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Skeptical Influences on Hume's View of Animal Reasoning

RICHARD J. FRY

Abstract: Hume directly addresses animal reasoning and concludes that human causal reasoning must be similar to what he has identified in non-human animals. It would be easy to attribute influence on this issue to skeptical thinkers who influenced other parts of Hume's philosophy and also addressed non-human animal reasoning, that is, Bayle, Montaigne, and/or Sextus Empiricus. I argue that such claims of direct influence are improbable. First, Hume establishes conclusions about human reasoning on the basis of examining animals; the skeptics establish conclusions about animal reasoning on the basis of their similarities to humans. Second, Hume's conclusions in these sections differ in scope and function from those of these skeptics. Finally, Hume's evidence differs markedly from these skeptics'. Hume and these skeptics do make use of the same kind of comparison between humans and animals, but that comparison is also found in other Modern thinkers that Hume read: I show that it is present in Hobbes and Locke.

I. A Supposed Influence

In his writings on non-human animals, David Hume draws comparisons between non-human animals' cognitive capacities and the cognitive capacities of humans. That Hume draws such comparisons might seem to be evidence that Hume was influenced on this issue by epistemologically skeptical thinkers such as Sextus

Empiricus, Michel de Montaigne, and Pierre Bayle. This is enticing, as Hume was influenced by them on other issues and they too make comparisons between human and non-human animal reasoning. Comparing Hume's arguments in the sections on animal reasoning to these skeptics' arguments shows that there is scant evidence for such an attribution of direct, positive influence on those arguments by these authors.

Understanding how Hume's arguments about animal reasoning relate to these precursors helps us understand, primarily, the originality and inventiveness of Hume's arguments in the sections on animal reasoning. By showing that Hume is not merely imitating and extending the skeptics' arguments, we better understand the period's debates about animal reasoning, which span numerous key figures, and Hume's contribution to them. I show how Hume's view and arguments are *sui generis*, differing in important ways from both the skeptics and his British predecessors. The sections on animal reasoning are no afterthought or merely literary endeavor, linking Hume up to an ongoing skeptical tradition. They are a real and substantive contribution to an ongoing conversation about the nature and status of animals.

My focus here is on the positive influence that the skeptics' arguments and methods are supposed to have had on Hume's arguments and conclusions, specifically about animal cognition, that is, animal thought and reasoning.¹

Several authors have identified similarities between Hume's writings on animals and the texts of one or more of these skeptics and taken these similarities as proof of direct, positive influence on this issue. One such author is Norman Kemp Smith, who identifies non-human animal reasoning as one of five main points on which Bayle influenced Hume (325). Hume clearly read Bayle, and Kemp Smith claims that evaluation of Bayle's writing in the *Dictionary* and Hume's in the *Treatise* and first *Enquiry* shows that Hume takes up Bayle's methods and positions on the issue of animal reasoning.²

P. J. E. Kail also argues that Hume is part of the skeptical tradition on this issue but identifies Montaigne as the most salient direct influence. Kail sees the skeptical tradition as consisting in two sorts of claims: a descriptive claim that human cognition should be understood in terms of non-human animal cognition and an evaluative claim that this means that human nature is thus "mean" or base as a result. Kail concludes that "Hume at on[c]e participates in this [skeptical] tradition and transforms it, signalling his alignment with the descriptive claim but rejecting the evaluative view of human nature" ("Sceptical Beast," 220). On Kail's view, Hume agrees with the skeptics about how human and non-human animal cognition are related but rejects the skeptics' view that human nature is thus base. The descriptive claims about comparative cognition, Kail thinks, show evidence of influence by the skeptics. Discussing the sections on reasoning in the *Treatise* and first *Enquiry*, Kail finds that

Hume deploys the sceptical trope that seeks to undermine the differences between animals and humans on reasoning used . . . from Sextus through Montaigne, Charron and others by arguing against particular inflationary accounts of the nature of human inference and modelling our practice on that which is taken to be operative in the beasts. ("Sceptical Beast," 226)

Kail takes it that both Hume and the skeptics start with understandings of animal cognition and work to conclusions about human cognition. On his view, this is evidence of their influence on Hume.³

Other authors identify different places in the skeptical tradition as the source of the influence. Floridi, for example, locates it primarily in Sextus. Muckler locates it primarily in both Bayle and Montaigne. What is clear is that the skeptical tradition—or at least some part of it—is widely believed to have had a strong, positive influence on Hume's views of how intimately human and non-human animal reasoning are related.⁴

Hume's arguments in *Treatise* 1.3.16 and *Enquiry* 9 provide little evidence for this line of thought that takes Hume to borrow from Bayle, Montaigne, or Sextus Empiricus on the topic of animal reasoning. First, Hume's arguments in the sections on animal reasoning do not rely on substantive presuppositions about human reasoning, but the skeptics' arguments do. Second, Hume's conclusions in these sections have a different scope and serve a function that is different from the one served by the skeptics' conclusions. Finally, the evidence that Hume offers is far less fantastical than the stories presented by the skeptics. Hume and these skeptics all make comparisons of humans and non-human animals, but Hobbes and Locke—two non-skeptical thinkers that Hume read—deploy this comparison as well. Hume's sections on animal reasoning provide scant evidence for the claim of direct, positive influence by these skeptics on Hume on the issue of animal reasoning.⁵

II. Sextus Empiricus

Sextus Empiricus sits at the head of the chain of skeptical influence. Sextus directly influences Montaigne and Bayle in both their approach and in their conclusions. Hume also read Sextus, and, as noted above, some see Sextus as being the key skeptical influence on Hume's view of animal reasoning.⁶ Hume, for one, deploys an example found in Sextus's sections on animals: the famous eye-pressing, double-vision experiment that Hume makes use of (T 1.4.2.45; SBN 210, EHU 12.6; SBN 151) is found within Sextus's discussion of animals (PH 1.14.47).⁷ This suggests that Hume read and was influenced by Sextus's discussion of animals.⁸ In this section, I outline Sextus's arguments concerning non-human animal reasoning. I do so in order to establish their general shape, such that we might compare them

to the other skeptics (which they closely mirror) and to Hume (from which they differ widely).⁹

Early in *Outlines of Pyrrhonism*, Sextus Empiricus details the ten modes of Aenesidemian skepticism. Of these ten modes, the first trades crucially on the abilities of animals. Sextus compares humans and non-human animals with respect to three points. First, he argues that non-human animals' experiences (that is the "appearances" they receive from the world) are different from human experiences of the world, and that this is due to differences in how animals are generated and how they (and, in particular, their sense-organs) are constituted (PH 1.14.40–59). Sextus concludes that, "[i]f the same objects appear dissimilar depending on the variation among animals, then we shall be able to say what the existing objects are like as observed by us, but as to what they are like in their nature we shall suspend judgement" (PH 1.14.59).

Sextus goes on to argue that appearances received by humans cannot be preferred to those received by other animals, for such a preference would require us to rule in a case to which we are a party (PH 1.14.60–1).¹⁰ Sextus then considers a single animal as case study, "the dog . . . which is thought to be the lowest animal of all" (PH 1.14.63). He finds that the dog is possessed of thought—what he calls "internal reasoning"—and speech, that is, "external reasoning."¹¹ So, while it should not be thought that speech is required for good reasoning (PH 1.14.73), it could be said with good likelihood that the so-called irrational animals share in expressed reasoning too (PH 1.14.74).¹² Sextus concludes, "if they fall short of humans neither in the accuracy of their senses nor in internal reasoning nor . . . in expressed reasoning, they will be no less convincing with respect of appearances than we are" (PH 1.14.76).

