal souls or have the ability to pass the language test, the Cartesian answer (all and only human beings are conscious, at least among terrestrial creatures) might yet be defensible. But these ways of approaching the question of creature consciousness have been shown to be inadequate. How else might this question be approached?

Evolutionary theory provides a significantly different approach to the question of animal awareness than the one offered by Descartes. If we assume, as Descartes does, that human beings are conscious, then it would be quite remarkable indeed, given the basic thrust of that theory, if *Homo sapiens* were the *only* species whose members had this attribute. Darwin, for one, is quite emphatic in denying a privileged status to human beings in this regard. "There is," he writes, "no fundamental difference between man and the higher mammals in their mental faculties."[24] And, again: "The difference in mind between man and the higher animals, great as it is, certainly is one of degree and not of kind."[25] Within evolutionary theory, this similarity between human and animal mental life rests on a number of related considerations. One concerns the visible complexity of, and similarities between, human and animal anatomy and physiology. Another concerns the basic belief that more complex forms of life have evolved from more simple forms, a belief that implies that both humans and some animals evolved from simpler life forms, though not necessarily the same life forms in every case (it is possible that there are several different branches of evolutionary development or lines of descent which, though they began at the same point, diverged at different times in response to local environmental conditions). For present

purposes, however, the crucial point is *the survival value of consciousness*. If consciousness had no survival value—if, in other words, it was of no or little assistance in the struggle of species to adapt to and survive in an ever changing environment—then conscious beings would not have evolved and survived in the first place. But we know from the human case that conscious beings exist. Thus, given evolutionary theory and given the demonstration of the survival value of consciousness the human case provides, we have every reason to suppose that the members of other species also are conscious. Given the survival value of consciousness, in other words, one must expect that it would be present in many species, not in the human species only. The contemporary animal physiologist Donald R. Griffin states this point forcefully when he writes as follows:

> It thus becomes almost a truism, once one reflects upon the question, that conscious awareness could have great adaptive value, in the sense that this term is used by evolutionary biologists. The better an animal understands its physical, biological, and social environment, the better it can adjust its behavior to accomplish whatever goals may be important in its life, including those that contribute to its evolutionary fitness. The basic assumption of contemporary behavioral ecology and sociobiology . . . is that behavior is acted upon by natural selection. . . . From this plausible assumption it follows that—insofar as any mental experiences animals have are significantly interrelated with their behavior—they, too, must feel the impact of natural selection. To the extent that they convey an adaptive advantage on animals, they will be reenforced by natural selection.[26]

Of course, to argue that animals "have a mental life" does not by itself establish the relative complexity of their mental life. That is an issue that will occupy our attention in the following chapter. What attributing conscious awareness to animals on the basis of evolutionary theory does do, is provide us with a theoretical basis for making this attribution to animals *independently of their ability to use a language*. The ability to use a language no doubt also has significant survival value. But evolutionary theory does not imply that the emergence of consciousness either does or must coincide with the emergence of this capacity; indeed, if it did imply this, evolutionary theory would be at a loss to explain how language could be taught or learned. If, as seems reasonable to suppose, linguistic ability is a higher-order cognitive capacity, one that presupposes consciousness, then evolution will support our viewing other animals as having both consciousness as well as other, lower-order cognitive capacities from which the higher-order capacities required for language mastery have evolved. The application of the principle of parsimony to the evolu-

tionary process supports this view, as Griffin makes clear in the following passage:

> Accepting the reality of our evolutionary relationship to other species of animals, it is unparsimonious to assume a rigid dichotomy of interpretation which insists that mental experiences have some effect on the behavior of one species of animals but none at all on any other. It would be absurd to deny that mental experiences are important components in human behavior and human affairs in general.[27]

If, then, "mental experiences *are* important components in human behavior and human affairs in general"—and recall that, in the present work, as in any other work in moral philosophy, we assume that human beings have a mental life, that we can know that there are other (human) minds, and that, in Griffin's words, our mental experiences play an important role "in human behavior and human affairs generally"—*if* this much is conceded, then it would be unparsimonious, given the major thrust of evolutionary theory, to deny that the mental life of animals plays a similar role in their behavior and our understanding of it. Granted, accepting this much does not by itself settle the thorny question of *which* animals are most reasonably viewed as having a mental life, a question addressed below (1.9). What it does provide is a theoretical basis, independent of the ability to use language, for viewing some nonhuman animals as conscious.

