

## Chapter Two

### A Defense of the View that Infants and Animals Have Beliefs

We normally treat infants and non-human animals as though they have beliefs and desires. We predict and explain their actions on the basis of what we think they want and what they know about how to get the things they want. We think of them as sometimes disappointed, surprised, afraid, and so forth, as a result of their hopes and expectations about the world. We describe them with character traits that seem to presuppose their possession of beliefs and desires -- as sneaky, clever, or ill-tempered, for example. A number of developmental psychologists and cognitive ethologists have allowed such belief-desire terminology to come into their scientific work. For those with a philosophical turn of mind the question naturally arises, is it true to say of such creatures that they have this range of cognitive states, or is it merely a convenient (but perhaps misleading) way of talking?

In this chapter I will defend the view that we are not merely speaking loosely or metaphorically when we attribute beliefs to infants and animals. (I think a similar argument can be made with respect to desires and the other so-called "propositional attitudes," but I shall focus my attention solely upon belief.) Developmental psychologists and those who study some of the more

cognitively sophisticated mammals such as dogs and apes, should feel no compunction, I think, in using these terms from folk psychology to describe the cognitive lives of the creatures they study. Babies and Saint Bernards have beliefs.

Not all philosophers share my view on the matter, of course. Descartes held that animals had no souls and hence no beliefs (1637/1980). Paul Churchland (1981) argues that *nobody* has beliefs, and so, of course, infants and animals don't. I will not discuss Descartes' or Churchland's arguments in any detail. Both require the acceptance of larger pictures that I will simply suppose the reader to reject. Descartes' position depends upon a particular dualist view of the soul and the mind. Churchland's position depends upon his rejection of "folk psychology." If the reader is attached to either of these views, what I say in this chapter will no doubt seem beside the point.

I take my primary opponent on the subject of infant and animal belief to be Donald Davidson. I focus on infant and animal *belief* here because Davidson does -- but, like Davidson, I think belief and desire must come as a pair. It would hardly make sense to preserve one half of this duo while rejecting the other.

Davidson has two arguments against infant and animal belief, both of which appeared originally in "Thought and Talk" (1975/1984) and were later refined in "Rational Animals" (1982b). I devote one section each to rebutting these arguments and a third section to providing my own positive argument on behalf of

infant and animal belief. I devote so much attention to Davidson for two reasons. First, Davidson's papers are probably the most influential contemporary attacks on infant and animal belief, so it is worth examining them to see what attraction they hold. And second, it is my hope that once Davidson's arguments are shown to be faulty, the reader will naturally be drawn to the view I defend, and a large part of the work will already be done for me. Nothing will remain to stand in the way of our natural inclination to take seriously the attribution of beliefs, desires, and all the usual organs of folk psychology to infants and animals.

Before heading into the main body of this chapter, I would like to give the reader a rough sense of how I see the debate over whether infants and animals have beliefs. In my view, the question has two components which are sometimes not clearly distinguished. First, what are the conditions under which a creature may truly be said to have beliefs? Second, do real, living gorillas and six-month-olds satisfy these conditions? Davidson's attention is properly (for a philosopher) focussed on the first of these two questions, as mine will be, although the second question cannot go completely without notice. Davidson's hope, and mine, is that given our respective answers to the first question, the answer to the second will be obvious and require no subtle empirical research.

But what kind of question is the first question, the question about the conditions under which a creature may be said to have beliefs? Perhaps this question will strike some philosophers as

a request for the conceptual analysis of a piece of ordinary language, the word 'belief,' to be answered with a set of necessary and sufficient conditions which capture our ordinary intuitions about the extension of the term. I do not see the matter this way.

To begin with, the word 'belief' as it has been used by philosophers of mind and cognitive psychologists is a technical term, and its usage may even be somewhat at variance with ordinary usage (although many philosophers would deny it). I have observed, for example, that people seem to be reluctant to use the word 'believe' or 'belief' except in contexts of discussing deeply held, controversial convictions, such as religious or political convictions, and in contexts of uncertainty or disagreement. Possibly 'I believe' is also used simply to indicate deference (as when the ticket taker says "I believe your seat is in the third row, sir"). The verb 'think' in ordinary English may come closer to the philosopher's sense of 'believe,' but there is no good nominal counterpart, since the word 'thought' has a rather different sense from the philosopher's 'belief.'<sup>1</sup>

Facts about ordinary usage aside, there seems to me no good reason *not* to treat the word 'belief' as a technical term for philosophers of mind and cognitive psychologists and thus give it whatever meaning and use best suits our purposes as practitioners of these disciplines. Of course, if the meaning we give it is

too much at variance with previous meanings, people are apt to be confused by our use of the term, so there is a good practical reason not to stray too far from what others have said. But, as with any decision about the use of a technical term, the decision about the use of the word 'belief' is a *practical decision*, guided by *practical considerations*.

It is in this light that I wish to view the question of what the conditions are under which it would be appropriate to say that a creature has beliefs. It is my position that for most of the purposes to which philosophers of mind and cognitive psychologists may wish to employ the word 'belief,' it makes sense to regard infants and animals as having beliefs. This is a strong claim: Not only do I think that infants and animals really do have beliefs in the sense of 'belief' I endorse (and will defend in Chapter Six), but I also think that any attempt to redefine the term 'belief' so as to escape this conclusion is apt to fail as a general-purpose definition of the term.

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<sup>1</sup> Nelson (1983) also argues that ordinary usage of the word "belief" implies a kind of "two-mindedness" about matters -- an implication absent from most philosophers' accounts of belief and its relation to action.

## **1. Faults in Davidson's First Argument Against Belief Without Language**

Davidson claims that infants and animals, lacking language, cannot have beliefs. He defends this view primarily in two articles, "Thought and Talk" (1975/1984) and "Rational Animals" (1982b). The two papers are similar in structure. Both offer a preliminary argument and then proceed to a shorter main argument. Both the preliminary and the main arguments remain essentially the same between the two articles, although the later article contains a few twists not present in the earlier paper. In this section I will examine and criticize Davidson's first, preliminary argument as it appears in the two papers.