It is this second line of argument that most closely mirrors the other relevant skeptics. Sextus considers the behavior of different dogs at different times, showing their behavior is consistent with rational thought. From the dog's ability to pursue goods and excellences relevant to its own kind, Sextus concludes that it reasons. Sextus gives a vivid example with Chrysippus's dog: the dog behaves in such a way as to illustrate that it reasons that if the game that it is tracking did not escape down either of the first two paths, it must have followed the third (PH 1.14.69). This dog's ability to engage in disjunctive syllogism is direct evidence, on Sextus's view, that animals are just as capable of reasoning as humans are.

Sextus has reached this conclusion that non-human animals reason by seeing how closely their behavior approximates human behavior. That is, Sextus seems to reason by analogy that, because non-human animals evince the same behaviors that humans evince when humans are reasoning, non-human animals must be reasoning as well. Sextus's arguments employ substantive presuppositions about human reasoning: for example, he takes for granted that humans engage in disjunctive syllogism. If he did not, then the argument about Chrysippus's dog

would make no sense. Sextus's arguments about animal reasoning thus start with substantive presuppositions about human reasoning abilities (that is, what humans are capable of) and show those same abilities to be present in non-human animals.

Once Sextus has established that animals reason in the manner of humans, he immediately goes on to draw an explicitly skeptical conclusion. He reaches this conclusion directly on the basis of his discussion of non-human animal reasoning: Sextus combines the claim that non-human animals reason with his earlier result that their experiences are likely different from ours. Doing so, he claims, should lead us to suspend judgement about how things really are and to speak only of how things appear to us (PH 1.14.78). The conclusion of the arguments that Sextus deploys here is not given in terms of non-human animal reason. Rather, the claims about animal reasoning here lead directly into clearly, explicitly skeptical arguments that are meant to foment the suspension of judgement.

III. Montaigne

Montaigne's arguments share many features with Sextus's. Like Sextus, Montaigne makes substantive presuppositions about human reasoning and argues to conclusions about animal reasoning. Like Sextus, Montaigne also directly draws skeptical conclusions from this discussion. Here I establish his arguments' general features in order to show their similarity to the other skeptics' arguments and their contrast with Hume's.¹³

In the portion of *Apology for Raymond Sebond* concerned with animals, Montaigne's goal is to illustrate how human vanity leads to our supposition that we are superior to other animals. This vanity leads humans to compare themselves to other animals, and it is through this comparison "that he equates himself with God, that he attributes divine attributes to himself, picks himself out and separates himself from the crowd of other creatures" (15).¹⁴

To illustrate that this is mere vanity, Montaigne will determine what differences and similarities there actually are between humans and non-human animals, seeking to find "by what comparison between them and us does he infer the stupidity which he attributes to them?" (15). That is, Montaigne will compare the two groups to determine if this judgement of human superiority is warranted. Montaigne focuses on the cognitive capacities of humans because these are thought to make up for the human lack of other natural gifts like claws (18–20). He draws two sorts of conclusions from comparing the two groups: first, humans and non-human animals display largely the same cognitive capacities. Second, where they differ, it is often human traits that are less good or advantageous.

Individual cases provide fodder for Montaigne's comparisons. For example, Montaigne says:

We can also say that elephants participate to a certain extent in religion, insofar as, after certain rituals of bathing and purification, we see them stand for a long time in meditation and contemplation at certain hours of the day, without instruction or precept, lifting their trunks like arms and holding their eyes fixed toward the rising sun. (30)

Montaigne supplements this with examples of ants showing reverence for their dead, and concludes that, contrary to the vain human supposition, humans are not unique in having religion.¹⁵ Montaigne treats a number of capacities similarly, drawing testimony and examples from both antiquity and far-flung locales to establish the behavior in question, then concludes that this behavior makes it evident that non-human animals have the same cognitive capacities that would be producing that behavior in humans.¹⁶ One cannot repent or regret, for instance, unless one knows one has done wrong, and so the specific capacities that Montaigne addresses provide some evidence that non-human animals have sophisticated cognitive capacities like those we find in humans.

Montaigne also addresses general-purpose reasoning, that is, reasoning that is not tied to, or resulting from, any specific task or purpose. Here, too, Montaigne appeals to examples to make his case. For instance, he reports that when Thracians want to know if it is safe to cross a frozen river, they first send a fox across. The fox listens carefully to the ice as it moves and will not tread where it can hear running water underneath. Montaigne attributes this argument to the fox: “What makes a noise is moving; what moves is not frozen; what is not frozen is liquid; and what is liquid gives way under a weight” (23).

This clever bit of reasoning is enabled by the fox’s superior senses. Similarly, the spider’s maintenance of its web leads Montaigne to conclude that non-human animals have “deliberation and thought and powers of inference” (18). Other examples prove that animals know, judge, and foresee (17–18). That elephants extract projectiles from themselves and others, for instance, shows that animals have medical capabilities that amount to, on Montaigne’s view, “science and knowledge” (25).

Chrysippus’s dog reappears in Montaigne’s arguments as well, and again its behavior is taken as evidence that the dog is walking explicitly through a disjunctive syllogism (25–26). Of this dog, Montaigne says that it uses “purely dialectical action,” and that “this use of divided and conjoined propositions and of adequate enumeration of parts” is as useful when learned from nature as it would be if it were learned from a logic text (26). Further, when considering the accommodations a guide-dog makes for its blind master, Montaigne wonders: “Can all this be understood without ratiocination and without thought?” His implicit answer is clear: no, it cannot.

Montaigne is arguing that we should think that non-human animals have the same kinds of rational capacities that we humans have. Of reasoning, generally, Montaigne says

To return to my subject: I say, therefore, that there is no evident reason to consider that beasts perform through natural instinct and obligation the same operations that we perform through our choice and industry. From like effects we must infer like faculties, and confess in consequence that the same intelligence, the same way we have of working, is also that of the animals. (22)

Montaigne appeals to the similarity of animal behavior to human behavior to draw his conclusion that non-human animals have the same underlying cognitive capacities that are evident in humans. Montaigne says that we should judge that non-human animals are rational and intelligent because they demonstrate through their actions the same underlying ways of thinking that we observe in ourselves and other human beings.

It follows from this argument that, if the sole virtue of humankind above the animals was to be our intelligence, humans are not special: humans are not in fact superior to non-human animals by virtue of our intellect.¹⁷ Any claim of superiority derives, Montaigne says, from the unique human ability to reflect and imagine. But this capacity is in fact the root of human vanity and character flaws (22), making it a net negative.

Montaigne's discussion of animals mirrors Sextus's: the capacities that were supposed to grant us superior status are in fact shared through the whole of the animal kingdom. Both argue for a revision of our view of animals—not our view of what capacities humans have—and both do so by starting from substantive presuppositions about what human reasoning is like. The result that non-human animals share our cognitive capacities is deployed as a key part of Montaigne's arguments that we have a false picture of the world and our place in it, that is, that we are vain and arrogant and that this vanity and arrogance lead us astray. Pyrrhonic suspension of judgement is thus the appropriate course of action. Just as it was for Sextus, these skeptical conclusions follow immediately from the discussion of non-human animals for Montaigne.

IV. Bayle

Bayle's arguments share many features with the arguments from Sextus and Montaigne. Bayle argues from features of human capabilities to claims about non-human animal capabilities, just like Sextus and Montaigne. Like Sextus and Montaigne, Bayle also directly draws skeptical conclusions from this discussion.

Here I give a general account of Bayle's arguments to illustrate their similarity to the other skeptics' arguments and their differences from Hume's.¹⁸

Bayle's sections on animals are concerned to argue that no extant philosophical view of non-human animals is able to satisfy conditions that straightforwardly result from common theological and natural-scientific commitments. In part, Bayle shows this by illustrating that the Cartesian and Scholastic views on animals are unstable. This is because each theory, when it provides evidence and arguments strong enough to bring the other into question, undermines its own core claims.¹⁹ From this discussion, Bayle draws three conditions that a view on animals must meet in order to be acceptable ("Rorarius," Remark G, 909).²⁰ Those conditions are that a view must (1) hold that non-human animal souls are mortal, (2) adduce a "specific difference" between the souls of humans and non-human animals, and (3) explain "the surprising skill of bees, dogs, apes and elephants," that is, how non-human animals could produce the cognitively sophisticated behavior we observe from them (Remark G, 909).²¹ Bayle aims to show that no extant view satisfies all three criteria.²²

Here I will focus on the arguments Bayle provides about the third criterion, which regards animal reasoning. Bayle argues against seeing any difference in cognitive capacities between humans and non-human animals. Bayle concludes from this that behavioral evidence cannot adjudicate between explanations of human and non-human animal behavior that suppose immaterial souls and those that suppose corporeal ones.