There is another advantage garnered from approaching the question of animal awareness from the vantage point of evolutionary theory. Frequently people approach this question as if it could be settled just by observing how animals behave. The issue is often thought to be resolved, once and for all, *merely* by citing the dog's excited behavior at the sound of his master's footsteps on the stairs, for example, or by *just* noting the loyal behavior of dolphins. It is well to remember what was said earlier about the impotence of such examples (1.2). How animals are observed to behave may be compatible with disparate, incompatible explanations of their observed behavior—for example, with Descartes's and Darwin's. Because this is so, it is a plain mistake to suppose that one can prove that dogs and dolphins are conscious *just* by citing any one or any number of examples of how they behave. The attribution of consciousness to animals must rest on grounds *in addition to* how they behave, though how they behave must surely be consistent with any viable theoretical explanation of why they behave as they do. Though how animals are observed to behave may initially give rise to the belief that they have a mental life, the validity of the attribution of conscious-

ness to them must ultimately rest on a theory about the nature of those animals to whom consciousness is attributed. And this theory, like any other, must be assessed *as a theory*, something we fail to do if we content ourselves with citing facts that are themselves consistent with inconsistent theories.

1.8 DESCARTES'S DOWNFALL

Evolutionary theory provides a theoretical basis for attributing a mental life to animals; Descartes's theory does not. Which theory is preferable? Obviously, this is a complicated question, since how theories are to be assessed is itself a highly controversial issue. However, there are two kinds of considerations that are relevant in the present case. The first is that of simplicity: other things being equal, it is reasonable to select a theory that makes fewer assumptions over one that makes more. A second is explanatory power: other things being equal, it is reasonable to select the theory that explains a broader range of facts. Both considerations will become clearer as we apply them to an assessment of Descartes's theoretical position.

As was implied by the earlier discussion, Descartes is a dualist. He views reality as consisting of two basic, independent, and irreducible kinds of things: minds and bodies. Minds he regards as having no physical properties; they have no size, weight, shape and the like; minds are immaterial or spiritual and thus have no location in space. My mind is not to the left or right of anything; literally speaking, my mind is not any*where*. Moreover, according to Descartes, minds are "things which think," and a thing which thinks, he states, is something "which understands, which conceives, which affirms, which denies, which wills, which rejects, which imagines also, and which perceives."[28]

Bodies, by contrast, according to Descartes, have physical properties. They have size, shape; they are extended. What bodies do not have are thoughts. Bodies are "dumb," in the sense that they completely lack thought; they are *non*mind; they are *non*consciousness. This is true of all bodies and true equally of each. A rock lacks consciousness (thought) just as much as a tree, a dog's body, or, for that matter, a human body. All are equally "dumb."

Human bodies thus do not differ essentially, in and of themselves, from any other kind of body. Where they differ is that they are associated with minds—human minds. All other bodies, according to Descartes, lack a mind with which they are associated; and the reason why we feel pain, whereas a dog feels none, according to Descartes, is not because our

bodies are in any essential way different from a dog's; it is because our bodies are, whereas a dog's is not, associated with a non-bodily, immaterial mind.