Both of Davidson's arguments work on the presupposition that infants and animals are incapable of language. Some have attacked Davidson on just this point. Vicki Hearne (1982), for example, has argued that well-trained dogs and horses do have language. I say "fetch!" and the dog fetches. I say "stay!" and the dog stays. The dog and I communicate with each other by means of verbal commands on my part and actions and postures on both our parts. Even more has been claimed for signing apes, such as Washoe and Koko, who seem to be capable of producing and understanding a couple hundred simplified signs from American Sign Language and who may even be able to put them together in novel, meaningful ways.<sup>2</sup>

I will not pursue this particular line of attack against Davidson. First of all, I am not sure it can easily be adapted

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<sup>2</sup> Savage-Rumbaugh (1986) provides a good discussion of this topic.

to apply to very young infants, whose communicative capacity seems to be somewhat less than that of a signing ape or a well-trained dog, but who, nonetheless, I want to say have beliefs. Additionally, there seems to be a perfectly good sense of 'language' on which it is fair to say that dogs and infants before they produce their first words do not have language, and on which one may even be able to raise doubts about the signing apes. In any case, I am willing to grant Davidson the point. My interest is not in debating over what ought to count as an instance of language use.

In both "Thought and Talk" and "Rational Animals," Davidson begins his argument with a retelling of Norman Malcolm's (1973) story about a certain dog -- I will call him "Ajax," after my neighbor's dog. The story is intended by Malcolm to show that dogs "think."<sup>3</sup> Here is the story.

Suppose our dog is chasing the neighbor's cat. The latter runs full tilt toward the oak tree, but suddenly swerves at the last moment and disappears up a nearby maple. The dog doesn't see this maneuver and on arriving at the oak tree he rears up on his hind feet, paws at the trunk as if trying to scale it, and barks excitedly into the branches above. We who observe this whole episode from a window say, "He thinks that the cat went up that oak tree" (1973, p. 13).

Malcolm seems to be happy with an ordinary language argument for the view that dogs think, but Davidson is willing to consider the possibility that ordinary language leads us astray in this case. Davidson's argument begins with the observation that, presumably,

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<sup>3</sup> Although Davidson represents Malcolm as intending to use the story to show that dogs have beliefs, Malcolm is actually quite careful to phrase his claim as a claim that dogs "think," which he distinguishes from "having thoughts." The latter, Malcolm argues, is not possible without language. It is not clear from this story what Malcolm would say

if Ajax has a belief, it must be a belief with some specific content or other. The question arises, then, what precisely this content is. Consider a variety of expressions that might be taken to refer to the oak tree in question, such as 'the oldest tree in sight,' 'the only tree eight meters from the house,' or 'the tree planted by Aunt Janet.' Davidson assumes, and I think it is plausible to assume, that the belief that the cat ran up the oldest tree in sight is not the same as the belief that the cat ran up the tree planted by Aunt Janet. A person could easily believe one without believing the other. In general, it seems plausible to suppose that two sentences may describe different beliefs even if those sentences differ only in having different ways of picking out the same referents.

It is important to make this point carefully. Consider the following sentences:

- (1.) The cat went up the oldest tree in sight.
- (2.) Mary believes the cat went up the oldest tree in sight.
- (3.) The cat went up the tree planted by Aunt Janet.
- (4.) Mary believes the cat went up the tree planted by Aunt Janet.

The truth value of the first sentence cannot be changed by substituting for 'the oldest tree in sight' a term that picks out the same referent as that term -- in our example, 'the tree planted by Aunt Janet.' Given that 'the oldest tree in sight'

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about beliefs. As far as I can tell, Davidson uses "think" and "believe" more or less interchangeably.



refers to the same tree as 'the tree planted by Aunt Janet,' sentences (1.) and (3.) must have the same truth value. Sentences such as these, in which the substitution of co-referring terms is truth-preserving, are usually called *referentially transparent*.

Sentences (2.) and (4.), on the other hand, are *referentially opaque*. Truth value is not always preserved under substitution of co-referring expressions. Even if it is the case that 'the oldest tree in sight' picks out the same tree as 'the tree planted by Aunt Janet,' sentence (2.) may be true while sentence (4.) is false, or vice versa -- if, for example, Mary does not know that the tree in question was planted by Aunt Janet.

This fact about belief ascriptions, of course, mirrors a fact about the beliefs being ascribed. Beliefs seem to have very specific contents: Mary's belief is definitely that the cat went up the oldest tree in sight, not that the cat went up the tree planted by Aunt Janet. Searle (1992) calls this feature of beliefs *aspectual shape*.

If we accept (as I think we should) that belief attribution sentences exhibit referential opacity and that beliefs themselves have aspectual shape, it begins to look like a tricky matter to determine exactly what it is our dog Ajax believes. Certainly it seems a mistake to ascribe to him the belief that the cat went up the oldest tree in sight, since it is doubtful that dogs do much in the way of assessing tree age. Is it even right to say that he believes the cat went up the *tree*? What do dogs know about

trees? Davidson holds that in order to have the belief that the cat went up the tree, a dog (or any creature) must be able to believe of objects *that* they are trees -- and this latter kind of belief requires that dogs know all kinds of things about trees. Examples Davidson gives include: that they are growing things, that they need soil and water, that they have leaves or needles, that they burn (1982b, p. 320). This idea that one belief is not possible without a network of other beliefs to give the first belief content Davidson sometimes calls "holism."