To show that we should be suspicious of attempts to put a difference in capacities between humans and non-human animals, Bayle appeals to examples, both general and specific. For instance, to show that non-human animals must have sophisticated cognitive abilities, Bayle asks us to consider "a dog that hath been beaten for falling foul upon a dish of meat, touches it no more when he sees his master threatenning him with a stick" (Remark B, 901).

Even this seemingly simple action requires several sophisticated cognitive capacities in Bayle's estimation, including the capacity to reflect, remember, compare ideas, and draw conclusions (Remark B, 901). Bayle also approvingly relates stories given by Rorarius to show that non-human animals display the capacities for "equity and gratitude." This is displayed by cases where "horses that have refused to leap their mothers; or if having done it unwittingly, being deceived by the artifice of their groom, after knowing what they had done, have thrown themselves down a precipice" (Remark B, 901).

Similar cases have the "leaped" mare extracting vengeance on the groom before her suicide, and in this same passage, Bayle also notes that dogs often seek vengeance on their master's killer. This shows the capacities requisite for guilt and vengeance exist in non-human animals. Elsewhere, Bayle approvingly quotes

Pliny's attribution of the understanding of oaths and promises—and religion more generally—to elephants (Remark D, 904).

Bayle also lists “cunning, precaution, docility, and knowledge of things to come” (Remark F, 907) as capacities that must be accounted for, along with another reference to the dog who avoids his master's food for fear of a beating. This time, Bayle uses the example to show that non-human animals have the power of “acting or not acting,” which is all that could constitute free-will, on Bayle's view (Remark F, 908). Bayle gives examples of animals being punished—lions crucified, wolves branded, or killed and hung, displayed for others to see—in order to argue that non-human animals are capable of choosing to act or refrain from acting.²³

In addition to these arguments from example, which are meant to convince us that animals share our cognitive capacities and to do so by appeal to direct observations of their behavior, Bayle also gives arguments that draw on theoretical presuppositions. For instance, Bayle argues at length that it is less difficult for a sensitive being to become rational and/or reflective than it would be for an insensate being to become sensate (Remark F, 907).

Through both sorts of arguments, Bayle means to show that there is not a simple division of cognitive capacities between humans and non-human animals. This bears on the underlying causes that we would suppose to account for those capacities: because the behavioral similarity is so striking, Bayle determines, we should be suspicious of attempts to use different explanatory principles to explain human versus non-human animal cognitive capacities. Here is Bayle, arguing in his own voice:

Must we not suppose, That the soul of a dog or of an ape is not of so coarse a nature as that of an ox? In one word, if nothing but a spiritual soul can produce the actions of a dull witted clown; I will maintain against you, That nothing but a spiritual soul can produce the actions of an ape; and if you say that a corporeal principle is able to produce whatever is performed by apes; I will maintain against you, that a material principle may be the cause of whatever is performed by stupid men, and that provided matter be subtilized, and disintangled from all the gross particles, phlegms, &c. it may be the cause of whatever the most understanding man can do. (Remark F, 907)

In this passage, Bayle takes it that if a materialist explanatory principle is sufficient to explain ape behavior, it could very well be seconded into service to explain the behavior of less intelligent humans. Conversely, if his opponent claims that only a spiritual soul can explain “the actions of a dull witted clown,” then a similarly sophisticated explanatory principle will be required to explain the actions of apes. Bayle refuses to draw a positive conclusion about which of these two paths

is appropriate, as explaining via corporeal or immaterial principle both seem to create intractable problems. Bayle instead draws a more modest conclusion: similar explanatory principles must be used to account for the similar capacities in both humans and non-human animals. From this implicit, positive claim, Bayle reaches for his negative, skeptical claim, that appeals to immortal souls to explain human behavior as contradistinguished from animal behavior will ultimately appear ad hoc if grounded in behavioral evidence.

Note the direct similarity to Montaigne and Sextus: all three make use of the principle that similar effects require similar explanations; Montaigne and Bayle do so explicitly. They wed this to substantive presuppositions about the cognitive capacities of humans and to behavioral analogies between humans and non-human animals that they have argued for to conclude that we should attribute to non-human animals the capacities that we already attribute to humans. From this point, they each immediately throw doubt on the assumption that humans have a special place in the world. Sextus questions direct human access to the natures of things in themselves. Montaigne argues against human vanity. Bayle shows that the assertion that humans (alone) have immortal souls cannot be supported by reason or empirical observation.²⁴

Despite this similarity to the other skeptics, Bayle's original contributions to the debate are twofold. First, he organizes and systematizes Cartesian criticisms of the Scholastics and vice versa. Second, his three criteria for the acceptability of any theory of animals, noted earlier, are original to him. While the systemization of criticisms is backwards-looking, the three criteria provide a path forward, a way of examining any theory against all the implicit constraints of the time. As such, they are an important contribution, utterly distinct from what Bayle shares with the skeptical tradition.

V. Hume and Bayle, Specifically

In this section, I argue for a rejection of the claim that Bayle has any specific influence on Hume on animal reasoning over and above the skeptical tradition of which he is a part. As noted above, Kemp Smith claims that Bayle had a unique, obvious, positive influence on Hume's positions and arguments regarding animal reasoning. Unlike for other points of influence that he notes, Kemp Smith does not provide textual evidence to support this claim. More problematically for Kemp Smith, where Bayle and Montaigne agree, as Kemp Smith acknowledges, "we cannot be sure that it was not by the direct route" that these ideas reached Hume (325). To identify clear and direct influence by Bayle specifically, then, will require Bayle's influence to result from features of Bayle's view not shared with Montaigne (or Sextus).

Bayle's unique contributions to thought about non-human animals consist, first, in his organization of the criticisms of the Scholastics and Cartesians against each other, and, second, in his three criteria for any view of animals. Hume never draws on Bayle's collected arguments against the Cartesian or Scholastic positions. Indeed, he does not even mention the positions. So Bayle's influence is not in evidence from the first of his two original contributions.

Hume's writing does display the same concern Bayle shows in the third of his criteria to explain the similarities between human and non-human animal behavior by appeal to similar explanatory principles. But this concern appears in Montaigne, too, as well as in Sextus, and elsewhere (as we will see). Thus it cannot ground a claim of specific influence by Bayle. Bayle's other two criteria explicitly require a view to make certain kinds of metaphysical assertions about non-human animal souls derived from Christian doctrine, for example, about their immortality. (It is these two criteria that are not found in the larger skeptical tradition.) Hume makes no such assertions about non-human animal souls. Since Hume addresses neither the collated criticisms nor issues related to animal souls, Bayle's original contributions show no evident influence on Hume's writing about non-human animals.

The question remains to what extent the ways of thinking that are shared between these three skeptics can be said to have influenced Hume's arguments regarding animal reasoning. In the balance of this paper, I argue that there is little evidence for an attribution of direct influence on Hume's arguments about animal reasoning.

VI. Hume

In *Treatise* 1.3.16 and *Enquiry Concerning Human Understanding* 9, Hume discusses animal reasoning directly. In these sections, Hume uses analogies between human and non-human animal behavior to draw a specific conclusion about how human minds draw causal inferences.²⁵ Namely, Hume concludes that humans, on the basis of past exposure, come to believe in an effect when they have an impression of prior conditions constituting the cause (or vice versa). In these sections, Hume takes the points he makes about animal reasoning to provide "a strong confirmation, or rather an invincible proof of my system" (T 1.3.16.8; SBN 178), that is, of the story of human reasoning presented earlier in Book 1. Showing that Hume takes the arguments regarding animal reasoning to support his claims about human causal inference is the goal of this section.

