Handout 3: Belief Chapter 3

1. Defining Intellectualism

The irresistibility or passivity of belief is supposed to provide some basis for defining it in terms of accurate representation. Belief is supposed to be an impression or an image or a depiction generated from without: the effect of "the world" on us, rather than a component of our effect on it.[1]

Bernard Williams (1970/1973), Donald Davidson (1980, 1984), Michael Bratman (1992) and J. David Velleman (2000) all premise their accounts on the intuition that people cannot believe at will, and for this reason—among others—they define belief as something like acceptance for the sake of truth.[2]

> The norm of correctness for belief is not open to question because it is internal to the nature of belief itself. The concept of belief just is the concept of an attitude for which there is such a thing as correctness or incorrectness, consisting in truth or falsity…If a cognitive state isn't regulated by mechanisms designed to track the truth, then it isn't belief: it's some other kind of cognition. (2000, 16-7)

> The aim with which a proposition must be regarded as true in order to be believed is the aim of getting its truth-value right, by regarding it as true only if it really is. (2000, 246)[3]

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[1] Of course, one might agree that belief is essentially passive without attempting to support or explain its passivity with a definition centered on its aiming at truth. Indeed, at least one theorist—Owens (2003)—argues that the passivity of belief is incompatible with viewing it as cognition aimed at truth. Cf. Shah (2003) and Reisner (2009).

[2] Williams (1970), Davidson (1980) and (1984), Bratman (1992), and Velleman (2000); see especially Velleman, "On the Aim of Belief" (2000, 244-81). Cf. Evans (1963), Mayo (1963-4), Price (1969), Kelly (2002), Hieronymi (2006), Petersen-Steglich (2006), and Vahid (2006). Vahid (2010) argues that Davidson's intellectualism is incompatible with acknowledging pragmatic grounds for belief.

[3] Note, however, that Velleman equates intentions with self-fulfilling prophesies (e.g. the belief supposedly expressed when someone says, "I'll have the club sandwich"), which he excludes both from the traditional denial of belief at will and from Clifford's normative dictum that we ought to restrict our beliefs to what is adequately supported by the evidence we have at the time of judgment (Velleman, 2000, 52, esp. fn.17). Williams' rejection of "doxastic voluntarism" is perhaps the best known. "If I could acquire a belief at will, I could acquire it whether it was true or not; moreover I would know that I could acquire it whether it was true or not. If in full consciousness I could will to acquire a 'belief' irrespective of its truth, it is unclear that before the event I could seriously think of it as a belief, i.e. as something purporting to represent reality" (1973, 148). Cf. Bennett (1990).

2. Animal Belief

I reject these definitions on several grounds, the most compelling being their overly intellectualist character. Non-human animals have beliefs. This is an obvious truth: a datum on which we can premise our inquiries into the evolution of our own minds. In the famous words of the philosopher, historian and essayist David Hume (1711-1776),

> Next to the ridicule of denying an evident truth, is that of taking much pains to defend it; and no truth appears to me more evident, than that beasts are endowed with thought and reason as well as men. The arguments are in this case so obvious, that they never escape the most stupid and ignorant. (1740/2000, 1.3.16.1)[4]

Consider just one representative anecdote from the tenure of "Oh-six," a matriarch in the population of wolves scientists have reintroduced into the American West (Smith and Ferguson, 2005; Safina, 2015).

Note that this was an entirely novel behavior: *an innovation in intimidation*.[5] As McIntryre reports, "That's the only time we've ever seen a wolf eat coyotes." Writing eloquently about this episode, and a wide variety of similarly striking deployments of psychological understanding on the part of non-human animals, Safina concludes, "These creatures—in their ancestral homelands or a reasonable facsimile—know what they are doing." If that's right, to know what one is doing, one needn't be acting under a "description" of one's actions (Anscombe, 1957/2000). One need only be acting under some representation of one's deeds. And the wolf mind/brain appears to contain representations of the relevantly unarticulated variety.[6]

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[4] Cf. Malcolm (1973) and Bennett (1976). According to Malcolm, Descartes mistakenly equated cognition with "thinking of propositions" and "when we see the enormity of this exaggeration of the propositional in human life, our unwillingness to ascribe propositional thinking to animals ought no longer to make us refuse to attribute to them a panoply of forms of feeling, of perception, of realization, of recognition, that are, more often than not, nonpropositional in the human case. Their nonpropositional character does not mark them as something less than real forms of consciousness" (1973, 16). But Malcolm hypothesized that the other animals don't engage in the kind of conscious thinking or reasoning we do when solving problems, an admittedly mitigated form of Cartesian skepticism that is nevertheless placed in doubt by the steady stream of YouTube videos showing apes, elephants, crows and honey badgers solving complex problems without leaning on trial and error. "Chimpanzees, like all apes, think before they act. The most deliberate ape is perhaps the orangutan, but chimps and bonobos, despite their emotional excitability, also judge a situation before tackling it, weighing the effects of their actions. They often find solutions in their heads rather than having to try things out" (de Waal, 2016, 84). For early observations of these phenomena see Yerkes (1925).

[5] For more formal studies of animal innovation informed by databases constructed from similar observations see the various contributions to Reader and Laland (2003).

[6] Cf. Safina (2015, 164). The kind of awareness of what one is doing that sustains one's doing it—the "intention in action" as it is described by Searle (1983, 83-98)—involves a relatively sophisticated form of belief, the causal relevance of which is revealed when an animal's awareness of what she is doing "breaks down," as when lost in thought you forget your objective.

Did Oh-six *know* and hence *believe* that she was eating the children of the coyotes who had robbed food from the mouths of her own brood? As long as we are willing to allow that this is an overly precise description of her frame of mind, I think we have to answer "yes." But does this mean that Oh-six entertained, endorsed or believed to be true the proposition we express when describing her frame of mind? The answer is "no." Despite widespread opinion to the contrary, belief is not an exclusively propositional attitude.[7]

> A dolphin named Kelly realized that she got the same size fish for bringing in a big sheet of paper as for a small piece. So, under a weight at the bottom of the pool she hid any paper that blew in. When a trainer passed, she tore off a piece of paper to trade for a fish. Then she tore off another piece, got another fish. Into the economy of litter, she'd rigged a kind of trash inflation rate that kept the food coming. Similarly, in California, a dolphin named Spock got busted for tearing pieces off a paper bag he'd stuffed behind one of the pool's underwater pipes, using each shred to buy another fish.
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> One day, a gull flew into Kelly's pool, and she grabbed it and waited for the trainers. The humans seemed to really like birds; they traded her several fish for it. This gave Kelly a new insight, and a plan. During her next meal, she took the fish and hid it. When the humans left, she brought the fish up and baited more gulls, to get even more fish. After all, why wait to scrounge an occasional piece

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(For example, my knowledge or belief that I am looking for my phone guides me into the kitchen, but it is often then "lost" or "blocked," leading me to stop and ask myself what I was looking for.) Action grinds to a halt when the intention-in-action is lost to memory. See Radvansky and Copeland (2006) and Radvansky et al. (2011). For reviews of pathologies in action awareness see Blakemore and Frith (2003), Blakemore, Wolpert and Frith (2002) and Jeannerod (2010). Cf. Levy and Bayne (2004) and Bayne and Levy (2006).

[7] I'm unsure of the folk, but the view that belief is a "propositional attitude" is widespread among contemporary analytic philosophers. Some trace it to (founding father) B. Russell's (1921) account. But (i) Russell's analysis countenances non-discursive beliefs whose contents are entirely composed of sensations and images; (ii) Russell follows James in countenancing content-free feelings of belief, and (iii) Russell merely proposes *for the sake of discussion* to use "proposition" in a non-classical sense to encompass images, sentences, and various combinations of them. So Russell (1921) does not advocate what is currently accepted as the propositional attitude analysis of belief. Alternatively, some cite Gottlob Frege as the originator of the propositional attitude analysis, and Frege was indeed a neo-Cartesian of some sort insofar as he thought language necessary for thoughts about the past and future. See, e.g., Frege (1972). But it has been argued that Frege's notion of thought does not conform to standard uses of "proposition" in logic, philosophy of language and epistemology, and that Frege's construct plays several roles which cannot be satisfied by a unitary phenomenon. See, e.g., Burge (1979) and (2005). Whatever its origins, the impact of "the" propositional attitude analysis on contemporary theorizing about belief cannot be doubted. Velleman is an influential case in point: "From the fact that believing entails believing-true we have now derived two features of belief: Belief always takes a propositional object, and it regards that object as true" (Velleman, 2000, 249). On the contrary, from the "fact" that belief does not always have a propositional object, and from the "fact" that believers needn't regard anything as true in holding their beliefs, we have derived the conclusion that believing does not entail believing-true. As it so often goes in philosophy, one theorist's modus ponens is another's modus tollens.

> of accidental paper when you could become a wealthy commercial bird-fishing dolphin? She taught this to her youngster, and so the dolphins there became professional gull baiters. (Safina, 2015, 338)

Dolphins figure things out for themselves. They represent their ends—e.g. eating fish—and form conjectures as to how these ends might be more easily met. They improve upon entrained practices, recognize these improvements for what they are, and share their innovations with peers and kin. These are paradigmatic processes of belief formation and transmission, and we're not the only apes to employ them.

> It takes years of practice to place one of the hardest nuts in the world on a level surface, find a good-sized hammer stone, and hit the nut with the right speed while keeping one's fingers out of the way. The Japanese primatologist Tetsuro Matsuzawa tracked the development of this skill at the "factory," an open space where apes bring their nuts to anvil stones and fill the jungle with a steady rhythm of banging noise. Youngsters hang around the hardworking adults, occasionally pilfering kernels from their mothers. This way they learn the taste of nuts as well as the connection with stones. They make hundreds of futile attempts, hitting the nuts with their hands and feet, or aimlessly pushing nuts and stones around. That they still learn the skill is a great testament to the irrelevance of reinforcement, because none of these activities is rewarded until, by about three years of age, the juvenile starts to coordinate to the point that a nut is occasionally cracked. It is only by the age of six or seven that their skill reaches adult level. (de Waal, 2016, 80)[8]

Chimpanzees, wolves and dolphins are social animals who construct families and live in congresses, packs or pods. The same might be said of those birds who live in flocks and the primates from whom we've evolved, who clearly understand what others in their troops expect of them.[9] Apes know who can mate with whom without invoking a challenge, and when copulation will provoke punishment. And they achieve this understanding by reading each other's behavior, comportment, facial expressions, smells, grunts, gestures and postures. The language they use to these ends is not our own, as scientists are at pains to explain to uninitiated observers.

> Ethologists mostly interpret behavior within the wider context of species' habits and natural history. They thus avoid uninformed interpretations, such as that a grinning rhesus monkey must be delighted, or that a chimpanzee running toward

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[8] See too the spread of sweet potato washing among macaques reported by Imanishi (1952) and Matsuzawa (1994). Further examples include Inoue-Nakamura and Matsuzawa (1997), Noad et al. (2000), Rendell and Whitehead (2001), Whiten et al. (2005), Sapolsky (2006), van de Waal et al. (2013), and van Leeuwen et al. (2014).