Davidson's argument, then, is essentially the following.<sup>4</sup> If we wish intelligibly to ascribe a belief to a dog, we must decide first exactly *what* belief to ascribe. But to determine exactly what belief is appropriate to ascribe to a dog, we must make judgments about a wide range of other beliefs the dog might be taken to have. Soon we will find ourselves in dubious territory, forced to make decisions about whether, for example, Ajax believes that trees need soil to grow -- decisions it seems we could have no rational basis to make. Without a language, Davidson thinks, a creature's behavior cannot have the kind of richness and diversity necessary to support the required judgments. There's just no way to pick out, and quite probably no real fact of the matter, which among a set of sentences with co-referential terms are the sentences that may accurately be said to capture the creature's beliefs. Something is amiss,

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<sup>4</sup> Heil (1992) gives a clear and helpful exposition of it.

then, in the project of trying to ascribe beliefs to such creatures in the first place.<sup>5</sup>

I have several criticisms of Davidson's first argument as presented here. First, it is not clear exactly what its conclusion is supposed to be. In "Thought and Talk," Davidson admits that

At best what we have shown, or claimed, is that unless there is behavior that can be interpreted as speech, the evidence will not be adequate to justify the fine distinctions we are used to making in the attribution of thoughts. If we persist in attributing desires, beliefs, or other attitudes under these conditions, our attributions and consequent explanations of actions will be seriously underdetermined in that many alternative systems of attribution, many alternative explanations, will be equally justified by the available data (1975/1984, p. 164).

In his later article, however, Davidson seems to draw a much stronger conclusion from what is essentially the same argument:

From what has been said about the dependence of beliefs on other beliefs, and of other propositional attitudes on beliefs, it is clear that a very complex pattern of behavior must be observed to justify the attribution of a single thought. Or, more accurately, there has to be good reason to believe there is such a complex pattern of behavior. *And unless there is actually such a complex pattern of behavior, there is no thought.* (1982b, p. 322, my italics).

The stronger conclusion put forward at the end of the second quote is clearly not warranted on the basis of the argument at hand. Davidson may in fact recognize this, since he is at pains to stress that the argument presented here is not his main argument. Perhaps he does not intend the italicized claim to be read as the conclusion of his first argument but rather as an

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<sup>5</sup> Stich (1979) puts forward an argument along similar lines.

anticipation of the conclusion of his second argument. If so, the sentence is rather misleadingly placed.

Davidson is right to be restrained in his earlier appraisal of the argument. At best, what his argument shows is that we cannot be justified in attributing particular beliefs to animals, not that animals in fact lack beliefs entirely. Searle (1994) makes this point in his criticism of Davidson, and even Heil (1992), who wants to preserve as much of the Davidsonian picture as possible, feels compelled to admit this weakness. In addition to the obvious slip from "we cannot be justified in believing p" to "it is not the case that p," it is worth pointing out that it does not follow from the claim that we cannot ascribe any particular belief to an animal that we cannot justifiably claim of the animal that it has beliefs (though we know not which particular ones). To make this latter slip would be to act like the fellow who, when confronted with an ordinary gumball machine, reasons as follows: I can never be justified in thinking that a red gumball will come out of the machine (since only 25% of the gumballs are red), or in thinking that a green gumball will, or a blue one. Therefore, I can never be justified in thinking that the machine distributes gumballs at all. This fellow then walks away from the gumball machine, declaring it a waste of money. Davidson, if he means to draw the strong conclusion that animals do not have beliefs on the basis of the argument presented above, makes both the errors described.

However, even if Davidson were only right in his weaker claim that we could never be justified in attributing particular

beliefs to animals, that would be a major blow to those who wish to defend the idea of belief without language. Presumably, most of the defenders of this view would hold -- certainly I hold -- that we can in fact ascribe particular beliefs to creatures without language. Or, to put it more precisely, we can do so to some extent: humans and non-human animals are not qualitatively different in this regard. It is not the case that we can only be justified in attributing to animals only hopelessly rough, vague, and indeterminate beliefs -- beliefs without determinate aspectual shape -- while we can make human belief ascriptions with crystalline precision.<sup>6</sup>

Consider the following case. Mary, the owner of Ajax, is in the backyard with her dog and, like her dog, has observed the aforementioned cat. Imagine that we have learned from conversation with Mary that she is an avid hater of cats and is doing her best to encourage Ajax to chase them mightily so they will not plague her backyard. Now we have witnessed the cat running toward the oak, and we have witnessed its last-minute swerve up the maple. We see Ajax barking up the oak tree and clawing at its bark. We also see Mary peering up into the tree, pointing and saying, "Yes, Ajax! He went up that way! We'll teach that trespassing pest never to enter our yard again, won't we?" It seems quite natural to say that Mary, like Ajax, thinks the cat is in the tree.

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<sup>6</sup> Dennett (1987), Routley (1981), and Smith (1982) each in different ways argue a similar point.

I wouldn't want to deny this. Notice, however, that the same kinds of questions may be raised here about Mary as were raised earlier about her pet. Is it better to characterize Mary's belief as a belief that the cat went up the tree or as a belief that an annoying pest went up the tree? Does Mary believe that the cat went up the only deciduous tree in her yard? Does she believe that it went up the only object on the block that was a sapling in 1908? Or that a creature who should not be in her backyard is probably higher up than it wants to be? Does she believe all these things, or just some of them, and which ones? And how can we tell? If we apply the same standards to Mary that Davidson wants us to apply to her dog, we may find ourselves committed to the position that *neither* of them has beliefs. In Mary's case, as in Ajax's, the evidence available to us is clearly not sufficient to warrant confidence about exactly what aspectual shapes her beliefs have regarding the events at hand. If Davidson requires that we withhold judgment about the content Ajax's beliefs on this basis, it seems we must also be forced to withhold judgment about the content Mary's beliefs.