Descartes's dualism encounters well-known problems. Only one shall concern us here. This is the problem of interaction. To set the stage, it is a commonplace of ordinary experience that (1) what happens in or to our bodies frequently makes a difference to what we are aware of, and (2) what transpires in our mental life frequently makes a difference to our bodily behavior. As illustrative of (1), consider stepping on a tack. A sharp metal object pierces my skin and lodges itself in my foot. This happens to my body. In ordinary circumstances (e.g., assuming my foot has not been anesthetized) I also experience a sensation of pain. This experience of pain is not, according to Descartes, another thing that happens in or to my body. On the contrary, since I am consciously aware of the pain, I must be aware of it in my mind. Thus, it at least appears to be the case that something that happened in my body (a pin enters my foot) *causes* a sensation in my mind; the sensation arises, to use the words of Descartes quoted in an earlier connection (1.1), as an "immediate mental result, due to the mind's union with the corporeal organ affected."

One aspect of the problem of interaction is that Descartes's theory of the mind and the body provides no earthly clue concerning how this alleged union of the two, this presumed causal interaction between them, could possibly take place. Physical processes, such as those that take place within our nervous system, can bring about physical changes. That much is clear, and Descartes certainly can allow this. What is not clear at all is how a physical process can bring about changes in something that is not physical, which, according to Descartes's theory, is what happens when the tack's intrusion into my foot causes a sensation of pain. The question is not, How *does* this occur? It is, How *can* this occur? By insisting, as he does, that the mind is immaterial and the body material, Descartes is unable to explain how what evidently does occur can occur. There is, within his theory, no plausible, intelligible way of explaining the possibility of "the mind's union with the corporeal organ affected."

The situation for Descartes is no less serious when viewed the other way around. Suppose that I know I must get out of bed if I am to make it to a dentist appointment, something I do not look forward to with particular relish. Still abed, I review the options and, despite my disinclination, decide to get up. Now, this decision is, on Descartes's theory, a mental event: it is something that occurs in my mind. What follows, after I have made my decision, is that my body behaves in a particular way—for instance, I throw back the covers and climb out of bed. But how *could* my

decision, which is a mental event in my mind—and thus, according to Descartes, one that takes place in an immaterial medium—cause my body, which is material, to move as it does? An event that occurs in my mind presumably could cause another mental event; but it is mysterious at best, and contrary to the laws of nature at worst, to hold that an immaterial something (my decision) caused a material something (my bodily movement). Whichever direction the mind and the body interact, whether a bodily process causes a mental event, or a mental event causes bodily behavior, Descartes's view of the mind and the body is quite unable to explain how this can occur. If the mind (consciousness) and the body interact, and if any adequate theory of the mind and body must explain how this interaction is possible, then Descartes's theory of the mind and the body is inadequate. On the present criticism, in short, Descartes's dualism fails the test of explanatory power.

There is a way to avoid this outcome, one taken by some of Descartes's followers. This is to deny that the human mind and body interact. It is clear how recourse to this expedient, if successful, could rescue Cartesian dualism from the criticism just given. If the mind and body don't really interact, then it is no objection to Descartes to point out that he fails to explain how they do. Only now, however, there is another problem, no less serious than that of interaction itself. If it is not the tack in my foot that causes my pain, from whence does this sensation come? And if it is not my decision to get up that leads me to throw back the covers, from whence does this physical movement originate?

One reply favored by some Cartesians is known as *occasionalism* and may be taken as illustrative of the difficulties attempts to defend dualism encounter. On this view, the tack's entering my foot does not cause my sensation of pain; rather, its entering my foot is *the occasion for God's causing my sensation of pain*, just as my decision to get up does not itself cause my body to move but is, rather, *the occasion for God's causing* it to do so. Since God is omnipotent (all-powerful), he can do anything, including cause my body to get up and my foot to hurt; and since God is omniscient (all-knowing), he certainly knows when I have stepped on a tack just as surely as he knows when I have decided to get up. Theoretically, therefore, there is no reason why an omniscient, omnipotent God could not do what the occasionalists say he does.