[9] On birds see, e.g., Dally (2006), and "Scrub jays with prior experience of stealing another bird's caches subsequently reached food in new sites during recovery trials, but only when they had been observed caching. Naïve birds did not…experienced pilferers had formed a belief that observers will pilfer caches they have seen, and recache food in new sites to fulfill their desire to protect their caches," Clayton, Emery and Dickinson (2006, 197). Cf. Taylor et al. (2007).

> another with loud grunts must be in an aggressive mood. Anyone who has watched these animals for the amount of time that primatologists typically devote to their work knows that rhesus monkeys bare their teeth when intimidated, and that chimpanzees often grunt when they meet and embrace. In other words, a grinning rhesus monkey signals submission, and grunting by a chimpanzee usually serves as a greeting. Hence, the careful observer may arrive at insights that are at odds with extrapolations from human behavior. (de Waal, 1999, 264; cf. de Waal, 2016, 140-9)

Apes don't just express their thoughts and emotions without prior processing. Many display a kind of Machiavellian intelligence in deceiving each other so as to avoid the negative consequences of transgressing the expectations of other apes (Goodall, 1971; Kummer and Goodall, 1985, chapter 10; Byrne and Whiten, 1990, 1992; and Hare et al. 2001). Often enough, two or more individuals join together to defeat a third (Harcourt and de Waal, 1992). Large groups of chimpanzees are known to coordinate a hunt, chasing their monkey prey into the dense jungle where conspiring chimps wait in ambush (Boesch and Boesch-Achermann, 2000). Even in contrived experimental contexts, chimpanzees show a remarkable ability for instrumental and "abductive" reasoning (Camp, 2009). If they know grapes are hidden in one of two covered cups, and the empty cup is shaken, they immediately infer that the grapes are in the other vessel (Call, 2004).[10] Indeed, a recent overview of the evidence by J. Call and M. Tomasello (2009) concludes that chimpanzees have an almost fully human-like understanding of each other's minds, though the jury is still out on whether they attribute false beliefs to one another.

But my money's on the chimps. Consider, as preliminary evidence, an anecdote F.B.M. de Waal relates of his days as a student in Utrecht, when two young chimpanzees escaped during the night to frolic through the building, "only to return to their cage, carefully closing its door behind them before going to sleep" (de Waal, 2016, 33).[11] Weren't these naughty chimps trying to conceal their escapade? Weren't they trying to induce false beliefs in de Waal and his colleagues? Perhaps even more impressive, are the touching gestures of Lolita, the proud mother of a newborn chimpanzee baby who de Waal asked to see.

> I called Lolita out of her grooming huddle, high up in the climbing frame, and pointed at her belly as soon as she sat down in front of me. Looking at me, she took the infant's right hand in her right hand and its left hand in her left hand. It sounds simple, but given that the baby was ventrally clinging to her, she had to cross her arms to do so. The movement resembled that of people crossing their arms when grabbing a T-shirt by its hems in order to take it off. She then slowly lifted the baby in the air while turning it around on its axis, unfolding it in front of me. Suspended from its mother's hands, the baby now faced me instead of her.

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[10] For a report of similar inferential abilities in sea lions see Schusterman, Kastak and Kastak (2003).

[11] Professor de Waal also relates the story of Dandy, a lower ranked ape, who hid grapefruits from higher ranked males for future consumption (2016, 62). Didn't Dandy try to mislead the other apes into thinking the grapefruits were all gone?

> After it made a few grimaces and whimpers—infants hate to lose touch with a warm belly—Lolita quickly tucked it back into her lap.
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> With this elegant motion, Lolita demonstrated that she realized I would find the front of her newborn more interesting than its back. To take someone else's perspective represents a huge leap in social evolution. (2016, 148-9)

Note that human children were also thought to lack an understanding of false belief prior to four years of age, but this hypothesis has recently been disconfirmed and the evidence in its favor adequately explained away.[12] (The parents I know have always doubted it. A three-year-old knows when she is lying.) It is reasonable to wonder whether expert opinion on ape cognition will soon follow suit. And yet, though these social animals use systems of communication to express their beliefs to one another, they do not construct sentences, propositions or other representations that they then evaluate for truth or falsity. So belief is often more basic—in both a phylogenetic and ontogenetic sense—than acceptance for the sake of truth.[13]

3. Explaining Intellectualism as Anthropodenial

The most famous figure in modern biology, Charles Darwin, had no compunction attributing high-level mentality to other social animals. In *The Descent of Man* he argued that all such animals are capable of love, sympathy, reciprocation and self-command.[14] But if other animals know what they are doing and know what we are doing to them, what distinguishes them from us? What, if anything entitles us to hunt, kill and eat them when we would be unjustified in treating our fellows in this way? After a century of

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[12] See Baillargeon, Scott and He (2010), Rubio-Fernández and Geurts (2013) and Helming, Strickland and Jacob (2014). In response, Apperly and Butterfill (2009) defend a "two systems" theory of belief attribution built on an analogy with our two systems for representing the number of things in a collection.

[13] The only known exceptions to this generalization are those primates who have learned language from humans. For a first-person account of ape language research (APL) coupled with an assessment of its philosophical significance see Savage-Rumbaugh, Shanker and Taylor (1998). Kanzi, the bonobo most extensively trained and studied by Savage-Rumbaugh, developed an ability to understand novel sentences that compared favorably with that of a normal two-and-a-half-year-old human child. Cf. I.M. Pepperberg's experiments with Alex and other African grey parrots: Pepperberg and Gordon (2005), Pepperberg (2006a), Pepperberg (2006b), and Pepperberg et al. (2013). Since researchers are still studying the languages of birds, dolphins, killer whales and other highly communicative animals, it remains to be seen whether contemporary humans and their ancestors will always have whatever status we choose to award them for constructing, understanding, and evaluating sentences.

[14] Indeed, Darwin thought other-regarding concern evolved in many different animal species. "Parental affection, or some feeling which replaces it, has been developed in certain animals extremely low in the scale, for example, in star-fishes and spiders. It is also occasionally present in a few members alone in a whole group of animals, as in the genus Forficula, or earwigs" (1871/1982, 73). Recent studies with fish (groupers) and birds (corvids) confirm Darwin's general stance. See Bshary et al. (2006), Vail et al. (2014), and Clayton et al. (2007). Darwin's mistake was in describing these animals as "lower" rather than "other," as a more accurate phylogeny would warrant. See, e.g., Hodos and Campbell (1969).

failed attempts to supply the needed rationale, many philosophers and ecologists would now answer "Nothing" (Cavalieri and Singer, 1993).

Of course, psychologists have long warned against what Ruskin (1856) called the "pathetic fallacy" of projecting one's emotions onto nature. And C. Lloyd Morgan (1894) insisted that no animal behavior should be understood as "the exercise of a higher psychical faculty, if it can be interpreted as the outcome of the exercise of one which stands lower in the psychological scale."[15] But what came to be called "Morgan's canon" employs ill-defined concepts of "higher" and "lower." A more accurate phylogeny—or graphic representation of the descent and differentiation of species—would dispense with talk of a linear scale in favor of a branching structure. For this reason, modern interpreters construe Morgan as counseling us to explain animal behavior with instincts, habits and associations unless these prove inadequate and we are "forced" to credit animals with beliefs and plans (Bermudez, 2003, 6-9).[16]

Now scientists who insist that we can *never* know whether other animals make plans and formulate beliefs, might be likened to those "climate skeptics" who insist that we do not yet know whether human activity is responsible for the rise in global temperatures (Conway and Oreskes, 2010). If anthropomorphism is an epistemic vice, so is the kind of "anthropodenial" de Waal first described twenty years ago (1997, 1999).

> One may also ask why zoo visitors are always joking about the primates, whereas the antelopes, lions, reptiles, and elephants fail to elicit hilarity. People stand in front of the monkey rock hooting and yelling, scratching themselves in an exaggerated manner, and pointing at the animals while shouting pleasantries like: "I had to look twice, Larry, I thought it was you!" More than other animals, primates place a question mark behind the dichotomy between the visitors and the visited. In my mind, the laughing reflects anthropodenial: it is a nervous reaction caused by an uncomfortable resemblance. (de Waal, 1999, 260; cf. Sheets-Johnstone, 1992)

Contemporary researchers now argue that "the goal of comparative research should be understanding the cognitive mechanisms underlying animal behavior in their full variety

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[15] "It is extremely difficult to obtain true observations of the instincts of animals from the disposition to make them subjects of marvel and astonishment. Many people take delight in storing up tales of the extraordinary sagacity of dogs, cats, horses, birds, &c. in doing things quite incomprehensible and inexplicable on any law of nature whatsoever. It is nearly as impossible to acquire a knowledge of animals from popular stories and anecdotes, as it would be to obtain a knowledge of human nature from the narratives of parental fondness and friendly partiality," W. and R. Chambers (1854); quoted in Bain (1859/1865, 48).

[16] Though Morgan advanced this rather skeptical methodological suggestion, he was willing to acknowledge the beliefs and designs of nonhuman animals when prolonged observation seemed to warrant it. See Sober (2005) and de Waal (2016, 41-3). But a continued emphasis on "formal parsimony" (Dacey, 2016a) retains its dangers. For example, Bermudez is led by his neo-Morganian methodology to conclude that human language is necessary for meta-cognition (2003, 150-88) contrary to the ethological observations reported above.

and complexity" rather than partitioning them into the rational vs. the non-rational or the associative vs. the rule-governed (Shettleworth, 2010, 19; cf. Papineau and Heyes, 2006).

Correlatively, most moral philosophers now recommend that we ignore species distinctions entirely, and instead justify our treatment of each individual animal (human or otherwise) on the basis of its "morally relevant" psychosocial features. If an animal is sensate, it is wrong to strike it, pinch it or cause it pain. But if an animal is insensate, or anesthetized, these activities might be just fine. More seriously, since only some animals value proximity to parents or offspring, or their freedom to migrate across long distances, only some animals are unjustly restrained or separated from kin without good reason. An ethically mature judge proceeds on a case-by-case basis (Rachels, 1990; Savage-Rumbaugh, Shanker and Taylor, 1998; cf. Singer, 1990 and Francione, 2007).

4. What Makes Humans Different? Morality?

Still, even those scientists and philosophers who bemoan man's treatment of the rest of nature continue to speculate on the important differences between humans and other animals: those features that are supposed to account for the extraordinary diversity in human culture, the "advance" of human technologies, and the enormous changes humans have wrought on the Earth's ecology when these are compared to the contributions of other animals. In sketching *A Brief History of the Human Mind*, the neuroscientist W. Calvin (2004) signs on to one hundred such distinctions, citing everything from sentential language and other "structured stuff," to the distinctive kinds of motor planning implicated in launching a spear from a distance.[17] Even de Waal countenances a "few dozen differences" (2016, 125).