It might be thought that there are crucial differences between Ajax and Mary that I have missed, which warrant us in ascribing particular beliefs in the one case but not in the other. One might argue, for instance, that Mary has the *concept* of a tree and Ajax does not, and that this difference is somehow key. I do not see this as a crucial difference for belief ascription, however, for two reasons. First, we often attribute

beliefs to people containing concepts they do not have, especially when those concepts are used to determine reference (as they are in the "cat" and "tree" cases here), or when the person has different concepts as a result of having a language that divides up the world in a different way. For instance, I might say of Paul that he thinks the man in the gabardine suit is a spy, even if I know that Paul has no idea what a gabardine suit is.<sup>7</sup> In a similar vein, then, why shouldn't I be able to say of Ajax that he thinks that the elegant Siamese we were just talking about is up in the tree, even if we grant that Ajax has no idea what a Siamese is or what it was we were talking about? In foreign language cases, also, we tend to find ourselves ascribing beliefs to people involving concepts they do not have. For example, I might attribute to an ancient Chinese philosopher the belief that a particular action is immoral, even though that philosopher might not have any concepts that match exactly with our concept of immorality -- the closest probably being *pu te* (not virtuous) or *pu yi* (not right).

Still, one might say, we wouldn't ascribe such a belief to a Chinese philosopher unless he had *some* concept approximately matching our concept of immorality. This brings me to my second point against the claim that the crucial difference between Mary and Ajax somehow turns on Mary's having the concept of a tree and Ajax's not having that concept. Even if we were to reject

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<sup>7</sup> Such belief ascriptions are sometimes called *de re* belief ascriptions (e.g., by Quine 1966/1976). In *de re* belief ascriptions, there is a degree of semantic transparency. Roughly, a *de re* belief ascription may be cast in the form: *S* believes of *T* that *T* is (or has) *P*, where any means whatsoever can be used to pick out *T*, regardless of whether the person to whom the belief is ascribed considers *T* in those terms.

description of Ajax as believing that the cat is in the tree because he does not have the human concepts of cats and trees, that needn't mean that Ajax doesn't have concepts with similar extensions which function in a belief similar to the belief that the cat is in the tree, a belief approximately captured by that sentence. For example, Ajax might have a concept of a "tree\*" as a tall thing with a shape something like this, leaves on top that sometimes come down, a smell something like this, and good for peeing on to mark territory. (Although again, such an English rendering can only be approximate: Ajax's concept of a leaf, and his concept of territory, are no doubt rather different from our own.) To insist without further argument that dogs cannot have beliefs of this sort begs the question against animal belief. To assert that a creature with a cluster of such beliefs still cannot have a *concept* of a "tree\*" threatens to obfuscate the notion of 'concept' and render it useless to the debate. (If one attempted to define the word 'concept' in such a way that dogs could not have them, I would naturally question whether such things were really necessary for beliefs.) In any case, I don't see why having clusters of beliefs of this sort shouldn't be sufficient to satisfy Davidson's holism requirement mentioned above. A dog may know more about trees or snakes or bones (e.g. because he knows a lot about their smell and doggish uses, etc.) than many humans to whom we attribute beliefs about such things. Furthermore, given Davidson's holism about the content of beliefs -- his view that one's concept of a tree is the product of a wide



range of one's beliefs about trees -- everyone should have a slightly different concept of what a tree is. Perhaps I think a saguaro cactus is a tree and Mary doesn't. If this is true, then what I am doing when I say that Mary thinks the cat is in the tree is not different in kind from what I am doing when I ascribe Ajax the same belief: in both cases I am using an English sentence that only conveys *approximately* what I take to be going on in their heads. The difference is that in Mary's case, because our concepts and our worldviews are more alike, the approximation is a fair bit closer. (I will return to the issue of the approximate nature of belief ascription in chapters five through seven.)

A second difference between Mary and her dog is that we can question Mary about her beliefs. If we want to know whether Mary believed that the cat was in the only object on the block that was a sapling in 1908, we can ask her. It might be thought that this fact could serve as a starting point for an argument that we can ascribe particular beliefs to Mary but not to her dog. Imagine, however, the results of actually posing such a question. What kind of response are we likely to get? Clearly, if Mary doesn't know this fact about the tree she will deny having such a belief, but let's suppose she does recall -- now that we mention it -- that Aunt Janet planted the tree in 1906 in memory of her mother. In response to our query, then, perhaps we will get something like this: "No, I didn't believe that. Well, maybe I did. I don't know -- I wasn't really thinking about it that way

at the time. You philosophers ask such silly questions!" Even if Mary does come up with definite answers to our questions, we might wonder how much stock we ought to put in such answers. I am skeptical, then, about whether even in what might seem to be the most favorable cases, the cases in which we can ask a person directly about her beliefs, we can do what Davidson seems to want to require of us in the animal case: that is, nail down *specifically* what the content of Mary's beliefs is. For humans as well as for animals, our belief attributions will be seriously underdetermined by the available data.<sup>8</sup>

Perhaps we do know better what is going on in Mary's mind than in Ajax's (although I think this is an open question). If there is a difference here, however, it is only one of *degree*. We are not totally at a loss regarding how to describe Ajax's beliefs, nor are we capable of nailing down Mary's beliefs with spotless precision. Our efforts give us an understanding of dog and owner that lies somewhere between the two extremes. Some kinds of knowledge and ways of thinking about the world we know to be alien to Mary and her dog, some natural. We don't think Ajax considers the cat to be doing a dishonor to Grandma Szypanski's memory, nor do we think Mary likely to think of the cat in terms of its smell. We know something of the way Mary and Ajax approach the world and we can use our knowledge to provide us with a range of ways of approximating with language what we take to be going on in their heads. These epistemic facts

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<sup>8</sup> Dennett (1987, p. 110-116) and Smith (1982) make a similar point. Note that although the point is an epistemic one, it seems to be employed by Davidson to make an

provide no basis for claiming an important ontological difference between the contents of Mary's mind and the contents of Ajax's. If Davidson continues to insist that there is an important ontological difference here, rooted in the greater "complexity" of language-users' behavior, he does so without a clear argument.

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ontological point: There really is nothing specific to be nailed down.