In both sections, Hume argues by analogy. *Enquiry* 9 asserts that "All our reasonings concerning matter of fact are founded on a species of analogy" (EHU 9.1; SBN 104), and the *Treatise* asserts that "[w]hen any hypothesis, therefore, is advanc'd to explain a mental operation, which is common to men and beasts, we

must apply the same hypothesis to both; and as every true hypothesis will abide this trial, so I may venture to affirm, that no false one will ever be able to endure it (T 1.3.16.3; SBN 177). It is this trial which Hume undertakes in these sections and provides the “invincible proof” of his system. He will “make trial” of the “hypothesis, by which, we have, in the foregoing discourse, endeavoured to account for all experimental reasonings; and it is hoped, that this new point of view will serve to confirm all our former observations” (EHU 9.1; SBN 104–105).

In both sections, Hume proceeds to show that non-human animals learn, and that in particular, they learn conventional signs and signals. He illustrates this with generic cases:

- (1) “A dog, that avoids fire and precipices, that shuns strangers, and caresses his master” (T 1.3.16.5; SBN 177).
- (2) Dogs which foresee their punishment from their master’s comportment (T 1.3.16.6; SBN 178, EHU 9.3; SBN 105).
- (3) Further, if you “make a beating follow upon one sign or motion for some time, and afterwards upon another; and he will successively draw different conclusions, according to his most recent experience” (T 1.3.16.7; SBN 178).
- (4) “From a certain sensation affecting his smell, he judges his game not to be far distant from him” (T 1.3.16.6; SBN 178).
- (5) “A horse, that has been accustomed to the field, becomes acquainted with the proper height, which he can leap, and will never attempt what exceeds his force and ability” (EHU 9.2; SBN 105).
- (6) “An old greyhound will trust the more fatiguing part of the chace to the younger, and will place himself so as to meet the hare in her doubles” (EHU 9.2; SBN 105).
- (7) Regarding the fact that dogs learn their names: “Is it not even experience, which makes him answer to his name, and infer, from such an arbitrary sound, that you mean him rather than any of his fellows, and intend to call him, when you pronounce it in a certain manner, and with a certain tone and accent?” (EHU 9.3; SBN 105).

These are instances of learning. Hume infers that the best explanation for expectation-behavior in non-human animals is that their minds bring forward the idea of the future state and react appropriately. This movement of the mind constitutes causal inference, and therefore reasoning from cause to effect. Thus, non-human animals reason.

Hume goes on to assert that non-human animals do not possess “philosophic genius.” Due to this lack of “philosophic genius,” he takes it, they are not able to

produce any arguments that would move their minds from the impression of a cause to the idea of its effect or vice versa (EHU 9.5; SBN 106). That is, Hume claims that non-human animals are unable to produce whatever arguments would induce in them the belief in some other real existent on the basis of a present impression. Hume does not specify what he means by “philosophic genius,” but he does say that the arguments involved “surely lie too abstruse for the observation of such imperfect understandings” (EHU 9.5; SBN 106).²⁶

One might object, thinking that Hume’s assertion that animals do not use arguments to move their minds between the idea of a cause and its effect is ironic understatement. This is an enticing move, given Hume’s prior assertions in *Treatise* 1.3.6 (and section 4 of the first *Enquiry*) that such arguments are not possible. However, Hume does not appeal to that earlier result in the sections on animal reasoning; no reference to the impossibility of such arguments is made in *Treatise* 1.3.16 or EHU 9. Perhaps Hume does not draw on these earlier conclusions because Hume goes on within the sections on animal reasoning to draw conclusions about human causal reasoning; Hume claims early on in the sections on animal reasoning that the conclusions reached there are meant to reinforce the conclusions reached earlier. Since this is the case, this would make appealing to a claim about human cognition (that it is not capable of the relevant sorts of arguments) problematic: appealing to the key argumentative move of those sections whose conclusions are meant to be reinforced within the argument that is meant to be reinforcing those conclusions would seem to make the argument, ultimately, circular. At the very least, it would make *both* sets of arguments—the arguments of *Treatise* 1.3.6/EHU 4 and the arguments of *Treatise* 1.3.16/EHU 9—depend on the one earlier claim that such arguments are impossible.

That Hume does not appeal to this claim—or even mention it—suggests that the arguments in the sections on animal reasoning are meant to provide a new foundation for his claims about how causal reasoning works. That is, it suggests he seeks to show from independent grounds how causal reasoning must function in the sections on animal reasoning. It would seem that Hume allows the possibility of such arguments here because he is confident that his reader will agree that non-human animals do not make such moves by argument. This is all he needs to secure for his argument here to move forward, and it does not introduce any problematic dependency.

After asserting that animals are not smart enough to make the mental move between cause and effect by way of an argument, Hume reasons that, if the move is not made by argument, it must be made by an association between the idea of the cause and the idea of the effect. This association, he takes it, is formed as a result of past experience. In the *Enquiry*, Hume says: “Animals, therefore, are not guided in these inferences by reasoning. . . . It is custom alone, which engages animals, from every object, that strikes their senses, to infer its usual attendant,

and carries their imagination, from the appearance of the one, to conceive the other” (EHU 9.5; SBN 106).²⁷

Non-human animal minds are moved on the basis of past experience to produce expectations for the future. Interleaved with this, Hume illustrates that this must be true of humans, too. Because most humans do not employ the “philosophic genius” Hume mentioned earlier, he concludes that they too are not guided by reasoning: “Neither are children: Neither are the generality of mankind, in their ordinary actions and conclusions: Neither are philosophers themselves, who, in all the active parts of life, are, in the main, the same with the vulgar, and are governed by the same maxims” (EHU 9.5; SBN 106).²⁸ Though it is difficult to ascertain how precisely the human mind works, the clarity we have in the case of non-human animals allows us to conclude that humans must function in the same way:

Were this doubtful with regard to men, it seems to admit of no question with regard to the brute creation; and the conclusion being once firmly established in the one, we have a strong presumption, from all the rules of analogy, that it ought to be universally admitted, without any exception or reserve. (EHU 9.5; SBN 106)

The *Treatise* draws the same conclusion: “All this was sufficiently evident with respect to man. But with respect to beasts there cannot be the least suspicion of mistake; which must be own’d to be a strong confirmation, or rather an invincible proof of my system” (T 1.3.16.8; SBN 178).

The arguments in these sections provide an unimpeachable argument by analogy, on Hume’s estimation, for the conclusion that humans must be moved to believe in an effect given the impression of a cause (and vice versa) simply as a result of the association of the ideas on the basis of past experience. Hume restricts his conclusions in these sections to claims about human causal reasoning, and argues for those conclusions on the basis of our similarity to animals, not the other way around.²⁹ These conclusions are not, in themselves, skeptical: they do not enjoin us to limit the inferences we draw, nor conclude that we lack crucial faculties for knowing about the world. The conclusions given within the discussion of animal reasoning itself are instead psychological: they purport to tell us about how the human mind works.³⁰

VII. Hume and the Skeptical Tradition

There are four key reasons to think it improbable that Hume was directly, positively influenced by the skeptics in his arguments about animal reasoning. First, Hume’s arguments depend on presuppositions about animals, not humans, thus going in the opposite direction of the skeptics’ arguments. Second, Hume’s conclusions

in the sections on animal reasoning differ from the skeptics' both with respect to their scope and function. Third, where Hume's arguments and conclusions overlap with the skeptics, they also overlap with other, non-skeptical thinkers that influenced Hume. Finally, Hume's arguments rest on a different kind of evidence than the skeptics' arguments.