But this merely pushes the problem back a step. The question remains, How does interaction take place, if not between the human mind and body, then between God and the human mind and God and the human body? To be told that the "mechanics" of the interactions are obscure and elude our intellectual grasp ("God works in mysterious

ways, His wonders to perform") is not to be given any explanation; we are not, that is, any closer to understanding how my stepping on a tack is related to my experiencing pain. Indeed, we are further away from understanding this. One mystery is not explained by another. The Greeks had an expression for the artificial rescue of a character in a play who is in perilous danger and cannot secure his safety by relying on his own resources: *deux ex machina*, "god in a machine," so named because a person playing a god was actually lowered onto the stage by a machine, so that the hero of the drama might make an expeditious escape (like the heroine who, tied to the train tracks and facing certain death, is rescued at the last possible second by "the good guy"). Well, philosophers are not above attempting to rescue theories by similar means. The attempt to save Cartesian dualism by calling upon the machinery of god's intervention, after the fashion of occasionalism, is a classic instance of this phenomenon in philosophy.

A further point is worth making. The principle of parsimony, we know, requires that we not make any more assumptions than we need to make to explain what we want to explain. Before the introduction of God as a mediating causal agent between the human mind and body, dualism does not appear to make a great many assumptions. There are minds, and then there are bodies. Things look pretty simple. Once God is introduced, however, a third, extremely controversial assumption is added. And when, in addition to merely postulating his existence, God is called upon to fill the role of a sort of cosmic switchboard operator, completing all the calls to all the bodies from all the minds, and vice versa, a theory that once seemed a model of simplicity can now be seen to be swamping itself in the weight of its own assumptions. If every time anyone experiences physical pain, for example, we have to assume that "God completes the call," the superficial simplicity of dualism has gone by the boards.

There is a lesson to be learned from Descartes's downfall. It is that viewing the mind as an "immaterial something," as a soul, is certain to land us in trouble. For unless we are prepared to argue that, despite all appearances to the contrary, *everything* is immaterial, the problem of interaction will arise, and we will be left with a theory that is in principle unable to provide an intellectually satisfactory answer to the question of whether and, if so, how interaction takes place. One of the virtues of accepting an evolutionary view of the origin and development of consciousness is that it does not commit one to dualism regarding the mind and the body, and though this does not prove evolutionary theory true, it at least removes a possible source of objection. Viewed against the back-

drop of evolutionary theory, to say that animals "have minds" is not to say that they "have immaterial, immortal souls."

1.9 THE CUMULATIVE ARGUMENT FOR ANIMAL CONSCIOUSNESS

As noted at the beginning of this chapter, the belief in animal awareness is part of the commonsense view of the world. To say this is not to settle the question of animal awareness, however, since it may be true in any given case that the commonsense view of things is mistaken. Still, compelling reasons must be given against a commonsense belief before it is reasonable to abandon it. The role of appeals to common sense, in other words, both in the particular case of the question of animal awareness and in general, is not to guarantee the truth or reasonableness of a given belief, but to put the burden of proof on those who would deny it to show why it should be denied. Descartes, for the reasons given in the above, fails to meet this requirement when it comes to the issue of animal consciousness. He provides us with no good reason to give up our commonsense belief. The arguments he presents against this belief are seriously deficient and have been shown to be so without begging the question—that is, without assuming the truth or reasonableness of the commonsense belief in animal awareness. In this regard, at least, Descartes's attempt to unseat the verdict of common sense fails.

A second point, also noted earlier, is that ordinary language is not strained by talking of animals in a way that implies that they have a mental life. Everyone who is conversant in, say, English understands perfectly well what it means to say that Fido is hungry, or that a mother lion is annoyed by her overly playful cub. Once again, however, it does not follow that we ought to speak a certain way just because we ordinarily do. Possibly ordinary language stands in need of correction or improvement. However, as in the case of appeals to common sense, so also in the case of appeals to ordinary language: the burden of proof falls to those who would change our ordinary speech habits to provide compelling reasons why they should be changed. For example, if it could be shown that speaking as we ordinarily do in a given connection is a barrier to clear and effective communication, then perhaps we ought to modify or replace the way we ordinarily speak. But does our speaking in ways that attribute a mental life to animals stand in the way to clear and effective communication? Is there a clearer, more circumspect, less "anthropomorphic" way to speak about animals? Here we can do no better than to