## 2. Faults in Davidson's Second Argument Against Belief Without Language

It is clear in both his articles against the possibility of belief without language that Davidson attaches greater weight to a second argument than he does to the argument just presented. This second argument is quite simple and runs as follows (1982b, p. 324-327, 1975/1984, p. 169-170):

(P1.) In order to have beliefs, it is necessary to have the concept of belief.

(P2.) In order to have the concept of belief, one must have language.

(C.) Therefore, belief is not possible without language.

Granting that infants and animals are not capable of language, it follows immediately that they do not have beliefs. Unlike the first argument, this second argument is clearly valid. I will concentrate my attack on the first premise.

Both premises make reference to the "concept of belief." What does Davidson think this concept involves? In "Rational Animals" Davidson equates having the concept of belief with having a belief about a belief (1982b, p. 326). This may seem like too weak a requirement -- after all, one can have a belief about an ocelot without having the concept of an ocelot ("that cat looks so cute and tame"). However, Davidson glosses his claim in such a way as to make it clear that he means to be saying that the concept of belief requires the capacity to have beliefs about beliefs understood as beliefs. Although Davidson does not phrase his claim in this way, others have called the

capacity to which Davidson seems to be alluding "metarepresentation" (Heil 1992; Perner 1991b).

Davidson envisions at least two conditions that must be satisfied before he is willing to grant a creature the capacity in question:

(M1.) The creature must have the ability to recognize that a belief may be false.

(M2.) She must have an understanding of what Davidson calls the "objective-subjective contrast" -- i.e. the idea of "an objective reality independent of my belief" (1982b, p. 326, 1975/1984, p. 170).

It is interesting to note that the emergence of both of these capacities in children has been studied by developmental psychologists (e.g. Perner 1991b; Wimmer and Perner 1983; Gopnik and Astington 1988; Flavell, Green, and Flavell 1986), and they have been found to emerge at roughly the same time. If these psychologists are right, however, the abilities in question appear rather later than Davidson might hope: most children are *four years old* before they have these capacities. More on this shortly.

Assuming that the above is something like what Davidson has in mind when he mentions the "concept of belief" in (P1.) and (P2.), let's take a closer look at the plausibility of these premises. I intend to focus my argument on (P1.), but before doing so, I would like to look briefly at (P2.). Davidson claims that one cannot possibly have the concept of belief unless one

has language. In defense of this claim, Davidson confesses that he can offer only an analogy.

If I were bolted to the earth I would have no way of determining the distance from me of many objects. I would know only they were on some line drawn from me toward them. I might interact successfully with objects, but I could have no way of giving content to the question where they were. Not being bolted down, I am free to triangulate. Our sense of objectivity is the consequence of another sort of triangulation, one that requires two creatures. Each interacts with an object, but what gives each the concept of the way things are objectively is the base line formed between the creatures by language. The fact that they share a concept of truth alone makes sense of the claim that they have beliefs, that they are able to assign objects a place in the public world (1982b, p. 327).

What Davidson says about physical triangulations is, I think, false: a person bolted to the earth could learn to mark distance by noting cases of occlusion and interaction and the relation of these to differences in the perceptual size of objects; furthermore, it is not clear that triangulation is the primary means people who are not bolted down use to judge distance. Of course, this doesn't prove false his remarks about "triangulation" by means of linguistic interaction between people. These rather cryptic remarks are the subject of substantial sympathetic decoding by John Heil (1992, p. 214-222). Heil suggests we understand the requirement of triangulation as a requirement that we be able to *compare* our view of the world with the view of another. Only if we are able to do this can we understand that our view of the world is just that -- a view. And this understanding is plausibly connected with requirements (M1.) and (M2.) above. But why is language necessary for all

this? At this point, Davidson would likely appeal to an idea he defends in "Belief and the Basis of Meaning" (1974/1984): Language is necessary for triangulation because we could not come to understand another's beliefs without simultaneously understanding her language.

I suspect Davidson could be fruitfully challenged regarding (P2.) and the triangulation metaphor. I have gone some way in the previous section, I hope, toward undermining his idea that we can't give content to the beliefs of a creature without language. Even Heil, though generally sympathetic to Davidson's project, has some qualms about (P2.). Heil describes various circumstances in which it might be possible for a creature without language to come to understand that her beliefs might be false, might not match up with the way the world actually is. Perhaps Heil is right about this. Nevertheless, I am willing to concede (P2.) for the sake of argument. I will argue below, in fact, that (M1.) and (M2.) emerge relatively late in the development of youngsters, well after the development of language, and I have never seen any convincing study suggesting that these capacities are present in non-human, non-language-speaking animals.<sup>9</sup> Maybe for some reason Heil missed language *is* necessary for the concept of belief. Davidson has not, I believe, presented a convincing argument in this direction; on the other hand, I have no argument against it.<sup>10</sup>

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<sup>9</sup> Woodruff and Premack (1979) have a well-known argument for the existence of such capacities in chimpanzees, but there are substantial difficulties with this argument, difficulties admitted to by Premack himself (1988).

<sup>10</sup> Bishop (1980) also presents an interesting argument against (P2.).

Against (P1.), the claim that belief is impossible without the concept of belief, I am better prepared to argue. First, notice that Davidson's arguments in favor of (P1.) are rather limited. In "Thought and Talk" he says only this in defense of the premise:

Can a creature have a belief if it does not have the concept of belief? It seems to me it cannot, and for this reason. Someone cannot have a belief unless he understands the possibility of being mistaken, and this requires grasping the contrast between truth and error -- true belief and false belief. But this contrast, I have argued, can emerge only in the context of interpretation, which alone forces us to the idea of an objective, public truth (1975/1984, p. 170).

The defense here amounts merely to a restatement of (P1.), not in terms of the concept of belief in general, but rather in terms of what Davidson regards as a requirement for having that concept -- the capacity to recognize that one's beliefs might be false (M1.). To this is added a restatement of (P2.). This defense, in other words, is no defense at all.