VII.A. Direction of Argumentation

The claim that Hume's arguments regarding non-human animal reasoning are subject to direct, positive influence from Sextus, Montaigne, and Bayle is made less probable once we see that the skeptics' arguments depend substantially on presuppositions about human reasoning; Hume's arguments depend on no such presuppositions. In their psychological argumentation, each of these skeptics argues that we should attribute the cognitive capacities we already believe that humans have to non-human animals, and that we should do so on the basis of their similarities to humans. Montaigne even makes this movement from our knowledge of our own reasoning to conclusions about animals explicit, claiming that we must be moved to conclude that "the same intelligence, the same way we have of working, is also that of the animals" (22). Hume's arguments, by contrast, do not engage substantive presuppositions about human cognition: indeed, it would appear that the starting points of Hume's arguments in the sections on animal reasoning are meant to float free of substantive considerations of the character of human cognitive capabilities (in order to draw conclusions about those capabilities).

So, insofar as Sextus, Montaigne, and Bayle start from substantive presuppositions about what humans are capable of, and draw conclusions about what non-human animals are capable of, and Hume draws his psychological conclusions about what capabilities humans have, the psychological argumentation flows in opposite directions. This aspect of Hume's discussion does not appear to be subject to the kind of direct, positive influence that would show Hume to be reproducing the lines of thought found in these skeptics.³¹

VII.B. Scope and Function of Conclusions

Hume's arguments also differ from those given by Sextus, Montaigne, and Bayle by virtue of what the authors mean to show through their discussion of animals. The conclusions that Hume draws in the sections on animal reasoning are themselves limited and psychological, and are meant to reinforce earlier limited, psychological claims about how humans make certain sorts of cognitive moves. These three skeptics, by contrast, draw conclusions about all of animal cognition and move to immediately draw epistemological consequences.

To the extent that Hume is skeptical, the conclusions that Hume draws on the basis of the arguments found in the sections on non-human animal reasoning are used to support that skepticism—whatever its particular contours—indirectly. Within the discussion of non-human animal reasoning, Hume does not draw explicit conclusions about the usefulness, completeness, or truth-tracking powers of human cognition. The conclusions he does draw must then filter into any larger project that Hume undertakes in the *Treatise* and the first *Enquiry* by way of Hume's larger, positive human psychology. Hume's immediate target in discussing non-human animal reasoning is psychology (even if his aim is larger in those works). For the skeptics, the fact that animals reason—and that they reason like humans do—is *immediate* grounds for skepticism, whether it be about our sensory apparatus and its contact with the world (Sextus), our specialness (Montaigne), or the immortality of our souls (Bayle).

Hume does not explicitly draw skeptical conclusions within the sections on animal reasoning, nor does he appeal to these sections when drawing *any* skeptical conclusions. But Sextus, Montaigne, and Bayle all draw skeptical conclusions *within their very discussions of animals and by explicitly appealing to these claims about animals*. For this reason, it is, at the very least, secure to say that Hume's discussion of animals is meant to relate to his larger argumentative project in a radically different way. This casts further doubt on the claim of obvious positive influence for those figures.³²

Hume's conclusions also differ in their scope. Hume's conclusions from the discussion of non-human animal reasoning are limited: they do not speak to the totality of human cognition, but rather more narrowly about human causal reasoning. The sections on animal reasoning draw no more of a comparison between humans and non-human animals than is necessary for Hume to make his argument by analogy about the mental mechanisms involved in causal reasoning in humans. Hume does not claim that human capabilities do not exceed non-human animal capabilities in any way, nor that, on the whole, they are the same as animal capabilities, or anything similar. He merely makes a relatively narrow claim about one way of moving between ideas (that is, causal reasoning).

These three skeptics, by contrast, draw conclusions about all cognition, arguing that non-human animal mental capacities are the same as human mental capacities. Montaigne is explicit that this is his goal: to show that there is nothing unique in human cognition.³³ The other skeptics do so implicitly but clearly as well. The traditional skeptical path involves drawing totalizing conclusions about cognition via the analogy between humans and non-human animals. These totalizing conclusions are absent in Hume, and this gives reason to doubt that Hume's sections on animal reasoning are subject to direct, positive influence by the skeptics.³⁴

VII.C. What is Shared is Shared Widely

Hume and these skeptics do share an attempt to identify similarities between human and non-human animal cognition by examining behavioral analogies between those two groups. Both Hume and these skeptics see that similar behavioral effects call for attribution of similar cognitive causes. Montaigne, Bayle, and Hume all explicitly appeal to this principle.

That this mode of reasoning is shared is not enough to ground an attribution of specific influence for these skeptical thinkers. That is because the underlying mode of thinking is shared widely amongst non-skeptical philosophers in the period; it is even found in some that influenced Hume. For instance, it is found in Hobbes and Locke, as this section argues.³⁵ That many figures in the period draw on the analogy between humans and animals to reach psychological conclusions is the third reason to reject claims of special influence by these three skeptics.

VII.C.1. Hobbes

Hobbes clearly shares Hume's commitment to explaining similar behavior by appeal to similar cognitive causes. In *Leviathan*, Hobbes begins by explaining human cognition.³⁶ While doing so, though, he identifies, justifies, and explains human cognition's similarities to and differences from non-human animal cognition. This illustrates his commitment to using similar explanatory principles where we see similar effects.

More particularly, Hobbes attributes nearly all of the faculties that he identifies in human cognition to animals as well. He starts by attributing sense and imagination to them.³⁷ These are the foundation of cognition on Hobbes's view: sense provides ideas and the imagination works with them. Attributing them to animals shows that Hobbes thinks the basic mechanics of cognition will be the same as they are in humans.

Hobbes goes well beyond identifying basic similarities, though. It is obvious, on Hobbes's estimation, that non-human animals are capable of understanding the will of others as it is expressed via "words or other voluntary signs." They are capable of rudimentary communication, and inasmuch as that, they must possess the underlying faculty, that of understanding.³⁸ Animals also follow connections between ideas, displaying the faculty of consequence (or train of thought).³⁹

According to Hobbes, non-human animals do not display the uniquely human ability to understand "the conceptions and thoughts" expressed by others "by the sequel and contexture of the names of things into affirmations, negations, and other forms of speech" (ii, 11). That is, they lack the ability to understand linguistic meaning or produce speech itself, and this lack of speech makes it, on Hobbes's view, that non-human animals are incapable of reason and science. (More on this below.)

Hobbes does make clear, though, that animals learn what many voluntary signals indicate, saying that “a dog by custom will understand the call or the rating of his master; and so will many other beasts” (ii, 11). That is, Hobbes thinks that, due to past exposure to the call and the subsequent events and comportment of the human making the call, the dog (or other animal) will learn to expect a certain desire from that human. Hobbes’s assertions here closely mirrors Hume’s assertions about dogs’ expectations of punishment, and his assertion that this results only from past experience (T 1.3.16.6; SBN 178, EHU 9.3; SBN 105), as well as his discussion of how dogs are able to learn their names and the difference between the use of their name to call them, on the one hand, and merely being mentioned on the other (EHU 9.3; SBN 105).

Hume’s assertions that humans and non-human animals share the ability to come to the idea of the effect from the idea of the cause (or vice versa) matches neatly Hobbes’s assertion humans and non-human animals expect things on the basis of past experience. That is, both thinkers explicitly claim that human and non-human animal minds share the capability of bringing to mind other ideas that are closely connected to whatever idea or impression they currently have. For both thinkers, the ideas brought forward in this way are brought to mind on the basis of past experience in both humans and animals.

Hobbes continues on, noting as obvious that non-human animals are not just able to follow connections between ideas but are also able to focus their thoughts on bringing about a pleasurable state (or avoiding a painful one). This is why Hobbes attributes to them prudence, that is, the ability to pursue particular courses of action because they have, in the past, led to good outcomes. Though this is a sophisticated cognitive ability, “[n]evertheless, it is not prudence that distinguisheth man from beast. There be beasts that at a year old observe more, and pursue that which is for their good more prudently, than a child can do at ten” (iii, 14).