relate the findings of the contemporary psychologist D. O. Hebb, who, together with others involved in a two-year project involving adult chimpanzees at the Yerkes Laboratory of Primate Biology, attempted to avoid "anthropomorphic descriptions in the study of temperament."[29] "A formal experiment was set up," Hebb writes, "to provide records of the actual behavior of adult chimpanzees, and from these records to get an objective statement of the differences from animal to animal." When the "anthropomorphic descriptions" were dispensed with, the results were less than useless. "All that resulted," Hebb continues, "was an almost endless series of specific acts in which no order or meaning could be found." When the "anthropomorphic descriptions" of emotion and attitude were allowed, however, "one could quickly and easily describe the peculiarities of the individual animals, and with this information a newcomer to the staff could handle the animals as he could not safely otherwise." Commenting on Hebb's findings, the contemporary American philosopher Gareth B. Matthews remarks that, once "relieved of methodological scruples, the staff found that they could rather easily agree among themselves that one animal was fearful, another nervous, a third shy. They naturally characterized one as friendly to human beings, though quick-tempered, whereas they found another to *hate* human beings, as they quite naturally put it."[30]

What the experience of Hebb and his colleagues points to is that there is nothing to be gained, and a good deal to be lost, if, in place of the mentalistic language we ordinarily use in talking about many animals, we institute a different, supposedly objective, nonmentalistic vocabulary. In themselves, the adequacy of ordinary language to this task and the failure of a language stripped of "anthropomorphic descriptions" do not show that animals have a mental life. What they do show is that we have no good reason to change how we ordinarily talk about certain animals on the grounds that doing so stands in the way of clear, effective communication. Indeed, just the opposite is true, if the experiment of Hebb and the others can be taken as illustrative. While it is possible that ordinary language requires correction in some cases, this is not one of them.

A third point that bears on the case for attributing a mental life to certain animals is the failure of a position like Descartes's, one that attempts to limit consciousness just to human beings (at least among the inhabitants of *terra firma*). To view humans as unique in this regard will oblige one who holds this view to provide an argument for accepting it. But what shape must such an argument take? It must insist upon a strict dichotomy between humans and animals, a dichotomy that involves attributing a nature to humans that differs in kind from that of all other

animals. Clearly, this "unique nature" could not be explained in evolutionary terms, since an evolutionary view denies that humans have a unique nature. More particularly, those who would view humans as the only conscious beings could not adequately ground this belief in considerations about human biology, physiology, and anatomy, since there is nothing in these aspects of human nature that is both relevant to our being conscious and uniquely human. How else, then, if not in this way, could one attempt to defend the thesis that humans, and humans alone, are conscious? Only by having recourse to some allegedly nonbiological, nonphysiological, nonanatomical or, in a word, nonphysical peculiarity of humans. This is the option Descartes selects, and we can perhaps understand why, given his views about the immortality of the (immaterial) human soul. But to select this option is, to use John Cottingham's apt phrase, to land one in "a philosophical mess."[31] This view of human consciousness (that consciousness is a defining characteristic of mind or soul, which is immaterial) will make the most common occurrences of ordinary life, such as feeling pain when one steps on a tack, *in principle* mysterious.

Of course, if how animals were observed to behave was at odds with viewing them as having a mental life, the plot would thicken. For example, if mice behaved in random, unpredictable ways when presented with some cheese after having gone without food for a day or so, non-Cartesians would have to wonder whether these animals weren't rather unruly "machines" after all. In fact, however, animal behavior is not random, is not in principle unpredictable. For example, the mice will eat the cheese, as one would naturally expect of conscious creatures, or if they do not, their unexpected behavior would be due to some untoward condition (e.g., a lack of sensory powers). So, while it is true that how animals behave does not by itself prove that they have a mental life, their behavior does provide a reason for viewing them in this way.