In "Rational Animals" Davidson does a little more in way of defending (P1.). His argument runs as follows (1982b, p. 326). I cannot have a belief unless I have the potential to be surprised. But surprise requires that I become aware of a contrast between what I did believe and what I came to believe. This requires a belief about a belief (understood as a belief): I came to believe that my original belief was false.

The argument, though perhaps initially attractive, does not stand up to scrutiny. It is not a necessary condition of surprise as we ordinarily understand it that one come to



recognize a past belief as false. I might be surprised to find that I have won the lottery, though I do not judge myself as having been earlier mistaken about my chances (or anything else). The argument thus turns upon a false premise, and second step in the argumentative chain from having beliefs, to having the capacity for surprise, to having the concept of belief, is cut. Davidson might wish to escape this objection by saying that he means something different by "surprise" than what we normally mean by it -- on Davidson's understanding of "surprise," perhaps, surprise entails the recognition of a past false belief. But then there would seem to be no reason to accept his claim that belief requires the capacity for surprise -- no reason, that is, unless we already accept (P1.). But (P1.) is supposed to be the *conclusion* of the argument, not a premise. Davidson's argument from surprise, then, is either question-begging or it rests upon a false premise. Either way, it provides no support for (P1.).

The simplest reason to reject Davidson's second argument, then, is this: it has a dubious first premise which Davidson gives us no good reason to accept. Why should having a belief require the concept of belief any more than having a pain or a bad temper requires the concept of pain or bad temper?

John Heil devotes considerable effort in his discussion of Davidson to making (P1.) seem plausible (1992, p. 198-205). Heil's argument is this. In some sense of "representation," many things may be thought to have representational properties. For instance, the bimetallic strip in a thermostat is a device

designed to represent temperature by curling to a greater or lesser extent depending on the temperature, closing the connection to the furnace when the air is too cold. In the natural world, honeybee dances may be thought to represent the location of honeybee food. But, Heil thinks, such representations do not by themselves have determinate aspectual shape, as beliefs do; descriptions of the representations do not exhibit referential opacity.<sup>11</sup> There is no fact of the matter, Heil thinks, whether thermostats measure air temperature as opposed to mean kinetic energy of nearby molecules (or any like quantity) -- thermostats represent all such related quantities just the same. The case is similar for honeybee dances: can we really insist that the honeybee dance represents the location of food as opposed to the location of (say) a chemical substance of type F associated with the presence of food? With greater knowledge of honeybees, we may be able to rule out certain candidates in this department, but there will always be, Heil thinks, some important range of options, with no clear basis for our preferring to describe the honeybees as representing things one way rather than another.

Heil goes on to argue that it is only in a system with the capacity for *metarepresentation* that representations acquire definite aspectual shape.<sup>12</sup> (A "metarepresentation" is a

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<sup>11</sup> Heil actually uses the term "semantic opacity" to talk about both the referential opacity of sentences and the fact that beliefs have aspectual shape. I think the application of such linguistic terminology to beliefs is apt to be misleading, so I will not follow him in this. I do not think my reinterpretation of Heil's terminology makes a difference to the argument at hand, however.

<sup>12</sup> It actually may be the case that Heil only wishes to argue that metarepresentation *suffices* for the possession of cognitive states with aspectual shape, rather than being *necessary* for it. I shall interpret him as making the necessity claim, since without it

representation of a representation understood as a representation. For the sake of argument, we can grant that a creature has this capacity just in case it satisfies (M1.) and (M2.) above.) Why is this? It is because metarepresentations, taking other representations as their content, are capable of exploiting differences in the aspectual shape of a representation in a way no other system in a creature can. Only if honeybees had the capacity for metarepresentation could a representation that there is a chemical F in a certain location generate different behavior from the representation that there is food in that location. And unless a creature can entertain representations with aspectual shape -- where representations with different aspectual shape have different impacts on behavior -- that creature has no beliefs.

Heil's argument is a difficult one, and I hope my presentation of it has been fair. I must admit I have trouble seeing the pull of it. First, I would like to reject the premise that only if a system is capable of exploiting aspectual shape behaviorally can it be said to have representations with aspectual shape. Heil (p. 198) cites Fred Dretske (1988) on representation as though he wishes to begin a Dretske-friendly discussion of representation -- and to a point what he says about representation *is* a lot like what Dretske has to say. But on Dretske's account of representation, an object represents what it has the function of indicating, and we can build a bimetallic

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his argument cannot succeed as a defense of (P1.): unless metarepresentation is necessary for aspectual shape, the possession of beliefs will not imply the capacity for

strip with the function of indicating temperature *specifically* (as opposed to mean kinetic energy). Or -- to use an example less likely to run us into definitional and scientific problems -- we can (and generally do) build fuel gauges with the function of indicating the amount of fuel left in the gas tank as opposed to the amount of downward force exerted by the fuel tank on the bolts holding it to the car frame, despite the fact that the fuel gauge generally indicates both quantities (1988, p. 59-60). On Dretske's account, then, the representations my fuel gauge provides me with do have aspectual shape -- and claims about what my gauge is representing are referentially opaque -- despite the incapacity of the device to exploit this aspectuality in its behavior. If we try to make the case more analogous to the thermostat case by taking gauge-reading humans out of the picture -- perhaps by imagining the fuel gauge to have some control function in an automatized car -- the situation does not change. The gauge still has the function of indicating the amount of gas left. It does not malfunction if, for example, the vehicle is transported between the earth and moon so the gauge no longer reliably indicates the downward force exerted on the bolts.<sup>13</sup> Similarly, depending on one's account of natural functions, one might think there is good reason to say that the honeybee's dance represents the direction of *food* specifically, as opposed to the presence of chemical type F (or vice versa), despite the fact

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metarepresentation.

<sup>13</sup> This, of course, must be done by a human representer; so only might argue that in a rather roundabout way metarepresentational capacity is presupposed even in this case of referential opacity.

that these two factors are generally correlated. (I will have more to say about representation in chapter three.)