This ambivalence has a storied history. Though Darwin built his theory of natural selection on psychologically rich explanations of animal behavior, he also drew a distinction in kind between "us" and "them." For Darwin, "Fully subscribed to the judgment of those writers who maintain that of all the differences between man and the lower animals, the moral sense or conscience is by far the most important" (1871/1982, 120). According to Darwin, though other animals are appropriate objects of moral *concern*, they are inappropriate objects of moral *judgment*. In this respect, animals are like human children who have a right not to be tortured, while being too young and uncomprehending to be punished by the state, blamed in full by their parents, or held "morally responsible" for any torturous actions they might perform in turn. Among the animals of which we are aware, Darwin thought, only (relatively) mature humans are proper targets of moral appraisal.[18]

But what distinguishes a mature human's moral sense from that of a nonhuman animal? We will blame a person for stealing from us, or lying to us, or harming us physically.

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[17] For a more nuanced and systematic overview see Shettleworth (2012). Cf. Kagan (2004), Premack (2007), Suddendorf (2013), and Millikan (2006). Millikan argues (against the Fodorians) that humans are unique in our capacity for propositional thought, which is in turn necessary for knowledge of "dead facts."

[18] For recent discussion see Humphrey (2002).

And though we discourage similar behavior in our pets, many of us think it is inappropriate to blame a dog for stealing a roast, or to express disappointment with a cat for scratching a stranger, and we find it similarly jarring to hear these animals described as acting "immorally" in the cases on hand. What, if anything, justifies this difference in our attitudes? "Reflection," was Darwin's answer.

> Man, from the activity of his mental faculties, cannot avoid reflection: past impressions and images are incessantly and clearly passing through his mind. (1871/1982, 136)

> A moral being is one who is capable of comparing his past and future actions or motives, and of approving or disapproving of them. We have no reason to suppose that any of the lower animals have this capacity. (1871/1982, 135)

Indeed, if the other social animals had the ability to reflect on their deeds and the consequences of their actions, they would have as great a moral sense as our own, albeit one suited to their characteristic patterns of social organization and means of reproduction.

> Whilst the mother-bird is feeding, or brooding over her nestlings, the maternal instinct is probably stronger than the migratory; but the instinct which is the more persistent gains the victory, and at last, at a moment when her young ones are not in sight, she takes flight and deserts them. When arrived at the end of her long journey, and the migratory instinct has ceased to act, what an agony of remorse the bird would feel, if, from being endowed with great mental activity, she could not prevent the image constantly passing through her mind, of her young ones perishing in the bleak north from cold and hunger. (1871/1982, 137)

Note that Darwin uses "reflection" to denote both introspection of what one currently thinks, feels and wants, and episodic, first-person memories as to what one has thought, felt and desired in the past.[19] If the mother bird could reflect in this sense, she would not just realize that her babies were likely perishing in the bleak north, she would recall, from the "inside," that she left them to that fate when her maternal instinct proved weaker than her migratory. If she were capable of introspective thought, Darwin reasoned, she would blame herself and experience guilt and remorse because her settled (non-instinctive) preferences—the ones that come to the fore when she reflects on her past behavior—rank the wellbeing of her children above her own survival.

In sum, if Darwin is right, guilt and remorse set us apart from the other primates, allowed us to regulate emotionally violent responses to one another to form large tribes and inter-tribal coalitions, to generate a division of labor, to develop languages and other symbolic systems, to inaugurate incredible artistic transformations to celebrate those we love, and

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[19] Contemporary psychologists have found that these capacities are neurologically linked to "prospection" wherein we imagine various seemingly possible futures in the course of deciding what to do. See Suddendorf and Corballis (1997), Suddendorf, Addis and Corballis (2009), Hassabis and Maguire (2009), and Maguire and Hassabis (2011).

to eventually brainstorm those technological advances that now enable us to more effectively maim, kill and disenfranchise those we hate. We domesticated ourselves, for better or for worse.[20]

But is Darwin right? We subject our dogs to punishment for their bad behaviors and reward them for doing what we wish. Does their memory of transgressing our expectations ever lead them to experience remorse or regret? It is not a priori obvious that human language is necessary for these emotions, nor the pained reminiscence that Darwin's migratory mother birds seem to lack. To the contrary, non-verbal practices of transgression, punishment, regret, repentance and forgiveness seem to undergird our distinctively human need to verbally confess our sins and reconcile with those we've harmed.

To this end, de Waal describes an ordinary event in the lives of the chimpanzees living together in the Arnhem Zoo, an event that was to prove important to the subsequent development of primatology.

> When the alpha male fiercely attacked a female, other apes came to her defense, causing prolonged screaming and chasing in the group. After the chimpanzees had calmed down, a tense silence followed, broken when the entire colony burst out hooting. In the midst of this pandemonium, two chimpanzees kissed with their arms wrapped around each other. These two chimpanzees turned out to be the same male and female central in the previous fight. (2000, 586; cf. de Waal, 1982/2007)

Defining "reconciliation" as a friendly reunion between former opponents not long after a fight, de Waal and A. van Roosmalen went on to record regular occurrences of the phenomenon in the Arnhem colony. And subsequent study has identified more than thirty non-human primate species in which reconciliation regularly takes place (Arnold and Aureli, 2006).

But aren't we the only species to recruit neutral parties to adjudicate a dispute? Not according to de Waal, who describes the chimpanzee Mama as a "mediator par excellence" (2016, 184).

> Two female chimps were sitting in the sun, with their children rolling around in the sand in front of them. When the play turned into a screaming, hair-pulling fight, neither mother knew what to do because if one of them tried to break up the fight, it was guaranteed that the other would protect her offspring, since mothers are never impartial…Noticing the alpha female, Mama, asleep nearby, one of them went over to poke her in the ribs. As the old matriarch got up, the mother pointed at the fight by swinging an arm in its direction. Mama needed only one glance to grasp what was going on and took a step forward with a threatening grunt. Her authority was such that this shut up the youngsters. (de Waal, 2016, 67)

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[20] See Hare et al. (2012) and the related work of M. Tomasello (2014), who emphasizes cooperative activity and the forms of communication it requires.

After reviewing a number of comparative studies of peace-making among non-human primates and human school children, the ethologist P. Verbeek now concludes, "Evidence from ethological studies on young children suggests that peacemaking is a natural tendency that we share with other primates and, possibly, with any number of other social mammals as well" (2008, 1518; cf. Silk, 2002). Perhaps Darwin was ahead of his time, but behind our own. Perhaps there really is no difference "in kind" between them and us. Kumbaya.

5. Indeterminacy

Of course, the intellectualists invariably consider this objection from the minds of animals. For example, Williams grants that other animals believe things in an "impoverished" sense of the term (1973, 138).[21] In what sense "impoverished"? According to Williams, the main obstacle to assimilating animal minds to our own is a matter of *determinacy*: there seems to be no fact of the matter as to how other animals conceptualize the objects of their fear or the sources of their satisfaction, and this prevents us from arriving at a well articulated description of their beliefs (cf. Davidson, 1980, 164).[22]

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[21] Dummett (1993) calls these impoverished beliefs "proto-thoughts." There are some notable exceptions to this grudging acceptance of the "quasi-beliefs" of non-humans. Famously, the Stoics, Descartes, Malebranche and the Cartesians seem to have denied other animals cognitions of any kind. "For we see that magpies and parrots can utter words as we do, and yet they cannot speak as we do: that is, they cannot show that they are thinking what they are saying. On the other hand, men born deaf and dumb, and thus deprived of speech-organs as much as the other beasts or even more so, normally invent their own signs to make themselves understood by those who, being regularly in their company, have the time to learn their language. This shows not merely that the beasts have less reason than men, but that they have no reason at all," Descartes (1637/1998, 140). For discussion of Descartes' motivations see Cottingham (1997), who excerpts Descartes' letter to Henry More on February 5, 1649 where Descartes writes, "It has never been observed that any brute animal has attained the perfection of using real speech, that is to say, of indicating by word or sign something relating to thought alone and not to natural impulse. Such speech is the only sure sign of thought hidden within a body. All human beings use it, however stupid and insane they may be, even though they may have no tongue and organs of voice; but no animals do. Consequently this can be taken as a real specific difference between humans and animals." Malcolm notes some conflicting evidence in Descartes' letters (1973, 41). Cf. N. Malebranche (1674-5/1997), especially sections 2.3.5, 5.3, and 6.2.7. For a historical overview of Western philosophical writing on animal minds see Steiner (2005).

[22] Velleman allows that other animals have beliefs (despite lacking the capacity for action) because the "cognitive mechanisms" responsible for their activity-guiding representations are "designed" to track the truth; the imputation of the desire for truth is a "personification" of aims that are in fact "subpersonal" (2000, 19; 184-8 & 253). My response to this conception of belief is three-fold: (i) Sub-personal "truth tracking" is insufficient for belief—as pre-doxastic perceptual mechanisms track truth if anything does and these mechanisms can deliver up experiences and construals that, when disavowed and suppressed, persist for some time in the absence of any belief in what is represented. (ii) Truth-tracking is only necessary for belief if truth is understood in a sufficiently "thin" way so as to admit sensibility-relative truths about beauty, funniness, deliciousness and so on: socially constructed phenomena that have no place in

The contents of a person's beliefs—the information a person uses to guide her actions and deliberations—would seem to stand in some relatively close systematic relation to her assertions. When you're ready to speak honestly, and you aren't lost for words, you can pretty much say what you think. Though R. Moran (2005) doesn't endorse this conception of the matter, he expresses it eloquently.

> The smile, if sincere, takes us to the pleasure of the other person, and the statements he makes, if sincere, take us to his genuine beliefs about some matter we are interested in. And since the other person's words are only of interest to us insofar as they are a reliable guide to his beliefs, we would do just as well, and perhaps better, if we had more immediate access to those beliefs, dispensing with the need for verbal expression and all of its risks and inadequacies. (Moran, 2005, 326)[23]

The problem is that the other animals we encounter either don't assert what they believe or we can't easily decode the postures, mannerisms, barks, whistles, rumbles and chirps they use to express themselves. (Which is just to point out, once more, that the other animals don't utter sentences.) Thus, the vexed relation between language and thought poses a seemingly unanswerable philosophical question: Do other animals have beliefs they can't easily express, or do they have feelings, sensations, and experiences without thoughts?

It is clear that other animals perceive things, remember things and expect certain things to happen (Clayton and Dickinson, 1998). And we regularly infer a person's beliefs from our knowledge of these perceptions, memories and expectations. So if you want to maintain a skeptical attitude toward the minds of the "brutes," you're going to have to work hard at it.[24]

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the theories advanced by academic scientists, but which are nevertheless tracked by cognitive mechanisms when they are deployed to render judgment in these domains. (As an interpretive matter, Velleman appears to be invoking a more "objective" sense of 'truth' in his work, as when he argues that our color attributions are all false because things don't "really and truly" have colors.) (iii) There are several kinds of belief that are produced and regulated by mechanisms that do not track the "truth" even when truth is relativized to a subject's sensibility: self-affirmations, religious creeds and philosophical codes are central examples. Of course, these considerations are not decisive. One might say that self-affirmations and value judgments are not expressions of belief and make comparable "moves" in response to criticisms (i) and (ii). As per our pragmatic meta-level thesis: the choice between Velleman's intellectualism, Bain's pragmatism, and the other plausible conceptions of belief discussed in this book is a "free" one and so radically undetermined by anything we might judge to be the "evidence" without controversy.