That is, non-human animals display their cognitive capacity to follow trains of thought and associate the good (or bad) outcomes with the train of ideas through their behavior. As noted above, this mirrors Hume’s assertion that animals can be, for example, apprehensive, which suggests they are foreseeing (and endeavoring to avoid) a painful consequence.

On Hobbes’s view, deliberation is consideration of the consequences of an action, and because animals display prudence, they also display this. Further, because they display deliberation, they must display will, which is just the last appetite in deliberating, on Hobbes’s account (vi, 33). When attributing these faculties to animals, Hobbes even goes so far as to argue against Scholastics who would deny this faculty to animals, showing again the depth of his commitment to the explanatory unification of humans and non-human animal cognition.

In each case, these faculties are attributed to non-human animals on the basis of behavioral similarities between them and humans, just as in the other figures

discussed above. Hobbes thinks these similarities are so obvious he does not even bother to list them specifically, instead appealing to our background experience with animals. Unlike these three skeptics, he does not introduce stories of particular animals or fantastical behavior to make his point; he merely appeals to our everyday observations of animal understanding, planning, and deciding.

As noted above, Hobbes does not think that human and non-human animal cognition are entirely the same: among other deficits, non-human animals lack reason. "Reason" is a technical term for Hobbes, meaning the ability to voluntarily add and subtract ideas from others, yielding new propositions. Non-human animals are incapable of the sort of understanding that would facilitate this ability. Non-human animals also lack the ability to cast their minds about voluntarily to look for potential causes or effects. Because of these two deficits, non-human animals are incapable of reason. That they are incapable of reason and speech further entails that they are not capable of science, which is explicit, reflective knowledge of consequence or dependence, for Hobbes.⁴⁰

That non-human animals lack the ability to voluntarily cast about for possible effects of a cause also means that they are incapable of concern for the distant future. This in turn means they cannot scheme to obtain their own good at the cost of others in the way that facilitates the state of nature turning into a state of war of all against all for human beings. These basic differences in cognition between humans and non-human animals have great consequences for the eventual social and political disposition of the two groups.

With respect of cognition, though, the similarities between what Hume claims about non-human animal inference (and how it relates to human inference) and Hobbes's claims on this same topic are striking. Hobbes does make further claims about faculties humans have that non-human animals lack—claims Hume avoids—but they identify the same core capacities as key for helping both humans and non-human animals navigate the world.

What is crucial here is that, like Hume and the three skeptics examined above, where there are similarities in behavior, Hobbes attributes the same underlying mental mechanisms. Where he sees differences in behavior—as in, for example, speech and reason—he attributes a difference in underlying cognitive capacities. Hobbes is deploying the same commitment to explanatory parsimony and similarity of explanation of human and non-human animal cognition that we see in Hume and the skeptics.

VII.C.2. Locke

Locke also jointly explores the capacities of human and non-human animals, attributing shared explanations where he finds shared behavior. As with Hobbes, this is a wide range of our cognitive capacities. Locke sees humans and non-human animals sharing the capacities for perception, that is, production of ideas in the mind

by the senses (II.ix.11–15).⁴¹ Locke also argues that non-human animals possess retention and memory. Locke argues for this by citing the behavior of song-birds, who, he claims, endeavor to match their reproduction of tune to a remembered standard by more closely approximating it over time until they match it perfectly (II.x.10). This behavior shows retention and comparison, just as it would if a child exhibited the same behavior. Locke also attributes faculties of discernment,⁴² comparison (II.xi.5), and compounding (II.xi.7) to non-human animals. Locke does limit these latter two, based on observed differences.

The most important difference Locke sees between humans and non-human animals is that the latter group cannot abstract away from particular features of ideas, and so cannot use general terms (II.xi.9–10). Locke denies this to non-human animals because he sees no evidence that they use general signs to signify these abstract ideas (II.xi.11). So, because animals do not speak, he denies them the abilities that would underly speech.

He says that, though differences in speech and abstraction make a concrete difference between humans and non-human animals, it would be intellectually irresponsible to do as Descartes does and deny non-human animals all sense and reason:

For if they have any *Ideas* at all, and are not bare *Machins* (as some would have them) we cannot deny them to have some Reason. It seems as evident to me, that they do some of them in certain Instances reason, as that they have sence; but it is only in particular *Ideas*, just as they receiv'd them from their Senses. (II.xi.11)

Locke is committed to explaining the vast similarities he sees between humans and non-human animals by appeal to the same underlying cognitive structures, even allowing that non-human animals reason.⁴³

VII.C.3. *The Shared Principle Found Elsewhere*

The use of the naturalistic principle that similar behavioral effects call for similar cognitive causes constitutes what is shared between Hume and the skeptics on non-human animal cognition. But it is common in the period, even in non-skeptical thinkers.⁴⁴ So even though the influence Hobbes and Locke had on Hume on other issues is substantial and well-known, it suffices to make the claim of influence *by these skeptics* less probable to show that other thinkers that Hume read made similar argumentative moves.⁴⁵ As Hobbes and Locke display a natural-scientific commitment to explaining similar behaviors by appeal to similar cognitive causes, they display the same commitment that is shared by these three skeptics and Hume. Thus Hume's use of that principle gives scant reason to attribute special influence to the skeptics on Hume's arguments regarding animal reasoning.⁴⁶

VII.D. Evidence Used

There is one final difference between Hume and these three skeptics: the evidence they rely on differs substantially. One might think that the influence that Kemp Smith and others identify from these skeptics has less to do with conclusions drawn or arguments used in addressing the cognitive similarities of humans and non-human animals and, instead, rather more to do with the *amount* of similarity one seeks to accommodate. The influence of the skeptics would consist not in seeing just that *some* similarity must be explained but rather in seeing that a large amount of behavioral similarity needs to be explained. As Hume seeks to accommodate more similarity than Hobbes or Locke, one might think it apt to ascribe influence to these three skeptics on this basis.⁴⁷ That Hume sees much behavioral evidence as needing to be explained, however, does not of itself speak to any special influence by these skeptics, as the great similarity Hume accommodates comes largely from different kinds of sources.

One striking feature of these three skeptics' investigations into animal reasoning is their relative happiness to accept and relate stories of particular animals in particular circumstances that exhibit some particularly noteworthy behavior. Hume's examples, by contrast, are perfectly general. They are not about *some* dog (Chrysippus's dog, for instance) but rather *dogs* generally. They are not about a specific horse but rather about horses. Hume's evidence appears to be derived from living and working closely with animals, observing how they comport themselves in everyday circumstances. Unlike the skeptics, Hume does not appeal to the testimony of those distant from us in time or space, but instead what his readers would have seen with their own eyes while raising their own horses and hounds. This is in stark contrast to Sextus, Montaigne, and even Bayle, as Bayle still relates tales like those about elephant religion or horses feeling guilty for committing incest.

Hume does make use of at least one of the same examples as Bayle, that of the dog who cowers in anticipation of being struck by its master. It is not surprising that Hume takes up such an evocative example, especially one that illustrates his point that animals anticipate so neatly. Nevertheless, that Hume makes use of this example demonstrates only a very thin kind of influence by Bayle, particularly as Hume and Bayle fill out the example differently and draw different conclusions from it.⁴⁸ Hume seems to have, in this case, picked out a point from Bayle that suits both his argumentative goals and the evidential constraints he has placed on himself.

This last point is the relevant one: these skeptics are willing to draw on evidence from distant times and places, but Hume does not make use of any such evidence, even when it would seem to help his case. Hume only makes use of rather more mundane examples. As the similarities between humans and animals that Hume seeks to accommodate come largely from sources that are different in kind from the sources of the similarities claimed by these skeptics, they provide little reason

to see Hume as being directly influenced by these skeptics on the issue of non-human animal reasoning.