A second crucial assumption Heil makes in his argument is that only if a creature has metarepresentational capacity can that creature exploit the aspectual shape of its representations. I am not sure exactly what work "exploit" is supposed to do here, but I suppose Heil's claim must amount to something like this: only if a creature has metarepresentational capacity can it make functional use of the fact that its representations have aspectual shape. It is a bit difficult to imagine what sort of functional use we make of the fact that our representations have aspectual shape. Examples meant to show that our representations have aspectual shape typically involve cases of ignorance or misrepresentation for which it is doubtful there is a specific function. I believe that Carl just came home, but I don't believe that the president of the bank just came home, despite the fact that Carl is president of the bank. How, exactly, am I supposed to "exploit" the aspectuality of this belief?

One case that does come to mind in which we might be said to exploit the aspectuality of our beliefs is in being prepared for counterfactual situations: I believe Carl came home and I know Carl is president of the bank, so I believe the president of the bank came home, but because these two beliefs are different beliefs with different aspectual shape (Heil says they are "fine-grained"), I could just as easily -- in a different possible world -- have believed one without believing the other.

But this means of exploiting the aspectual shape of representations is not confined to metarepresenters. Consider again our automatized car. Suppose this car has a fuel gauge whose function it is to indicate when the fuel falls below a certain level, so that the car can "report in" for refueling. Suppose also that it has another gauge whose function it is to indicate when the weight of the liquid in the gas tank falls below a certain level so that the car may take advantage of its lighter weight in maneuvering. Now, in fact, both these devices always go off at the same time. (The engineer who designed the gauge setup of the vehicle was fired for this blatant inefficiency.) But the car would be capable -- if the world were a different place -- of registering these two facts separately.

Perhaps I am missing something obvious in Heil's argument, but without a better sense of exactly what it means to be able to exploit the aspectual shape or "fine-grainedness" of representations, it is difficult to judge whether a creature or machine without metarepresentational capacity could do so. Even if Heil were right about this point, however, his argument could still be challenged on the grounds that it is not obvious, for reasons discussed above, that a creature without the capacity to exploit the aspectual shape of its representations would necessarily thereby *not* have representations with aspectual shape.

Do we have any reason, then, for accepting (P1.)? I think not. Neither Davidson's nor Heil's defense of this premise gets

off the ground. And on the face of it, (P1.) is not particularly appealing. It may be the case that in order to have a belief a creature must be able to distinguish, at least roughly, states of affairs that would count as satisfactions of that belief from states of affairs that would not -- perhaps we shouldn't be willing to say that Ajax can believe that Mary is home unless he can in some general way distinguish states of affairs in which Mary is home from states of affairs in which she is not -- but this is a far cry from having the metalinguistic notions of truth and falsity and the capacity to think of one's beliefs as possibly true or false (Searle 1994). Why anyone should think (M1.) and (M2.) necessary for belief is, I have to admit, something of a mystery to me.

There is a simple but important rebuttal to Davidson's argument, then. It is merely this: the argument depends on a counterintuitive premise for which neither Davidson nor his supporters are able to provide convincing support. There is simply no reason to accept (P1.). In the remainder of the section I shall focus on a second argument against Davidson which is quite a bit more complicated. But before heading into that argument, I wanted to pause for a moment to consider the weight of this simpler, and in some ways more appealing, first argument, which I dub the "huh?" argument, as in, "(P1.)? Huh?"

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My second argument is also an attack on (P1.), but one with perhaps more force than merely showing that Davidson presents no good reason to accept (P1.). I argue that (P1.), given a few sensible auxiliaries, commits one to a position about the timing and development of linguistic and metarepresentational abilities -- a position that has been shown empirically to be false.

I have already mentioned the empirical finding I think causes trouble for Davidsonians: Children generally do not develop the concepts of objectivity and false belief until their are four years old, or so a number of developmental psychologists say (e.g., Perner 1991b; Flavell, Green, and Flavell 1986; Gopnik and Astington 1988). Yet most children are actively using language by the time they are two.

These findings should be troublesome for Davidson because he is committed to the position that language and the understanding of false belief and objectivity must emerge *simultaneously*. Obviously he accepts the claim that one cannot understand objectivity and false belief until one has language -- that is just (P2.). But he also thinks the conditional runs in the other direction. At the beginning of "Thought and Talk" Davidson says that "the dependence of speaking on thinking is evident, for to speak is to express thoughts" (1975/1984, p. 155). Indeed a project like radical interpretation (1973/1984) would make little sense if attempted on a creature without beliefs. But if speech requires belief and belief requires (M1.) and (M2.), then clearly speech must require (M1.) and (M2.). So the conditional runs



both ways for Davidson. Not only does an understanding of objectivity and false belief require speech, but the possession of speech requires an understanding of objectivity and false belief.

Therefore, unless Davidson wishes to claim that children are exempt from natural law and philosophical theorizing (a claim to which I admit I have sometimes been tempted), he must be committed to the position that the two capacities develop simultaneously. Otherwise, every child would, at some point, be a counterexample. But, in fact, language does *not* emerge at the same time in children as (M1.) and (M2.) do. It emerges much earlier. Davidson's position therefore must be false.

There is a limited range of alternative responses a Davidsonian could make to the charges I have just leveled. She could: (1.) challenge the merits of the empirical research in question, (2.) deny that Davidson's claims are empirical (and so are not empirically falsifiable), (3.) deny that children really have "language" until they are four or so, (4.) accept less stringent criteria for possession of the "concept of belief," or (5.) try to make a gradualist case, arguing that children have the beginnings of the concept of belief and the beginnings of language at two and develop the two in tandem until they are four years old. In the remainder of this section I will examine each of these potential responses in turn.