[23] Moran notes that assertion incurs responsibilities for a claim in ways non-verbal (especially non-intentional) expression of it need not. But these social and legal consequences of assertion flow from lies as surely as they do from sincere speech. Perjury is a paradigmatic example.

[24] Neurotypical people automatically distinguish biological motion from artificial mechanics and infer an animal's expectations from its (biologically natural) postures and movements. This contrasts (to some extent) with "deafferented" patients like G.L. (mentioned in chapter 1) who lack haptic or proprioceptive information about their own movements and are consequently impaired in their "mindreading" abilities, providing evidence that an observer's "simulation" of

To take one of Hume's examples: when you hear a voice in the hall you will immediately infer that there is someone out there; and were you to open the door to the hall you would expect to see someone standing there (Hume, 1740/2000, 1.4.2.20; cf. Piaget, 1954). Wouldn't a dog similarly expect to see her master upon hearing or smelling the same? Of course she would (Ashton and De Lillo, 2011).[25] So why must we extol the riches of our own expectations in contrast with her "impoverished" simulacrum of belief?

The problems arise when we try to say precisely *what* the dog believes. Does she really believe that her "master" is in the hall? Doesn't this imply that the dog has a determinate conception of masters, servants and other social hierarchies? Do dogs understand these relations in the way a child must before we are willing to say that she adequately understands the word "master" or some synonym? In the course of his examination, Williams dismisses the possibility that animals might possess such concepts.

> Suppose there is a dog whose master is the President of the United States; a certain figure comes to the door, and this dog wakes up and pricks up his ears when he hears the person crossing the step — we say 'this dog took the person who was coming up the drive for his master'…we would hardly say that the dog had taken this figure for the President of the United States. Is this because it is a better shot to say that the dog has got the concept 'master' than it is to say that the dog has got the concept 'President of the United States'? Why? The concept 'master' is as much a concept that embodies elaborate knowledge about human conventions, society, and so forth as does the concept 'President of the United States'. There seems to be as much conventionality or artificiality in ascribing to a dog the concept 'master' as there is in ascribing to a dog the concept 'President of the United States'. So why are we happier to say that a dog takes a certain figure for his master than we are to say that the dog takes a certain figure for the President of the United States? I think the answer to this has something to do with the fact, not that the dog really has got an effective concept 'master', which would be an absurd notion, but that so much of the dog's behavior is in fact conditioned by situations which involve somebody's being his master, whereas very little of

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an animal's actions plays some role in her understanding of its mind. On the first point see Fox and McDaniel (1982). On the second, see Bosbach et al. (2005). On the third, see Iacoboni et al. (2004). Thus, if we doubt that animals have the expectations they seem to have, we are indulging in "Cartesian skepticism" in a broad sense of that term. Though skepticism about animal belief needn't involve distrust of the "senses" (narrowly construed), it does mean doubting the deliverances of a relatively automatic, relatively innate faculty, which functions to represent the minds of others: a capacity for social understanding. However, unlike Cartesian skepticism with regard to the external world, Cartesian analyses of belief cannot be dismissed a priori. We must instead address the grounds on which intellectualists "valorize" or prioritize sentential language.

[25] It is also well known that dolphins recognize each other's signature whistles. See King and Janik (2013), and King et al. (April 2013), where is it is concluded, "This use of vocal copying is similar to its use in human language, where the maintenance of social bonds seems to be more important than the immediate defense of resources" (2013, 1). See too Barrett-Lennard (2000) and Ford (2002) who observe different call types among different populations. Dolphins and killer whales seem to maintain their group identities without sentential communication (Vincent, Rong and Andrews, forthcoming).

> the dog's behavior is conditioned by situations which essentially involve someone's being the President of the United States. (1973, 139)[26]

And yet, despite Williams' confident assertion that dogs lack an understanding of one animal's mastery over others, it is clear to most of those who study them that the wolves from whom our dogs descend understand the social hierarchies in which they live.[27] Since properly trained dogs also evince some understanding of "who's the boss," the suggestion is not incredible.[28] If a dog does grasp its dependence on some human for love, nourishment and freedom from punishment, and relates emotionally to that person in the ways we do when we interact with those on whom we depend for these things, we are warranted in saying, without emendation, that the dog believes its *guardian* or its *master* or its *owner* or its *leader* is nearby. If the dog could talk, she could help us discriminate between these subtly different formulations, but she can't, so she won't.[29] As H. J. Glock explains,

> Although the sentences we use in ascribing thoughts have components, our ascriptions do not presuppose a prior ascription of these components. Instead, they are based on the subject manifesting certain perceptual capacities, attitudes and emotions. In the non-linguistic case, these manifestations will obviously not include assent to sentences. But they will include forms of behavior, postures and facial expressions which higher animals share with human beings. (Glock, 2010, 20)[30]

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[26] Cf. Davidson (1984, 163) and Armstrong (1973, 25), critically discussed by Stich (1978).

[27] See Smith and Ferguson (2005) and Safina (2015) quoted above.

[28] Williams is also mistaken in asserting the oddity or infelicity of attributions of beliefs to dogs that employ terms associated with sophisticated political concepts like "the President of the United States." Suppose President Obama has stayed out late, but lent his coat to the first lady. And suppose that when Michelle Obama approaches the door wearing the coat in question, the Obamas' dog Bo catches the scent and begins to bark and furiously wag his tail with a vigor he reserves for the president. One secret service agent might then say to another, "Bo thinks the president is home." There is nothing infelicitous about such attributions, as is noted by all those who reject naively "Fregean" analyses of belief reports. See, e.g., T. Burge's example, "If Alfie says, 'The most powerful man on Earth in 1970 (whoever he is) is a crook,' not having the slightest idea who the most powerful man is, a friend of the potentate may say to him, 'Alfie believes that you are a crook,'" Burge (2007, 50). Beliefs with indeterminate contents are "incompletely conceptualized" and so "de re" in the sense Burge there defines, though Burge is right to characterize his example as a " de re ascription of a de dicto belief" (2000, 66).

[29] Davidson (1985) and Dummett (1993) both claim that an animal must possess the concepts we use in attributing a belief to her if she is to be credited with the belief we therein ascribe, and they claim, further, that animals cannot possess concepts without possessing an indefinite number of general beliefs. See Davidson (1985, 473-80) and Dummett (1993). Cf. McDowell (1994) and Steiner (2008, 1-29). Thus, Williams' dog cannot believe that his master is home unless said dog possesses the concept expressed by "master" which would require the belief that masters have rights over those who they rule and so on and so forth. But both proposals are under-motivated. Why not instead retain our intuitive attributions and drop these supposedly necessary criteria for belief possession?

[30] Contra Armstrong (1973, 26-7). Cf. Wilkes (1997) and Camp (2009). Camp requires that animal's possess "general representational abilities" but not linguistic or quasi-linguistic

This line of reasoning would allow that beliefs are often indeterminate between various possible interpretations of their contents. When the Founding Fathers of the United States said, "All men are created equal," did they express the judgment that *all* men are created equal? Or did they mean that all European men, or all white men, or all literate men, or all men who are armed, dangerous and willing to assert their equality with violent action must have been granted their equality by a creator? Who can say? The great Fredrick Douglas was right to be curious when he asked on behalf of his people, "Are the great principles of political freedom and natural justice embodied in that declaration extended to us?"[31] Even if we focus our assessment on, say, Thomas Jefferson's mind at the time at which he articulated the Declaration, there may be no fact of the matter. There may be no precise population of people such that Jefferson believed of its members that they (and only they) were created equal (White, 1978; Goodman, 2015). And the intended extension of "men" is the easiest part of the inscription to specify. Who or what is the implied creator? And what was the intended sense of "equality"? Since human utterances—and the beliefs they frame—are often indeterminate between their more plausible interpretations, indeterminacy fails to motivate a difference in kind between "us" and "them."[32] K. Wilkes nicely states the point.

> I am…untroubled by the difficulty of specifying (with our linguistic categories) the contents of a cat's, rat's or bat's mind. The difficulty is no worse, or better, than that of pinning down the content of the thoughts and anticipations of a composer or an artist, or of a non-scientist about abstruse or difficult theoretical entities. There will be a huge spectrum between vagueness and precision amongst

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"vehicles" if they are to possess the concepts we associate with the terms we use to attribute beliefs to them. Though Camp accepts the propositional attitude analysis of belief, she emphasizes the importance of control or spontaneity in her analysis of concept possession and allows that the measure admits of degree. She therein embraces two important elements of the pragmatic account of belief.

[31] See Douglas (1852/2014). Cf. Douglas and Jacobs (2004).

[32] For the realities of African-American attitudes toward the American Revolution see Horne (2012). Williams' own (1962) reflections on "all men are created equal" acknowledge its indeterminacy and nicely articulate the inscription's more substantive meanings. White (1978), Gates (2003) and Goodman (2015) offer detailed analyses of Jefferson's thinking about equality and slavery that nevertheless fail to attribute much determinacy on these matters. "In the 'Declaration' [Jefferson] holds that 'all men are created equal,' and in the *Notes on the State of Virginia* he writes eloquently about the evils of slavery. Yet he owned between one and two hundred slaves throughout his adult life, and fathered a slave family with his slave Sally Hemings. Compounding his inconsistencies, he argues in the Notes that 'the blacks' are an inferior race, the members of which should be expelled from America, lest they mix with 'the whites'" (Goodman, 2015, 101). For an interesting example of the indeterminacy of various relatively value-neutral judgments see H. Field's (1973) claim that Sir Isaac's Newton's beliefs about mass were indeterminate as between the contemporary concepts "relativistic mass" and "'real' mass." W.V.O. Quine's (1960/2015) more radical, more famous, and in some ways less interesting claim is that a hypothetical native's use of "gavagai" might be indeterminate in reference as between rabbits and "undetached rabbit parts."

> our ascriptions of what is said to be thought, believed or felt. (Wilkes, 1997, 180)

In an equally ecumenical passage, the august philosopher D.J. O'Connor draws our attention to the indeterminacy lurking in our deepest convictions and creeds.