This finding, as well as the verdict of common sense and the demonstrable utility of talking about certain animals in mentalistic terms, accords with the implications of evolutionary theory. Roughly speaking, this theory implies that many animals, not just human beings, are conscious, not because (or only if) they possess an immaterial soul; certain animals are rightly deemed to be conscious because we (humans) are conscious *and* because, given the main thrust of evolutionary theory, the mental life of humans (our psychology) does not differ in kind from these animals.

There is, then, no *single* reason for attributing consciousness or a mental life to certain animals. What we have is *set* of reasons, which,

when taken together, provides what might be called the *Cumulative Argument for animal consciousness,* the main tenets of which can be summarized in the following way:

1. The attribution of consciousness to certain animals is part of the commensense view of the world; attempts to discredit this belief, if Descartes's attempt is taken as illustrative, have proven to lack adequate justification.
2. The attribution of consciousness to certain animals is in harmony with the ordinary use of language; attempts to reform or replace this way of speaking, as the experiment of Hebb and his associates illustrates, also have proven to lack adequate justification.
3. The attribution of consciousness to animals does not imply or assume that animals have immortal (immaterial) souls and thus can be made and defended independently of religious convictions about life after death.
4. How animals behave is consistent with viewing them as conscious.
5. An evolutionary understanding of consciousness provides a theoretical basis for attributing awareness to animals other than human beings.

The preceding does not constitute a strict proof of animal awareness, and it is unclear what shape such a proof could take. What it provides is a set of relevant reasons for attributing consciousness to certain animals. If it could be shown that the claimed relevance of these reasons is illusory, or that, though relevant, the claims made about consciousness in 1 through 5 are false, or that, though relevant and true, there are better reasons for denying consciousness in animals while affirming it in the case of human beings, *then* the Cumulative Argument would be exposed as deficient. Unless or until such challenges are made and sustained, we have principled reasons for parting company with Descartes and attributing consciousness—a mind, a mental life—to certain animals.

1.10 WHICH ANIMALS ARE CONSCIOUS?

The Cumulative Argument provides a basis for attributing consciousness to beings other than humans while leaving it an open question which animals are conscious and how highly developed the consciousness of various animals is. This latter problem will occupy our attention in the following chapter. It is the former problem, the one concerning which animals are conscious, that shall now concern us.

The Cumulative Argument justifies attributing consciousness to an animal when the attribution is underwritten by points 1 through 5 above. That is, we are justified in viewing certain animals as conscious if (1) doing so accords with the commonsense view of the world; (2) speaking of them in mentalistic terms is in harmony with ordinary language; (3) viewing them thus does not commit us to attributing an immaterial mind (soul) to them; (4) their behavior is consistent with the attribution of consciousness to them; and (5) both the commonsense beliefs about these animals and our ordinary way of talking about them and their behavior can be given a principled defense in terms of evolutionary theory. The members of *many* species of animals are reasonably viewed as conscious given these conditions, including all species of mammalian animals in particular. Certainly these are the animals concerning whom common sense and ordinary language are most at home in regarding as conscious; and it is also in the case of these animals that evolutionary theory provides the strongest case for the attribution of consciousness.

The explanation of this latter point is as follows: The point from which we must decide which animals are conscious is the case we know best, and it is human beings that provide the paradigm of conscious beings, setting skeptical challenges to our knowledge of "other minds" to one side. Now, from what we know about the relationship between human consciousness and the structure and function of the human nervous system, there is good reason to believe that our consciousness is intimately related to our physiology and anatomy. Damage to the spinal cord, for example, can make it impossible for us to receive sensations from affected parts of our bodies, and persons whose brains have been severely damaged may cease to give any evidence of consciousness at all. Given that our consciousness is intimately related to our physiology and anatomy, that mammalian animals are most like us physiologically and anatomically, and that consciousness has an adaptive value and has evolved from less complex forms of life —given all this, and, as a work in moral philosophy may do, setting to one side skeptical doubts about human consciousness, it is reasonable to conclude that mammalian animals are likewise conscious. This does not mean that only those animals most like us anatomically and physiologically can *possibly* be conscious. It means, rather, that these are the animals for whom the attribution of consciousness is most well founded.