VIII. Conclusion

Hume was undoubtedly familiar with the works of Sextus, Montaigne, and Bayle. Further, Hume and these other thinkers were definitely concerned to determine the relationship of human to non-human animal cognition. They were also all certainly concerned to do so on the basis of having observed behavioral similarities between those two groups. This leads many commentators to ascribe a special influence for these skeptics on Hume's view of animal cognition.

Examining Hume's arguments and the arguments of the skeptics, however, shows that where the skeptics employ substantive presuppositions about human reasoning to argue about animal reasoning, Hume does not do so. It also shows that Hume's conclusions differ in scope and function from the conclusions of the skeptics. Hume's evidence also differs markedly. What Hume does indeed share with the skeptics is also shared with non-skeptical thinkers like Hobbes and Locke. The appropriate conclusion to draw from this examination is that claims of notable positive influence by the skeptics on Hume's arguments about animal reasoning are markedly less probable than many authors have supposed.

Hume's writing on animal reasoning is *sui generis*: it does not directly follow the three skeptics that it is often purported to. As we have also seen, it differs substantially from the arguments presented in Hobbes and Locke. Most crucially, Hume's argumentation differs non-trivially from both groups in so much as he uses the analogy between humans and non-human animals to draw conclusions about human cognitive capabilities, not animal capabilities. Hume thus makes a unique contribution to Early Modern conversations about the relationship between human and non-human animal cognition.

NOTES

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1 Thus I will leave to the side here both considerations of the passions and considerations of Hume's rhetorical stance, for example, the "polemical attitude" that Seidler, in "Hume and the Animals," identifies Montaigne and Bayle as generating in Hume with respect to this issue.

2 In addition to the numerous textual similarities pointed out by Kemp Smith and others between Hume's texts and some of the articles of Bayle's *Dictionary Historical and Critical*, Hume's own notes show that he read Bayle; see Pittion, "Hume's Reading of Bayle." On Bayle's influence on Hume generally, there are a number of resources including Kemp Smith, but see particularly Popkin, "Skeptical Precursors of David Hume."

3 Kail also says of Hume that "his account is shot through and through with sceptical layers which display affinities with Montaigne" ("Sceptical Beast," 225). Kail identifies the most direct comparisons with Montaigne as coming from Hume's essay "Of the Dignity or Meanness of Human Nature," but it is his later discussion of the *Treatise* and first *Enquiry* which leads to the above-quoted assertion about the skeptical trope. Kail's claim is not merely that Hume and Montaigne are shaped by similar exposure to a skeptical tradition, but rather that Hume is shaped by exposure to Montaigne (in particular).

4 See Floridi, "Scepticism and Animal Rationality" and Muckler, "On the Reason of Animals," respectively.

5 It is worth noting that the relevant sort of skepticism, as we will see, is *epistemological* skepticism, rooted in claims about human and non-human cognitive capacities, not skepticism in any other sense, notably any sense with particularly religious overtones.

6 Floridi, "Scepticism and Animal Rationality."

7 Sextus's *Outlines of Pyrrhonism* (abbreviated PH, as is traditional) is cited throughout by book, chapter and section number. All quotations come from the text found in Annas and Barnes, "*The Modes of Scepticism*."

8 Though note that this experiment, per Norton and Norton's Editors' Annotations to the *Treatise* (477), is also found elsewhere in Sextus, as well as in Hobbes, Aristotle, and Lucretius. Hume does seem aware of, and influenced by, Sextus elsewhere, too, as for example in his use of arguments from the other modes of skepticism (PH 1.14.79–91, 100–23) in *Treatise* 1.4.4, and his rejection of the "expeditious" argument against skepticism (T 1.4.1.12; SBN 186), though note that this is also found in Bayle (*Dictionary*, "Pyrrho").

9 Regrettably, I do not have space for a full treatment of any of these authors while still addressing all three and Hume. For a full treatment of Sextus's arguments, goals, and terminology, see Annas and Barnes (*Modes of Scepticism*).

10 On this argument, see Annas and Barnes (*Modes of Scepticism*, 51–53).

11 Sextus borrows the internal/external reasoning distinction here from the Stoics, showing again that they are his target. Regarding thought, Sextus argues in §65–72 that dogs reason about their own well-being (PH 1.14.66), exhibit justice and other virtues (PH 1.14.67–68), and exhibit logical reasoning, for instance, employing arguments by elimination (PH 1.14.69). Further, dogs "grasp and relieve their own feelings," appropriately tending to themselves medically (PH 1.14.70).

12 For instance, they express their thought when barking hostilely at those they wish to scare off but making a different sound when "fawning" (PH 1.14.75).

13 My goal here is not to explicate or disambiguate Montaigne's arguments or terms. For a more in-depth treatment and evaluation of Montaigne's arguments, see Popkin, *History of Skepticism*, chap. 3. I restrict myself here to Montaigne's *Apology for Raymond Sebond*, as it directly addresses the issue of animal reasoning at length.

14 All citations to Montaigne's *Apology for Raymond Sebond* use Ariew and Grene's translation, referenced by page number.

15 It is not the purpose of this paper to examine the quality of any of these arguments.

16 A brief catalogue of the capacities treated in this way would include aspects of interpersonal intercourse, like speech and communication (15–17, 21), being taught and teaching (26–27), laughing (21), acting and comedy (26), and society generally (40). Montaigne also addresses aspects of virtuous behavior, like high-mindedness (24, 41), soldierliness and other martial characteristics, (29, 35, 38), household management (35), loyalty (38), gratitude (39), justice and sympathy (33), duties associated with station and role (40), repentance and regret (42), clemency (42), and rights accorded by familiarity and understanding (42). Montaigne considers aspects of cleverness, like numeracy and mathematics (26, 41) and malicious subtlety (35); as well as other aspects of human behavior, like aesthetic experience (44–45), medicine (25), and our “debauches” (34).

17 As Floridi, in “Scepticism and Animal Rationality,” puts it, “man has no good reasons to consider himself superior to other animals. . . . The inquisitive dog with his rational capacities should remind men of their limits, and teach them some intellectual modesty” (47).

18 Unfortunately, I cannot provide a full discussion of Bayle's encyclopedic concern with animals in a single article. Des Chene, “Animal as Category,” situates and outlines Bayle's sections on animals.

19 The Scholastic view takes animals to have sensitive but not rational souls; the Cartesian view insists animals are mere automata. As the Scholastic view provides evidence that non-human animal cleverness cannot be explained through mere automatic action, it makes its own claim that reason is not required to explain non-human animal behavior less plausible. Conversely, as Cartesians adduce evidence that mechanism can indeed explain clever-seeming animal behavior, they undermine their view that human behavior cannot also be explained in such a manner. See Des Chene, “Animal as Category.”

20 All citations to Bayle will reference and quote various remarks from the article “Rorarius” in Bayle, *Historical and Critical Dictionary*, except when noted. This edition is the canonical complete English translation of Bayle's *Historical and Critical Dictionary*. The Popkin translation (Bayle, *Historical and Critical Dictionary: Selections*) is reasonably complete with respect to “Rorarius” and the text does not differ substantially with respect to what I have cited here.

21 Note that the “specific difference” noted in condition two cannot be given directly in terms of rationality, as that is to be proved on the basis of whatever difference is identified (Fry, “Bayle's ‘Rorarius’”). This leaves the third criterion as the only one concerned directly with animal reasoning.

22 Some—including Leibniz—seem to hold that Leibniz's view satisfies all three but that Bayle rejects it for other reasons (Des Chene, "Animal as Category"). For further discussion of this claim see Fry, "Bayle's 'Rorarius.'"

23 These are just in "Rorarius." The article "Pereira" relates several other examples, including Seneca's story of the lion saving the slave that had earlier benefited it (just as Montaigne related it). Most of "Pereira" is dedicated to determining what views certain historical figures did in fact hold, and is, as such, irrelevant to this discussion.