> It is perfectly possible to believe a proposition of whose meaning we are uncertain or completely ignorant. It is said that some distinguished Roman Catholic philosophers profess to believe the propositions of their Church's creed 'whatever they may mean.' This is not so absurd a position as it can be made to sound. (1968-9, 13; cf. Newman, 1870/1992)

The cognitive scientist, D. Sperber (1982, 1997) calls these beliefs "semi-propositional" or "half-understood" and effectively argues for the unnaturalness of those psychological taxonomies that exclude them. Many semi-propositional beliefs cannot be subjected to empirical testing without further elaboration. Why? Because it's unclear exactly what they entail with regard to future experience. And this is so even when they are conjoined with more fully propositional background beliefs. The most rabid positivists or "verificationists" asserted, on these grounds alone, that the Church's creed and similarly obscure dicta lack meaning altogether. But these words aren't epiphenomenal. Though frankly ideological, the beliefs acquired when we truly accept a religion guide substantive swaths of our thought and behavior. The indeterminacy of a belief's content is no argument against its psychological reality.[33]

To stick with O'Connor's example: Only the most curious Catholic children will ask for a coherent conceptualization of the trinity. Are the three divine beings really just parts of the one and only God? Or are they truly distinct in nature and only unified by our thinking of them as a single entity? Kids who ask these questions can be sent to the clergy, who can offer metaphysically coherent doctrines, or romantic readings, or

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[33] Endorsement of barely articulate (highly vague) language raises psycho-semantic and logical issues suitable for a book-length analysis or two. Conceptual understanding is a heterogeneous collection of abilities each one of which admits of degree, and full understanding is an ideal imposed upon these continua. As we move from acknowledged expertise with a concept—and familiarity with the phenomena it encompasses—to deferential usage of technical terms, we tend to uncover beliefs that are increasingly partial in their action-guiding profiles. (My beliefs about quarks don't inform much of what I think and do; my beliefs about my parental obligations are much more extensive in effect, and this is because I have a much better understanding of the relevance of the latter to what I'm doing or planning to do.) It would seem that we cannot help reasoning and acting on claims we barely understand despite the risks involved. "Half-understood representations such as the dogma of the Holy Trinity can be objects of belief. However, disquoting such half-understood representations and using them unrestrictedly as premises in inference, on a par with well-understood representations, would be… hazardous. For instance, contradictions could arise undetected. Half-understood information may be epistemically useful, but only if it is treated with cognitive caution" (Sperber, 1997, 74). And this danger isn't merely discursive. A believer can be guided by an image in practice even while she acknowledges in discourse that it is inaccurate in certain respects. Sentences can be inconsistent and pictures incompatible. Do we feel less pressure to revise inconsistent beliefs when the conflict is intermodal (as it often is in the religious case)? Cf. Recanati (1997) and Bain (1859/1865, 552-3).

attractive mixtures of the two. Perhaps inspiration can be found in the image of love between father and son freely exchanged within God's divine body. (Though this same scene assumes a sinister cast if our congregant discovers that a priest has molested her boy.) The believer who has "internalized" the Church's creed in this way thinks of her love for family as qualitatively similar to God's internal structure. And if her rituals reflect this way of thinking, if it informs her interactions with clergy and the other members of her church, it is not wrong to say that she is guided by the belief that God is both one and three.

> It was said by Jeremy Taylor, 'Believe and you shall love'; he should have said rather, 'Love and you shall believe'; or, still better, 'learn to love, and you will learn to believe'. Religious truth cannot, therefore, be imparted, as has sometimes been supposed, by an intellectual medium of verbal exposition and theological demonstration. Being an affair of the feelings, a method must be sought adapted to heighten the intensity of these. Still, we must make allowance for a man thoroughly practiced in metaphysical and other reasonings, and fully convinced of his conclusions on their intellectual grounds. Doubtless, Aquinas, Calvin, and Butler, had a considerable amount of comfort from their intellectual convictions, apart altogether from their emotional culture, in which probably they were much below many Christians that could give no reason at all for the faith that is in them. (Bain, 1888, 532)

Of course, "belief in the trinity" is an extremely coarse measure of these Catholic "life orientations" (Zackariasson, 2010). But from a pragmatic perspective, it is the life orientation that matters, not its inchoate linguistic expression.

> There are some who feel pretty sure that those who adhere, for instance, to the nihilistic monism of the Vedanta, or to the Athanasian doctrine of the Trinity, never really conceive together the elements of the propositions that they affirm; but no one can deny that, out of the maintenance of the posture of belief towards these propositions, believers derive highly distinctive and vivid experiences, which they could scarcely have in any other way. (Lovejoy, 1908, 10)

Other examples arise from our reluctance to contemplate the abhorrent. For instance, you probably believe that infanticide is immoral insofar as you would describe it as such if asked. But suppose your ethics professor asks you to imagine you're a Jew hiding from the Nazis and that you must suffocate your crying baby to save everyone in your party from a trip to the gas chamber. Do you believe that infanticide is always immoral or that it is wrong unless necessary to prevent some greater evil? There are good reasons you haven't given the matter much thought and would have to work out the admissible exceptions to a fully general prohibition on the fly. But if that's so, there may be no fact of the matter as to how to best specify the belief you express when answering "yes" to "Is infanticide wrong?" As E. Durkheim (1912) argues, radically underspecified beliefs are often maintained by a meta-level belief in the "sacred" nature of their topic, a status that helps seal them off from critical investigation. Indeed, the intellectual conservatism of a society might be measured by the use of sanctity concepts by parents, teachers and other

authorities to limit inquiry into its "foundational" assumptions. In the most liberal societies, children are allowed to press for definitions of everything, and nothing is sacred in the intended sense. Socratic philosophy is the epitome of this kind of intellectual liberalism. After all, Socrates, that great "gadfly" of Western philosophy, was sentenced to death for pressing the authorities to define terms—like "piety" and "justice"—that could not be made precise without embarrassment to accepted institutions.[34]

Deference to expert usage of technical terms is not the primary source of vague conception. Though our thoughts gain precision as we mature (McClelland et al., 2009), politics, religion and morality are all sources of irremediable indeterminacy in belief.[35] For instance, normative philosophies of judicial practice differ on the importance they assign to discerning the intended meaning of a statute or opinion. Which beliefs were legislators and judges trying to articulate when drafting the legislation in question or writing up their opinions? And how much weight ought a judge give to the discernible communicative intentions of the framers of our constitution when she is trying to render judgment on a case to which they seem relevant?

These questions raise subtle philosophical issues. Surely, we are right to insist that people interpret us charitably. If I say something that seems inane, foolish or obviously false, you should ask for clarification. And if you can discern more than one possible meaning my utterance might be naturally taken to have, and you are genuinely unsure which of these propositions I intended to assert, charity again demands you consult with me throughout your attempts at disambiguation.[36] But what if the conversation is no longer a "live" one and the speaker is dead or is otherwise incapable of helping us decide between genuinely different, equally reasonable takes on what she has written? When we've arrived at this juncture, are we justified in dropping the hermeneutic enterprise altogether and narrowing our focus to the differing consequences that would attend our adopting the varying interpretations on offer?

This is a characteristically pragmatist stance to take. We aren't forced by nature or government to give interpretive fidelity paramount importance in such cases, so we should only do so when we judge that this is the best course "all things considered." As the pragmatic Justice Oliver Wendell Holmes Jr. so memorably wrote, "The life of the law has not been logic; it has been experience" (1881, 5). But a much more modest proposal is relevant to the pragmatic philosophy of mind advanced here: There is a conceptual limit on the entire enterprise of charitable interpretation. A justice's efforts to determine the beliefs behind a legal utterance or inscription are limited by genuinely

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[34] It is telling that in his rough draft of the U.S. Declaration of Independence, Jefferson called the equality of man a "sacred and undeniable" truth, and only later substituted the claim of "self-evidence" (White, 1978, 14).

[35] "As children grow, they cease to lump together concepts that older children (and adults) pull apart," McClelland et al. (2009, 1048).

[36] Charity makes more subtle demands when the speaker is prevented from properly conceptualizing her experience because of inadequacies in the language to which she's been exposed. For examples of these "hermeneutical injustices" see Nelson (1990), Code (1995) and Fricker (2007).

irresolvable indeterminacies in the thoughts she is attempting to discern. To think otherwise is to assume a pre-conceptual "given" that resembles our sensations and feelings in being non-linguistic in nature, but which is nevertheless already as sharply discriminated as the most exact verbal report. And this is a myth. There is no brain or mind code, with a unique, fully determinate interpretation, which might be discovered within a speaker's brain or mind. If we assume, as I do, that an animal's psychology is its neurology, we must also assume that a legislator's thoughts are themselves neurological phenomena. But a high-resolution picture of Thomas Jefferson's nervous system isn't going to help us disambiguate his declaration. The contents of his mind cannot be directly gleaned from its neurological constitution.

> How can one identify a population of neurons in a way that might identify it as the constituent of a sentence in the language of thought? How can one tell, amid the chaos of simultaneously firing neurons in the brain, which neurons are firing together to provide a vector coding? The only way to identify a population of neurons is to work out how particular tasks are being performed. That is to say, by working backward from the particular processing tasks being performed…But this, of course requires starting at the semantic level. (Bermudez, 2003, 30)

No doubt, there are times when a person has a more or less precise thought that she struggles to put into language. But articulation brings shape to our thoughts just as often as it reveals conceptual, logical or inferential structure already latent within them.[37]

Most philosophers are now willing to attribute beliefs to other animals, albeit beliefs with vague contents that admit of multiple incompatible specifications.[38] Even Ramsey, who narrowed his focus to the verbalized credences we might extract from a gambler's bets,

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[37] Thus Oliver Wendell Holmes Jr.—the famous pragmatist jurist—scoffed at the studied naïveté of the infamous Dred Scott decision rendered by the US Supreme Court in 1857, a judgment grounded in what Chief Justice R.B. Taney claimed to be the uniquely correct interpretation of our Constitution, "not only in the same words but with the same meaning and intent with which it spoke when it came from the hands of its framers." No doubt, the U.S. constitution and its early interpretations do evince a great deal of racism. It's not Taney's interpretation of the meaning and intent of the founders that is justly deplored, but his racist attempt to deploy originalism in defense of slavery. For a nuanced discussion see Finkleman (2013, 49-74); cf. Thayer (1981). Though the young Holmes was an abolitionist who broke with his father on this point, there is some question as to whether the younger Holmes, "succumbed to the increasingly legitimated racism that marked post-Reconstruction America," as suggested by E. A. Purcell Jr. (2002, 978). Cf. E.G. White's (1993) analysis.

[38] See Kenny (1989, 36-7), Glock (2000), Glock (2009) and Glock (2010). Bermudez initially claims complete determinacy essential to propositional thinking (2003, 39) but falls back to allowing "the type of localized indeterminacy that we are happy to accept in our ordinary social interactions" (2003, 198). I have also shifted view on this issue. I used to think that a person can't believe a claim when she knows that it's indeterminate between a true and false interpretation (Zimmerman, 2007). But I now see that this is a normative judgment. The classical conception of a proposition is derived from an *ideal* of inquiry. The concept we need for classical truth-functional logic is the concept of a fully interpreted claim, which is either true or false "full-stop" at the actual world.

acknowledged the precedence of animal thought to language. Ramsey considered a chicken's aversion to a species of caterpillar that made it sick.[39] Does the chicken believe the caterpillar is poisonous? Ruth Barcan Marcus, the ground breaking modal logician, balked at this attribution, but she was willing to allow a range of less sophisticated interpretations. "We surely cannot attribute to the chicken the belief that the caterpillar is *poisonous*," she writes, "but surely we will not go too far afield if we attribute the belief that the caterpillar is not for eating." The chicken's behavior and neurology may be utilized to argue that one conceptualization is more appropriate than another, but without the chicken's verbal participation, this is destined to remain an imprecise art, highly indeterminate at the limit.[40]

Human beliefs can be distinguished from one another as finely as the sentences we use to express and report them to one another.[41] As the logician Gottlob Frege (1848-1925) famously argued, the belief that Hesperus is the evening star differs from the belief that Phosphorus is the evening star insofar as ancient peoples accepted the first claim while denying the second. And this is so even though Hesperus just is Phosphorus. (In fact, "Hesperus" and "Phosphorus" both name the planet Venus rather than a star or two.) Similarly, someone who reads the collected works of Mark Twain can't help concluding that Mr. Twain was clever. But a reader might still deny that Samuel Clemens was

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[39] "In order to proceed further, we must now consider the mental factors in a belief. Their nature will depend on the sense in which we are using the ambiguous term belief: it is, for instance, possible to say that a chicken believes a certain sort of caterpillar to be poisonous, and mean by that merely that it abstains from eating such caterpillars on account of unpleasant experiences connected with them. The mental factors in such a belief would be parts of the chicken's behavior, which are somehow related to the objective factors, viz., the kind of caterpillars and poisonousness. An exact analysis of this relation would be very difficult, but it might well be held that in regard to this kind of belief the pragmatist view was correct, i.e. that the relation between the chicken's behavior and the objective factors was that the actions were such as to be useful if, and only if, the caterpillars were actually poisonous. Thus any actions for whose utility p is a necessary and sufficient condition might be called a belief that p, and so would be true if p, i.e. if they are useful. But without wishing to depreciate the importance of this kind of belief, it is not what I wish to discuss here. I prefer to deal with those beliefs which are expressed in words, or possibly images or other symbols, consciously asserted or denied; for these, in my view, are the most proper subject for logical criticism," Ramsey (1927, 159).