Ought we to go further than this and attribute consciousness to nonmammalian animals? A systematic answer to this question is well beyond the scope of the present inquiry. All that can be noted here is a

point that has gone undiscussed previously, namely, that there is the possibility of conflict between what is hospitable to common sense and ordinary language, on the one hand, and the possible implications of evolutionary theory, on the other. Normally we neither think nor say, for example, that a snail clinging to the side of a tree "wants" to be there, or is "angry" when removed, or (though this is less clear) "feels pain" if squashed. Certainly we are even less tempted to say or think these things about animals less developed than a snail. Earlier, however, it was conceded that just because a given belief is part of the commonsense view of the world, and just because we speak a certain way, it does not follow that our belief is true. It may be that the snail and animals even less like us are conscious, despite our disinclination to say or think so. If they are, the theoretical grounds for thinking that they are must come from the same source that underpins the attribution of consciousness to mammalian animals. It must come from the systematic application of evolutionary theory, or some other theory, if a better theory can be found.[32] *Where one draws the line* regarding the presence of consciousness is no easy matter, but our honest uncertainty about this should not paralyze our judgment in all cases. We cannot say exactly how old or tall someone must be, to be old or tall, respectively, but it does not follow that we cannot recognize that some people are old or tall. Our ignorance about the shadowy borders of attributions of consciousness is no reason to withhold its attribution to humans *and* those animals most like us in the relevant respects. (The problem about where one draws the line surfaces in several places below, e.g., in 2.6, 8.5, 10.4).

Anthropomorphism and Human Chauvinism

Anthropomorphism, as previously explained (1.2), is the attribution to things not human of characteristics that apply only to humans. There can be no doubt that some talk about animals is anthropomorphic. If the widow Ames says that her cat has not been eating because he is concerned about Middle East tensions and the problem of storing nuclear waste, then the widow seems a bit excessive in her view of feline intellectual sophistication, to put the point as politely as possible. To acknowledge that *some* of the things that *some* people say or believe about animals is correctly gauged as anthropomorphic, however, is not to imply that this is true of the attribution of consciousness to some animals. The Cumulative Argument offers a set of relevant reasons for believing that consciousness is not restricted to human beings. It is not the attribution of consciousness to these animals that should raise our intellectual eye-

brows, but the refusal to make it. Donald R. Griffin, the animal physiologist whose views were cited earlier, again squarely addresses the point presently before us:

> The possibility that animals have mental experiences is often dismissed as anthropomorphic. . . . *This belief that mental experiences are a unique attribute of a single species is not only unparsimonious; it is conceited.* It seems more likely than not that mental experiences, like many other characteristics, are widespread.[33]

Of special interest is Griffin's use of the word *conceit*. It is not, he is saying, any defect in animals that bars us from recognizing that they have a mental life; the bar to this recognition is our own conceit, our presumed uniqueness, a supposed privileged status that, while it possibly could be accepted on religious grounds, can hardly be defended on scientific ones. What Griffin does is prick the balloon of our puffed-up species pride by reminding us that it is an expression of conceit that is unwarranted by the facts.

There is a neglected other side to the anthropomorphic coin. This is human chauvinism.[34] The anthropomorphic side reads: "It is anthropomorphic to attribute characteristics to nonhumans that belong *only* to humans." The human chauvinism side reads: "It is chauvinistic *not* to attribute characteristics to those nonhumans who have them and to persist in the conceit that only humans do." Human chauvinism, that is, like all other forms of chauvinism, involves a failure or refusal to recognize that those characteristics one finds most important or admirable in one's self, or in members of one's group, are also possessed by individuals other than one's self or the members of one's group, as when male chauvinists fail, or refuse, to see that they are not alone in possessing admirable qualities. With the argument of the present chapter serving as the backdrop, the conclusion we reach is that to deny consciousness or a mental life to mammalian animals is an expression of human chauvinism.