24 It is essential to Bayle's skeptical fideist project that he does not conclude that humans do not have such souls. Bayle's conclusion here must be essentially Pyrrhonic: we should not be satisfied with any available explanation, and so we should suspend judgement.

25 Hume's *Treatise* is cited by Book, part, section and paragraph number along with page numbers referencing the Selby-Bigge/Nidditch (SBN) edition. Hume's *Enquiry Concerning Human Understanding* will be cited similarly by section and paragraph as EHU, with attendant SBN numbers.

26 The *Treatise* argument is more convoluted, involving general principles and future particulars, but the general form is the same.

27 In the *Treatise*: "'Tis therefore by experience they infer one from another. . . 'Tis therefore by means of custom alone, that experience operates upon them" (T 1.3.16.8; SBN 178).

28 Hume's assertions about the philosophers here are relativized to only the "active parts of life" and "in the main." Hume *could* draw on the claim that arguments from cause to effect (or vice versa) are impossible here and deny them to the philosophers (and others) entirely; but he makes the weaker claim that most people do not use them in most circumstances. This suggests, as noted above, that he wishes for these arguments to be independent of the claims in *Treatise* 1.3.6 and *Enquiry* 4.

29 For a more detailed look at the *Treatise* and EHU sections, including the dissimilarities between the two and why we should disregard the early paragraphs of *Treatise* 1.3.16 where the analogy seems, superficially, to be running in the opposite direction, see Boyle, "Hume on Animal Reason."

30 This is not to say that Hume does not go on to draw skeptical conclusions on the basis of his positive psychology of humans, but merely that if and when those conclusions follow, they do so from the positive human psychology rather than the discussion of animals. See section VII.B in this paper.

31 One might worry that talk of the skeptics metaphorically "raising" animals to the level of humans is misleading, as they go on to denigrate the importance of what is thereby attributed to animals. This is right, but there is still a notable difference to be identified between these skeptics and Hume, namely, how the arguments proceed and the conclusions they draw.

32 It should also be noted that this conclusion—that Hume's arguments in the sections on animal reasoning serve Hume's ends in a different way from the way these skeptics' arguments serve their ends—still holds if Hume's project in *Treatise* 1.3 and sections 4–5 of the first *Enquiry* is not itself (epistemologically) skeptical, as, for example,

Garrett, *Cognition and Commitment*, Owen, *Hume's Reason*, and others have argued. This conclusion holds even if Hume is not skeptical at all. This is a virtue: *regardless* of how one interprets Hume's skepticism, how the discussion of animals functions in Hume is different from how the discussions of animals function in these skeptics.

33 This is his stated goal despite the fact that Montaigne does, as noted above, eventually identify imagination/reflection as unique to humans (and finds that this is the cause of human vanity, though not a warrant for it). In as much as he means to examine the whole scope of human and non-human animal cognition, though, his conclusions are still totalizing.

34 So it would seem that Kail is correct that Hume is "arguing against particular inflationary accounts of the nature of human inference and modelling our practice on that which is taken to be operative in the beasts" ("Sceptical Beast," 226), but only insofar as Hume takes *part* of human cognition—albeit an important part—to be the same as in animal cognition. But it would appear that he is incorrect to assert that this is the same form of reasoning that appears in Sextus and Montaigne, as their conclusions are not about the nature of human causal reasoning (as Hume's is), but rather human reason as a totality (and its limits).

35 This section does not argue for the claim that Hobbes or Locke specifically influenced Hume's arguments in his sections on animal reasoning, though this appears plausible with respect to Hobbes. It merely argues that the same mode of reasoning that Hume shares with the skeptics was "in the air," so to speak, in the period.

36 All references to Hobbes are to *Leviathan*, cited in text by Roman chapter and Arabic page numbers.

37 "Imagination is nothing but decaying sense and it is found in men and many other living creatures, as well sleeping as waking" (ii, 8).

38 "The imagination that is raised in man (or any other creature endued with the faculty of imagining) by words or other voluntary signs is that we generally call understanding, and is common to man and beast" (ii, 11).

39 Both unregulated trains of thought and the first form of regulated thought (iii, 12–13). It is the first form of regulated thought that consists in goal-directed planning.

40 For this chain of argument, see *Leviathan*, chapter v. Others, including Hume, would happily call what Hobbes attributes to animals reasoning, but the differing definitions of these terms is not my concern here.

41 Citations here are to Locke's *Essay Concerning Human Understanding* by book, chapter and section number.

42 Locke does not attribute discernment directly to non-human animals in the sections specifically on it (II.xi.2–3), but discernment is necessary for comparison and other faculties which he does attribute to them, so it is a safe assumption that he would endorse this faculty in non-human animals.

43 Locke's general commitment to explaining human and non-human animal behavior analogically can be seen elsewhere, for example, in arguing against the claim that the soul always thinks (II.i.19); see Wilson, "Animal Ideas," 14, for an analysis of this example. One thing that makes Locke unique, amongst these thinkers, is that he

endorses the claim that there are no gaps in nature. This makes it likely, he thinks, that there are a greater number of beings more intelligent than humans than there are less intelligent (III.vi.12). Even though Locke is unique in this respect, endorsing this claim further shows Locke's commitment to analogical reasoning: that nature has no gaps makes comparisons apt between adjacent parts. (I would like to thank Patrick Connolly for making this point in correspondence.)

44 Though, undoubtedly, these thinkers were familiar with skepticism. See, for example, Paganini, "Hobbes and the Continental Tradition of Skepticism," and Rogers, "John Locke and the Sceptics."

45 For contemporary examinations of Hobbes's influence, see Buckle, "Hume's Sceptical Materialism" and "Hume in the Enlightenment Tradition," and Russell, "Hume's *Treatise* and Hobbes's *The Elements of Law*." Locke's influence is more obvious, as Hume repeatedly cites Locke directly, noting his influence.

46 It is interesting, and perhaps probative for claims of influence, that the skeptics use the results of this comparison to immediately support negative epistemological claims, but that Hobbes and Locke use the results immediately to further their positive investigations of our terms and ideas. This use strikes me as rather similar to how Hume uses his results to further his investigation of human psychology. It is also worth noting that Hume's ultimate view of the similarities and differences between human and non-human animal cognition might be closer to Hobbes and Locke than it is to the skeptics. Beauchamp, "Hume on the Nonhuman Animal," and Driver, "Humean Account," argue that Hume would deny intuitive and demonstrative reasoning to non-human animals. If this is right, then Hume's view is much more like that of Hobbes, Locke (and even Leibniz, as Kail, "Leibniz's Dog," notes), and quite unlike the views of Sextus, Montaigne, and Bayle. Each of the former deny non-human animals certain "higher" cognitive capacities. Each of the latter three struggle against attempts to attribute unique capacities to humans; Sextus and Montaigne even make sure to explicitly attribute deductive reasoning to non-human animals. Hume's ultimate position would then more greatly resemble the non-skeptical thinkers and differ greatly from the skeptics. One complicating factor for any claim of influence on Hume, though, is that in writing about animals, the form of argument used by Hobbes and Locke more closely mirrors that of these skeptics than Hume's arguments do, insofar as both argue for conclusions about animal cognition on the basis of facts about human cognition, not vice versa, as in Hume. It is not clear whether any straightforward conclusion about influence can be drawn from the similarities that Hume's arguments on animal reasoning display to Hobbes's and Locke's, and, further, claims about Hobbes's and Locke's influence are immaterial to this paper's main claim that evidence for influence by these skeptics on this issue is scant.

47 Though this would seem to be contrary to Kail's description of "the skeptical trope" shared between Hume and the skeptics as "arguing against particular inflationary accounts of the nature of human inference" ("Sceptical Beast," 226).

48 This example is also found in other authors (for example, in Leibniz's *New Essays* II.xi.11). A full investigation of the history of this example in the Early Modern period would be illuminating, but it is well beyond the scope of this paper.

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