[40] Marcus continues, "The pre-verbal child hears familiar footsteps and believes a person known to her is approaching, a person who perhaps elicits behavior anticipatory of pleasure. It may not be the anticipated person, and when the child sees this, her behavior will mark the mistake. But must there be some linguistic obligato in the child to attribute to her a mistaken belief, or a disappointment? Must an agent have the concept of a mistake to be mistaken? The important kernel of truth in such a linguistic view is that arriving at a precise verbal description of another's beliefs and desires is difficult, and especially so when the attribution cannot be verbally confirmed by the subject" Marcus (1990, 135). M. Richard (2013) nicely describes how Marcus' dispositionalist analysis of belief prevents her from countenancing belief in impossibilities. So much the worse for (reductive) dispositionalist analyses of belief that attempt to make do without a concept of encoded information.

[41] Indeed, they can be distinguished even more finely than this when a person mistakenly believes that a single person's actions are attributable to two different people with the same name. See S. Kripke's (1979) "Paderewski puzzle."

wicked smart if she doesn't know that "Mark Twain" was Samuel Clemens' pen name.

It would be a mistake, however, to infer from this, as Rudolph Carnap (1891-1975) once did, that belief is invariably a matter of taking a sentence to express a truth (1956, 62).[42] Intellectualism is not the inevitable result of so-called "Frege cases." Consider, in this regard, R. Richard's tale of Rin Tin Wrong, a riff on one of Aesop's fables.

> Recall the fable of the dog who, carrying a piece of meat, crosses a stream and sees a dog holding a piece of meat. The dog wants the extra meat, snaps at it and, of course, loses the meat it's carrying. And since what the dog saw was its own reflection, it lost substance for shadow. In this case, the dog certainly knew, and thus believed, of itself and a piece M of meat, that it had M in its mouth. It also believed of itself and M, that it didn't have M in its mouth. (Richard, 2013, 412)

Rin Tin Wrong believes under a visual "mode of presentation" that a given object, a hunk of meat, is down below him in the stream, not in his mouth. But he also believes, under a tactile mode of presentation, of that same piece of meat, that it is securely grasped within his jaws. So we must distinguish between Rin Tin Wrong's visually generated beliefs about the meat in question from those of his beliefs about it that are generated by his tactile impressions. These beliefs are all representations: we can assess them for truth or accuracy or verisimilitude. And we can lament those occasions when they conflict with one another to tragic effect as in Aesop's tale of that species of woe that follows so closely upon greed. But the beliefs in question are non-linguistic in nature: they are neither assertions nor inner affirmations nor "judgings true." They are not "attempts" at arriving at the truth in any sense save the most metaphorical. And the perceptual mechanisms responsible for them were not "designed" at all, much less designed to track the truth. They are the results of eons of natural selection; not artificial selection. What mattered was their contribution to the survival and reproduction of the perceiving organism and her kin. Their accuracy played no role beyond this.

The intellectualist adopts an alternative proposal toward all this indeterminacy insofar as she treats our power to use assertions and self-reports to fix a determinate interpretation of our minds as essential to belief itself. Sentential language allows us to commit ourselves to some specifications of our thinking and reject others. And as we establish and retain our memories of these commitments, we form a new kind of mental state: a doxastic commitment or "belief" in the supposedly true and proper sense of that term. In the absence of assertion and self-report, we are left gesturing toward a range of differing interpretations without the possibility of deciding amongst them. According to the intellectualist, these incompletely conceptualized representations are decidedly second-class.[43]

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[42] See Carnap (1956). Cf. Russell (1971) and Kvart (1986).

[43] D. Dennett (1978) adopts the anti-intellectualist route and derides our efforts to articulate and accept true claims as a fetishistic hobby: the "collection of true sentences." I applaud Dennett for granting other animals beliefs in the "full and proper" sense of the term, but arguments for the truth of this claim gain nothing from the derogation of intellectual discourse and science. I have a similar aversion to Dennett's proposal to use "opinions" to denote all of our articulate beliefs, as

Surely, intellectualism contains deep and important insights. The effects of human language on cognitive development, cultural change and its transformation of the Earth's environment have been massive to behold (Clark, 1998). Perhaps humans advanced the technology, diplomacy, and rituals of their ancestor species before learning to communicate in words and sentences (Donald, 1991, Mithen, 1996). But before the invention of the kinds of language humans now speak, there was no way to discriminate between subtly different thoughts, no critical evaluation of their contents, no covenants, treaties, or currencies; no oral histories, lyrics, or poems; no mathematical proofs or algorithms, no formal languages, no computer language, and no computer technology. No planes, trains or automobiles. No motel rooms. No buttocks mistaken for pillows.[44]

And yet, we can acknowledge the power of sentential language, and do justice to its role in erecting the critical practices through which we define and refine our thinking, without deriding the relatively inarticulate beliefs of other animals as "impoverished." We have firmly seized control of the globe. Must we also belittle the minds of those we've marginalized?

> We must learn to identify with animals, to see ourselves in them and them in ourselves, in order to appreciate their plight and their prospects in a world that has been dominated by human beings simply because human beings can dominate the world—not because we have a right to do so. (Steiner, 2008, 137)

> 'You shall have dominion over the fish of the sea, and the birds of the air, and over the cattle, and over all the earth, and over every creeping thing that creeps upon the earth,' we're assured. Taken on its own, as it has been, this is a catastrophic formulation. You can go straight from Genesis 1 to the Monsanto boardroom, pausing for sightseeing picnics at the annihilation of the world's herd game, at some select dust bowls full of cucumbers grown in nitrate powder, at the *Torrey Canyon* wreck, at factory farms, at the edge of a retreating glacier, and at many other uplifting destinations. And you could take in, while on the road, the sport hunting of native peoples everywhere, since they're not made in the image of God, are they? (Foster, 2016, 25-6).

> We obviously attach immense importance to abstract thought and language (a penchant I am not about to mock while writing a book!), but in the larger scheme of things this is only one way to face the problem of survival. In sheer numbers and biomass, ants and termites may have done a better job than we have, focusing on tight coordination among colony members rather than individual thought. Each society operates like a self-organized mind, albeit one pitter-pattering around on thousands of tiny feet. There are many ways to process, organize and spread information, and it is only recently that science has become open-minded enough to treat all these different methods with wonder and amazement rather than dismissal and denial. (de Waal, 2016, 5).

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this term is associated with high degrees of subjectivity that do not mark the better results of scientific collaboration. Belief in global warming isn't mere opinion.

[44] RIP John Candy.

One might argue that these considerations have nothing to do with science, and that the nature of belief is a scientific question. One might question whether the moral consequences of adopting various taxonomies of the mind are in any way relevant to our choice among them. But this is a decidedly scientistic attitude that runs contrary to the pragmatic picture I am painting here (cf. Stich, 1979, 27-8 and Bortolotti, 2012, 45-6). The pragmatist and intellectualist taxonomies are both scientifically "workable." So why not expand the scope of our inquiry in search of a principled ground for choice?

6. Preliminary Conclusions

My own sense, as a reader, is that the intellectualists are unduly impressed by their admittedly prodigious expressive and critical prowess. Enthralled by the elegance and clarity of his words, Williams indulges his disdain for anything less exact. But instead of lauding the beliefs of sentence-wielding humans as beliefs in the "true and proper" sense, and referring to animal expectations and memories as beliefs in name alone, it would seem more natural (and kind) to include inarticulate beliefs within the general category and then frame hypotheses about the effect that human language has on the various states of mind that fall within this class. As O'Connor opines,

> The vast majority of our beliefs neither merit nor require formulation in language. Indeed, one of the commonest ways in which we are brought to recognize that we have held a particular belief is our surprise when experience fails to bear it out. The majority of our beliefs are implicit unformulated expectations. Moreover, we commonly attribute—and with good reason—beliefs to animals and infants and other creatures without linguistic skills. (O'Connor, 1968-9, 4)

And let us again hear from Bain.

> The primordial form of belief is expectation of some contingent future about to follow on our action…The humblest insect that has a fixed home, or a known resort for the supply of its wants, is gifted with the faculty of believing. Every new coincidence introduced into the routine of an animal's existence, and proceeded on in the accomplishment of its ends, is a new article of belief. (Bain, 1859/1865, 525-6)[45]

Though pragmatists deny that beliefs are essentially discursive, this doesn't prevent them

[45] Cf. Carruthers (2004, 216). We might compare Bain's ecumenicism with Marx's famous comments on the "operations" conducted by spiders. "A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality. And this subordination is no mere momentary act. Besides the exertion of bodily organs, the process demands that, during the whole operation, the workman's will be steadily in consonance with his purpose" (Marx, 1867/1967, 178). I have suggested above that many animals (e.g. wolves) have the "intentions in action" that Marx here reserves for human labor.

from theorizing about the dynamic interplay that exists between those of our beliefs that are poised for expression with assertion and their less well-defined brethren. Sentential language is something; it just isn't everything.

> It is now widely accepted that, even though language assists human thinking by providing categories and concepts, it is not the stuff of thought. We don't actually need language in order to think. (de Waal, 2016, 102)

If language isn't necessary for thought, it isn't necessary for belief in thought's conclusions. Since reasoning is (arguably) a series of thoughts culminating in a belief, language isn't necessary for reasoning, as Hume emphasized so long ago. Nor is language sufficient for thought. Importantly, reflection on racism and similar forms of socially unacceptable bias, suggests that spontaneous assertion of a proposition is insufficient for belief, even when the subject feels sincere when saying what she does. The test, again, is action, not just words and feelings.[46]

Even when it is briefly reviewed from a distance, the understanding of animal life emerging from contemporary ethology undermines the intellectualist's emphasis on sentences, utterances, inscriptions or propositions. We shouldn't limit our focus to discursive cognition or even its supposed analogs in the language of thought hypothesized by J. Fodor (1975).[47] A wolf's belief that she is sending a message to a group of coyotes by devouring their young isn't a "relation" to an inner symbol that means "I am sending a message to the coyotes by devouring their young." I mean, we might imagine a deranged human confederate of Oh-Six killing the coyotes on the she-wolf's behalf. This human coyote-eater might mutter "I am sending a message to those coyotes by devouring their young" as she executes this shocking act. And there are some similarities between the self-understanding guiding Oh-Six in the case Safina describes and the mind-set of this psychotic character. But these similarities are not well described by saying they both stand in the "belief relation" to one or more of the propositions we would use to describe what these two characters take themselves to be doing. We (author and reader) conceptualize their acts in similar ways. So it makes sense to say that we're gossiping about a single claim or proposition when we go on about the lady who ate those

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[46] See chapter 5 for further discussion. This is another reason to reject the de Sousa-Dennett-Frankish distinction between two types of belief. From a pragmatic perspective, assertions and dispositions to assert are not different kinds of belief, but defeasible evidence of the kind of belief humans share with other animals however vague and partial it may be.