1.11 SUMMARY AND CONCLUSION

This chapter explored the question of animal awareness and sought to defend the reasonableness of viewing some animals as like us in being conscious. Descartes's famous denial of animal awareness was characterized (1.1) and various ways not to challenge his position were sketched (1.2). The central disagreement between Descartes and his critics was shown to concern the explanation of why animals behave as they do. Descartes believes that animal behavior, like that of any machine, can be

explained in purely mechanical terms (1.3). La Mettrie pushes Descartes's reasoning a step farther (1.4): human, not just animal, behavior can be described and explained without making any reference, explicit or implied, to a mind or consciousness. Descartes denies this, believing that the linguistic behavior of human beings shows that humans are unique among terrestrial creatures in being conscious (1.5). Against Descartes, it was argued that to make language-use the decisive test of consciousness not only opens the possibility that some animals (e.g., chimpanzees and gorillas) have a mental life, it also, and more fundamentally, relies on a demonstrably inadequate test of consciousness, since individuals could not learn to use a language if they were not conscious before, and thus independently of, their acquisition of this understanding.

One might, at this juncture, side with La Mettrie and argue that human beings, not just animals, are "thoughtless brutes." Though a theoretical possibility that warrants extended examination in some contexts, the present work is not one of them. Any recognizable moral theory assumes that human beings have a mental life (for example, that we have desires or goals, are satisfied or frustrated, feel emotions, and experience pleasure and pain). Without this assumption, there is nothing for a moral theory to be a theory of, so that to make this assumption here, without addressing the skeptical challenges others might raise (1.6), is not peculiar to a work that aspires to make the case for animal rights.

Evolutionary theory provides a reasonable theoretical option to Descartes's position (1.7), maintaining that consciousness is an evolved characteristic, with demonstrable adaptive value, something that is therefore reasonably viewed as being shared by the members of many species in addition to the members of the species *Homo sapiens*. When assessed as a theory (1.8), Descartes's position comes up short. If it is kept simple (i.e., if we suppose that there are just two basic kinds of terrestrial realities, bodies [both human and nonhuman] and human minds), Descartes's position fails to give a rational explanation of how the mind, which he regards as immaterial, can interact with the body, which he regards as material. If, in response to its failure to satisfy the requirement of explanatory power, the Cartesian occasionalist has recourse to the intervention of an omnipotent, omniscient deity to explain how the human mind and body appear to interact, then the theory loses all semblance of simplicity. In the contest of theories between Cartesianism and Darwinism, when it comes to the question of the nature of mind and which creatures have a mental life, Cartesianism loses.

Those who reject the Cartesian view in favor of a more catholic position regarding consciousness have several reasons, not just a single

one, to marshal in support of their position (1.9). Common sense and ordinary language favor the attribution of consciousness and a mental life to many animals; possession of consciousness is logically independent of questions about who or what has an immaterial (immortal) soul, so that the question involving consciousness can be approached independently of religious predispositions; animal behavior is consistent with viewing them as conscious; and evolutionary theory supports viewing those animals most like paradigmatic conscious beings (namely, human beings) as being like us in being conscious. To attribute conscious awareness to mammalian animals, leaving open the possibility that other kinds of animals might also be conscious (1.10), is not anthropomorphic nor, in Descartes's words, does this show that one is in the grip of a "prejudice to which we are accustomed from our earliest years." Just the reverse is true, in fact. Those who refuse to recognize the reasonableness of viewing many other animals, in addition to *Homo sapiens*, as having a mental life are the ones who are prejudiced, victims of human chauvinism—the conceit that we (humans) are *so* very special that we are the only conscious inhabitants on the face of the earth. The arguments and analysis of the present chapter sought to unmask this conceit.[35]