[47] For views of animal cognition that emphasize differences between the linguistic or proto-linguistic modes of thought employed by humans when reasoning from their beliefs in contrast with the graphic, iconic, pictorial or otherwise distinct modes of cognition employed by other animals see Bermudez (2003), Camp (2007) Carruthers (2008) and Rescorla (2009). Camp provides a particularly effective response to Fodor's (1975) attempt to shop his Language of Thought hypothesis as the "only game in town." As she concludes, "Ultimately, any plausible cognitive system, including especially our own, is likely to be highly multi-modal: storing and manipulating information in the formats of multiple sensory modalities, and centralizing information in cartographic, diagrammatic, and sentential formats" (2007, 175). For a Fodorian reply see Blumson (September 2012). Cf. the "pragmatic" language of thought defended by Schneider (2011).

baby coyotes. But Oh-Six's frame of mind lacks this determinacy. She does not grasp the claims we're circulating. Still, she knows what she's doing. So she's guided by belief.

Even the broader category of communicative acts—and the states of mind responsible for them—looks too narrow to capture those self-determined, creative behaviors that animals plan and execute in largely non-communicative contexts (Bermudez, 2003; van Schaik et al., 2013). Perception, memory, feeling and emotion all conspire to guide an animal's purposive actions. It is reasonable to conjecture that these seemingly non-propositional states of mind actually *constitute* that animal's beliefs unless she takes steps to suppress them or ignore their promptings in an effort to assimilate information with which they conflict (cf. Glock, 2010). **The wild diversity in the contents of those beliefs you attributed to yourself when answering the questions posed in this book's preface is testament to this. You have beliefs about who is funny and who depressing, where you're located and where you've been, how to win friends and why you should look both ways before crossing the street. There is little evidence that these beliefs are stored in a common neural structure or "belief box," much less one associated with your comprehension of those sentences you would use to report or express your opinions to others. Belief is not limited to non-sensory, phenomenologically anemic, "amodal" representation. Instead, information is stored where it is formed** (Martin, 2009, Carruthers, 2015, Edmiston and Lupyan, 2017).[48]

It would seem, for these reasons, that Fodor's language of thought is an unstable halfway house between Descartes' intellectualism and the pragmatic approach to belief that emerged from philosophical reflection on Darwin's theory of evolution. While Bain's research program was rejected by the behaviorists, and ignored by those machine functionalists who took their zeal for artificial intelligence so far as to claim biology irrelevant to mentality, careful, relatively unbiased ethological observation is finally regaining its proper place within the study of the mind. And it strongly suggests that animal belief is much wider in scope and much more diverse in structure than even the Fodorians allow.

> The Newtonian system is no longer the sole paradigm of natural science. Man need not be degraded to a machine by being denied to be a ghost in a machine. He might, after all, be a sort of animal, namely a higher [sic] mammal. There has yet to be ventured the hazardous leap to the hypothesis that perhaps he is a man. (Ryle, 1949, 328)

[48] "The information about salient object properties—such as how they look, move, and are used, along with our affective associations to them—is stored in the neural systems that support perceiving, acting, and feeling. It is in this sense that conceptual knowledge is…grounded and embodied, " Martin (2009, 1041). For another instance we have, "Long term memory of what things look like depends on perceptual mechanisms," Edmiston and Lupyan (2017, 281). The general case is argued by Carruthers (2015).

7. When Did Belief First Evolve?

But just how deep and diverse is animal belief? A mammal—say a piglet—will begin life "rehearsing nursing" in utero (Keven and Akins, 2016; cf. Dominici, 2011). As she begins to suck, swallow and prepare for rooting, our prenatal piglet will initiate efforts that depend for their success on an environment appropriately fitted to their execution. Can we then say that the piglet expects to find, upon delivery, a proper target for her prenatal behavior, however instinctual her initial interactions with her mother (or bottle) turn out to be? Does the instinct in question itself constitute, entrain or arise from her belief that she will find something to suck and swallow upon delivery?

Some theorists say "yes." For example, Dennett (1981) has argued that phototropism is best explained by saying that plants believe that sunlight is coming from the direction toward which they grow (cf. van Duijn, Keijzer and Franken, 2006). Plants don't just react to the sun. "Leaf laminas reorient during the night toward sunrise, and are able to retain such anticipatory behavior for a number of days in the absence of solar tracking" (Garzón and Keijzer, 2009, 165). And this is not the only plant behavior to peak the interest of evolutionary psychologists. Darwin was sufficiently impressed by the intelligent growth of a plant's roots to compare them to an animal's brain.

> It is hardly an exaggeration to say that the tip of the radicle thus endowed, and having the power of directing the movements of the adjoining parts, acts like the brain of one of the lower animals; the brain being seated within the anterior end of the body, receiving impressions from the sense-organs, and directing the several movements. (Darwin, 1880, 574; cf. Garzón and Keijzer, 2009, 161).

The plant's roots navigate obstacles as they tunnel for water, and its branches stretch themselves out in search of the sun. The plant's biochemistry orchestrates its endeavors in these directions. Mightn't this biochemistry support an alien from of consciousness? The hypothesis excites the imagination.

Consider, on this score, recent research done at the University of Missouri showing how the Arabidopsis plant discriminates the precise pattern of vibrations that caterpillars make when eating its leaves. In response to these tickling marauders, the Arabidopsis produces mustard oil to defend its leafy integrity. The headlines announcing this discovery are great. The *Farm Journal* reads, "Plants Can Hear Pests Attack." *Business Week* concludes, "Researchers Have Found that Plants Know When They're Being Eaten."[49] Nor are agents of the popular press the only purveyors of provocatively promiscuous attributions of cognitive capacity. Several of our leading philosophers of mind—Thomas Nagel, Galen Strawson and David Chalmers—take seriously the possibility that inorganic

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[49] See http://www.businessinsider.com/plants-know-they-are-being-eaten-2014-10, http://modernfarmer.com/2014/10/plants-can-tell-theyre-eaten/ http://www.agweb.com/article/plants-can-hear-pests-attack/ and http://www.newyorker.com/magazine/2013/12/23/the-intelligent-plant.

matter has sentience of some kind.[50]

One guiding idea here, embraced by Dennett in a great deal of his writing on this subject, is that "belief" is an instrumentalist or "interpretationist" concept. Roughly speaking, an organism or "system" believes something just in case it can be fruitfully interpreted as believing that thing, where the system's internal structure places no independent constraints on our efforts to determine which interpretations are fruitful and which are not. There is a sense in which the neural structure that realizes the piglet's rooting instinct can be fruitfully interpreted as the belief that she will find an udder or nipple or what I have been calling an "appropriate target" for her behavior upon delivery. The piglet therein has this belief, however greatly it differs in biological and experiential terms from a mature adult's conviction that the earth revolves around the sun.[51]

In contrast, the pragmatic definition I proposed above issues a negative answer. "Belief" is appropriately limited in its application to the information that guides relatively attentive, controlled action, and the prenatal piglet has not yet acquired the agency requisite for this form of activity. She must first interact with her mother (or bottle) and use perceptual feedback gleaned from her initial endeavors to gain control over her feeding before we can say that she is bringing beliefs to bear on the task.[52] After she has gained some level of mastery over the process, she can then "outsource" it to some extent—dividing her attention—as she would were she to continue to nurse while fending off siblings competing for the relevant resource.

> The act of Sucking is generally said to be purely reflex in the newborn infant. The act of swallowing remains reflex to the last. But…the giving over sucking, when there is no longer relish, is volition in the germ...whatever be the exact moment when a present feeling first influences a present action, that is the moment of the birth of volition. We reach this point by inward growth. Having reached it, the education of the will is thenceforth a process actually begun, and ready for

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[50] Dennett (1981), Nagel (1979, 181-95), Strawson (2009), and Chalmers (2015). Cf. Bruntrup and Jaskolla (2016). Contemporary panpsychism is summarily dismissed by Kornblith (2012, 50-1).

[51] Where does this stop? Though bacteria lack nervous systems, they contain a two-component signal transduction system mediating between the chemical stimuli to which they are exposed and their motor responses to these stimuli: e.g. swimming or tumbling (Taylor, 2004). We might then consider the idea that the five hundred (or more) species of bacteria said to be living in our guts interact with one another on the basis of their beliefs in much the way that we interact with one another on the basis of ours (van Dujin, Keijzer and Franken, 2006). Are we responsible for the denizens of our inner bacterial ecosystems? Is inessential use of antibiotics immoral? Is it comparable to killing animals for sport? Can you entertain the possibility of these tiny intestinal agents without wondering, with Spinoza, whether the universe is itself an organism whose "gut" we modify?

[52] It has long be known that human infants copy mouth movements within the first hour of birth. See Metzoff and Moore (1997). But researchers continue to debate whether this is intentional, controlled activity, or the kind of resonance behavior displayed by flocks of birds and schools of fish, which coordinate their movements in what is supposed to be a relatively automatic fashion. See Jeannerod (2006, 122-4).

improvement. (Bain, 1859/1865, 320-1)

8. Neo-Behaviorism

There are, of course, other options beyond intellectualism, pragmatism and panpsychism. For instance, though behaviorism has long lost its grip on social science, some contemporary philosophers follow Gilbert Ryle (1949/2012) in equating belief with a "multi-track" disposition to move and feel certain ways given certain stimuli (e.g., Schwitzgebel, 2002). These are just *quasi*-behaviorists: they assure us they believe in the existence and explanatory importance of sensations, feelings and other "phenomenally conscious" states. They do not limit their theorizing to an animal's movements through space and its dispositions to such. But those who have embraced the neo-behaviorist label view beliefs and intentions as "theoretical posits," and they deny the need to include concepts of attention and self-control in their analyses. And in this they depart from Bain and the pragmatists he inspired, who all insisted that controlled action must be distinguished from automatic reaction in the analysis of belief.

> [Readiness] to act in a certain way under given circumstances and when actuated by a given motive is a habit; and a deliberate, or self-controlled, habit is precisely a belief. (Peirce, 1931-5, 5.480, 330)

The pragmatists would also quarrel with the neo-behaviorist focus on sensory, affective and motor *dispositions*, which passively await some triggering stimulus. As Bain emphasized, we are born doing things of our own accord. Unless you're a teenager (or depressed) you don't need an argument to get you out of bed in the morning. You awake in action, opening your eyes or deliberately keeping them shut.

> We are active beings from the start. (Dewey, 1896, 239)

Indeed, even if you are a languishing teen, you're probably doing *something* while you wile away the morning hours in the sack. (Snicker, snicker.) As Oscar Wilde noted with characteristic aplomb, "Doing nothing at all is the most difficult thing in the world, the most difficult and the most intellectual" (1891/2007, 174). As those skilled in meditation can attest, we must work hard to refrain from moving and thinking. We are not limited to responses, much less rigid reactions to stimuli arriving from without (Hampshire, 1959, 47-8). Our beliefs can be gleaned from our impact on history, not its impact on us.

Happily, after its long, cold behaviorist winter, the academy is gradually recovering this pragmatic understanding of "cognition."

> Behaviorism … presented animals as passive, whereas I view them as seeking, wanting and striving. True, their behavior changes based on its consequences, but they never act randomly or accidentally to begin with. Let's take the dog and her ball. Throw a ball at a puppy, and she will go after it like an eager predator. The more she learns about prey and their escape tactics—or about you and your fake throws—the better a hunter or fetcher she will become. But still, at the root of

> everything is her immense enthusiasm for the pursuit, which takes her through shrubs, into water, and sometimes through glass doors. (de Waal, 2016, 30-1)

Bain was way ahead of this emphasis on our "enthusiasm for the pursuit." Our initial actions are not responses at all, but the results of our "spontaneous passing through the usual stages into the voluntary" (1859/1865, 325).

> Movement precedes sensation, and is at the outset independent of any stimulus from without; and that action is a more intimate and inseparable property of our constitution than any of our sensations…the facts of the case are so strong as not to be easily gainsaid. Perhaps the most striking are those furnished by the initial movements of infancy, and the restless activity of early years generally, and of the young and active members of the brute creation. The bustling and bounding spirit of exercise, in these instances, is out of all proportion to any outward stimulants, and can be accounted for only by a central fire that needs no stirring from without…We see this well illustrated in the daily experience of children, whose exuberance is manifested at their first awakening in the morning, after meals, and on release from lessons. On all such occasions, we see evidently nothing else than the discharge of an accumulated store of inward energy. It is not any particular incitement from without that is the cause of all this vehemence. The effect is explosive, like a shot, or the bursting of a floodgate. It would not be difficult at those moments, indeed it would be the natural course of events, to perform some great feat. The boy let out from school, incontinently leaps over ditches, breaks down barriers, and displaces heavy bodies, and should these operations be required at the moment, no special or extraordinary stimulus would be needed to bring the requisite power into play. (Bain, 1859/1865, 297-305; cf. 12)

Bain defines belief in terms of the paths we blaze with this "central fire." In favorable conditions, our initial movements are rewarded with pleasure and nourishment and comfort and love. We strive to sustain these goods, improve upon them, and guard against the pain, hunger and illness that invariably threaten whatever happiness we've secured. What we believe is whatever information we bring to bear in these endeavors. "What we believe, we act upon" (Bain, 1868/1884, 372).[53]

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[53] "In the primitive aspect of volition, which also continues to be exemplified through the whole of life, an action once begun by spontaneous accident is maintained, when it sensibly alleviates a pain, or nurses a pleasure. Here there is no place for belief, any more than for plot-interest, deliberation, resolution or desire. The feeling, that is, the end, prompts at once the suitable exercise of the voluntary organs, and that is all. In this primitive and elementary fact, we have the foundation of the most complicated forms of voluntary procedure, but as yet we have no indication of those subsequent developments. The process in that rudimentary stage might be termed reflex, although differing in almost vital consideration from the reflex actions commonly recognized, namely the presence of consciousness as an essential link of the sequence. There is an instantaneous response to the state of pleasure or pain, in the shape of some voluntary movement modifying, or sustaining that state, according as the case may be. Circumstances arise, however, to prevent this immediateness of response, or to interpose delay between the occurrence of the feeling that is the motive and the movements that answer to it…the very same condition of

9. Distinguishing Belief from Desire

But then how is belief to be distinguished from desire? According to the pragmatic analysis, we first form beliefs by paying attention to our mothers or caregivers and doing what we can to control or guide our rather clumsy attempts to nurse from them or the bottles of formula they supply. The information that guides us in these most basic actions is the very first information we believe. And the same is indeed true of our first desires: the needs we feel for nourishment, comfort and the like. The attribution to the infant of a "desire to nurse" grows in propriety as she begins to train her attention on her caregivers and channels her energies towards securing a satisfying engagement with them. So doesn't Bain's definition classify these desires as "beliefs"? To avoid this paradoxical conclusion, must we join the intellectualists in augmenting Bain's definition with some reference to truth?[54]

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suspense is necessary to the manifestation of Belief. If every pain could be met by an appropriate movement for relieving it on the instant, and the same with pleasure, we might still talk of doing or action, but there would be no place for believing" (Bain, 1859/1865, 524-5; cf. Bain, 1859/1865, 507 and Bain, 1888, 505-6). Note that the ability to generate activity endogenously is part of some contemporary definitions of "nervous system." See, e.g., Lichtneckert and Reichert (2007).

[54] I thank an anonymous referee for Oxford University Press for pressing this objection, but I must comment here on the inaccuracy inherent in the common practice of labeling this concern "Humean" in orientation. According to Hume, beliefs are "forceful and vivacious" ideas. His paradigms are memories and expectations: ideas that have a characteristic experiential quality (vivacity) and a heavy influence on subsequent thought, experience and behavior (force). Hume also countenances "perfect ideas" which lack force and vivacity, and are what psychologists would now call semantic or declarative memories: mere acceptance of some claim separable from any accompanying imagery and direct behavioral potential beyond assertion and affirmation. And Hume's category of "impressions" is meant to include sensations (in all the sensory modalities) and composites of sensations and ideas, which composites Hume called "impressions of reflection": desires, emotions, plans and passions of various other sorts. In contrast with Hume, the analytic philosophers who cleanly distinguish beliefs from desires treat desires (or preferences) as "propositional attitudes." You can believe that you have a cold glass of milk or desire that you have one, and since the "propositional content" of these states of mind is the same, analytic philosophers of mind typically posit differing "attitudes"—marked by "belief" and "desire"—to label their functional or causal differences, this being comparable to the "force" of which Hume spoke. (Most analytic philosophers deem inessential the phenomenological differences Hume marked with "vivacity.") The most popular proposal is to liken a difference in attitude to two different "boxes" which both feature a single language of thought sentence: e.g. "I have a glass of milk" (Fodor, 1975). When "I have a glass of milk" is written in a being's belief box, she is "satisfied" in some non-phenomenological sense of this term; when it is instead written in her desire box, she initiates a search for the stuff. Note that this way of thinking makes it seem as though desires *are* representations—i.e. language of thought sentences—albeit with "satisfaction conditions" rather than conditions of truth or accuracy. And this marks a substantive departure from Hume's taxonomy, which instead treats desires as impressions "annexed" to ideas: the idea being a representation of the desired state of affairs (e.g. my having milk) and the impression being the forceful and vivacious attraction that has become associated with this idea. Hume doesn't similarly treat belief as an impression—e.g. a feeling of conviction—that is "annexed" to an idea representing what is believed, though he famously agonized over this

No, the retreat to intellectualism is not forced upon us, as the equation of certain kinds of desire with certain kinds of belief has an illustrious past and substantial current following. As the medieval philosophers emphasized, we typically desire under the "guise of the good" (McCann, 2011). When it seems appropriate to describe the infant as "wanting to nurse" it would seem equally appropriate to describe her as representing this activity as pleasurable or nourishing or *good* for her in some way (cf. Proust, 2015).[55] And when it seems right to say that she has developed an aversion to her siblings' interruptions, it will consequently seem right to describe her as representing these rude breaks from her meals as annoying, or detrimental, or as "bad" in some shape or form. Desire is no more a "mere" behavioral disposition than is belief (Quinn, 1993). Desire is as much a frame of mind—as much a representation of the world and one's place in it—as any thing we discriminate in folk psychological discourse.

Is the desire to nurse then a "confused" representation of value, as Plato's Socrates once proposed? Does its perfection await the child's mastery of language or the tools she needs to conceptualize the object of her affections? Hardly. The positive correlation between obtaining nourishment and surviving to reproduce provides no small basis on which to grant these distinctively mammalian conative representations a positive review. In desiring to nurse, the piglet or infant child believes to be good for her what is in fact good for her in a biological sense of that term. In developing an aversion to the interruptions of her siblings, the little beast comes to believe to be bad for her what is in fact bad for her in this same biological sense. And though we come to want much of what is biologically detrimental or "bad" for us in the varying (non-biological) senses people come to attach to this term, our mature, more fully articulated desires can still be described as roughly accurate representations of the varying species of value we learn to differentiate.

> Questions of ultimate ends do not admit of proof, in the ordinary acceptation of the term…the sole evidence it is possible to produce that anything is desirable, is that people do actually desire it. (Mill, 1863/2002, 269-70)

In this way, the pragmatic scheme nicely captures the kind of conflict we experience when we struggle to act prudently. The desire for late night ice cream represents to be good for you what you know to be bad. This is why you feel pressure to rationalize taking another scoop, if you are not prepared to pass on the carton. In wanting it, you construe it as delicious, and it's hard to fully discount this consideration as the evening wears on.

When a person pursues some end while acting in a controlled, attentive way, we can conclude that she desires that state of affairs in a certain distinctive sense: we mark this by saying that she believes it to be good in some respect or other. But if we suppose that

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decision in his Treatise's first appendix. As far as the history goes, I join the pragmatists in thinking Bain's definition an improvement over Hume's, but I break with many in the analytic tradition (e.g. Brandom, 2009) in thinking reductive functionalism a backward step.

[55] Though Proust provides an attractive account of the content of the feelings she characterizes as "affordance representations," she assumes the traditional propositional attitude analysis of belief.

she instinctively responds to the activity or object in a positive fashion—that she is immediately attracted to it to some degree—but that she avoids it when in full possession of her faculties, we will then say she desires it in a sense that does not obviously entail evaluative belief. She will have a mere appetite for it, or a "passion" she must control in service of her "reason." The examples of this most commonly cited by the philosophical and religious authorities are lust, a taste for sugar, overindulgence in drugs and alcohol, and a similar thirst for money, prestige and power over others. Not that you can buy a shot of tequila, open a package of donuts or dominate a conversation without controlling your words and deeds. But the mind of a conflicted profligate fluctuates between habitual use, events that bring to mind a vivid understanding of its costs to health and family, resolutions to reform, and a strongly felt attraction (or "craving") for the object of experience. Pragmatism endorses this entirely commonplace description of our entirely commonplace struggles to be good or prudent. Beliefs are the representations that guide our deliberate movements in body and mind. Some desires are beliefs of this sort. Some are not.[56]

[56] The critical reader might compare and contrast this traditional distinction between evaluative beliefs and "mere" desires with H. Frankfurt's (1971) distinction between first and second-order volitions, T. Nagel's (1979) distinction between motivated and unmotivated desires, and a number of other proposals.