So how good is the empirical research I cite? It is fairly widely accepted in the developmental literature, and to the

extent there is disagreement, there are few who would locate the development of an understanding of objectivity and false belief as early as the second year, when language emerges.<sup>14</sup> The debate has primarily been between those who hold that such understanding doesn't emerge until around the fourth birthday and those who think it emerges sometime around the third birthday (e.g., Wellman 1990; Sullivan and Winner 1993). Of course, arguments from authority don't hold any water in philosophy in the twentieth century -- I certainly wouldn't accept such an argument -- so I will try to explain what the research has been and why I find it convincing. This will take a few pages.

Let's take (M1.) first, the ability to recognize that a belief may be false. A seminal study on the developmental emergence of this ability was conducted by Heinz Wimmer and Josef Perner (1983). In this study, Wimmer and Perner told children some simple, concrete stories which adults would judge to involve false beliefs, and then asked the children questions intended to reveal whether they, like adults, would judge the characters in the stories to have false beliefs. One such story ran as follows (experiment 2, abbreviated rendition taken from Perner 1991b):

"Maxi and the Chocolate"

Maxi is helping his mother to unpack the shopping bag. He puts the chocolate into the GREEN cupboard. Maxi remembers exactly where he put the chocolate so that he can come back later and get some. Then he leaves for the playground. In his absence his mother needs some chocolate. She takes the chocolate out of the GREEN cupboard and uses some of it for her cake. Then she puts it back not into the GREEN but into the BLUE cupboard. She leaves to get some eggs and Maxi returns from the playground, hungry.

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<sup>14</sup> Alan Leslie (1988) is a possible exception.

*Test Question:* "Where will Maxi look for the chocolate?"<sup>15</sup>

This story was told not just verbally, but with the use of puppets and miniature cupboards, so the children could better focus on what was going on. It was hoped that children who understood the possibility of false belief and the conditions under which false beliefs were acquired would guess that Maxi would look in the green cupboard, and that children who did not recognize the possibility of false belief or who were confused about how false beliefs were acquired would guess that Maxi would look in the blue cupboard.

Young children performed quite poorly on this test, almost never guessing that Maxi would look in the green cupboard. Four and five year olds answered correctly about 50% of the time, with five year olds -- but not four year olds -- performing at ceiling if told that the question was tricky, and that they should "stop and think." Four year olds were helped substantially if the story was changed so that all the chocolate was used up in the cake, in which case the actual presence of the chocolate in the blue cupboard would not be a distraction to the recognition of the fact that Maxi would look in the green cupboard. Even in this last condition, however, the three year olds failed 85% of the time to guess correctly.

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<sup>15</sup> Since this experiment was conducted in Salzburg, I presume that it was conducted in German and this is a translation. I suppose it is something of a question whether the capacities of German-speaking and English-speaking children might differ on such tasks. I have not seen any results which suggest that they do, and at least one study that suggests they do not (Perner, Leekam, and Wimmer 1987). Penny Vinden (1996) has found differences in the developmental timing of this capacity between children in our culture and those in certain pre-literate cultures, however.

The fact that children under four consistently failed these tests could not be explained by the failure of the children to understand words like 'know,' 'believe,' etc. because such words were not used in the experiment. Many three year olds did forget where Maxi originally put the chocolate, but the four year olds did not forget and still performed poorly; furthermore, in a similar experiment conducted later (Perner, Leekam, and Wimmer 1987), the great majority of three year olds did remember the relevant facts -- including an additional fact which was emphasized, that Maxi did not see his mother move the chocolate -- and their performance was still below 50%. (Young three year olds answered correctly 21% of the time, older three year olds 60% of the time.)

What might explain these results? One hypothesis that has been proposed is that the problem is not with recognizing the possibility of false belief, but rather with understanding the conditions under which false beliefs are formed (Wimmer, Hogrefe, and Sodian 1988; Leslie 1988). Another possibility is that children recognize that the characters in the stories have false beliefs, but don't understand the connection between belief and action well enough to guess that the false beliefs will lead to unsuccessful actions. A third possibility is that there is some sort of linguistic failure: The children don't understand the question, interpreting it, e.g., as a question about where the chocolate really is.

A variation by Gopnik and Astington (1988) of an experiment originally designed by Hogrefe, Wimmer, and Perner (1986)

suggests against the first two of these interpretations. In this experiment, children are presented with a typical container, for example a "Smarties" box (Smarties are a candy well-known to British and Canadian children), and are asked what is inside. Naturally, they answer, "Smarties." The box is then opened and the children are shown that it really contains a pencil. In the original experiment, the container was reclosed and the children were asked to guess what their friend, waiting in a separate room, would think was in the Smarties box if it was shown to him all closed up. As suspected, the children tended not to predict a false belief -- they said their friend would think a pencil was in the box. In the Gopnik and Astington variation on the experiment, the children were inquired instead about their own previous belief: did they think, when they first saw the closed box, that there were Smarties in it, or did they think it contained a pencil? Amazingly enough, a majority of three year olds reported that they had thought the box contained a pencil. This result cannot be attributed to the children's generally poor memory; they remember quite well when their past belief is a true one, when the Smarties are visibly replaced with a pencil. The result also cannot be explained by the children's reluctance to admit their own past error; they do just as poorly when asked to report another child's mistake (Wimmer and Hartl 1991).<sup>16</sup> In fact, Wimmer, faced with his own experimental evidence, was forced to recant his earlier position, cited above, that the best explanation of his and Perner's 1983 experiments was not that the

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<sup>16</sup> This experiment was conducted in German.

children misunderstood false belief but rather that they did not understand the conditions under which false beliefs were formed. In the task at hand, knowledge of how beliefs are formed is not necessary and cannot explain the children's failure.

The possibility that the children's poor performance may be due to linguistic failure is contravened by the the fact that experiments conducted using a wide variety of tasks and question-types have generally produced the same results. Some have not used *questions* at all, but simply motivated the children to deceive another person, though the results on these experiments have been more mixed (see Sullivan and Winner 1991, 1993; Sodian 1991; Sodian et al. 1991; Peskin 1989 reported in Perner 1991; Hala, Chandler, and Fritz 1991). Furthermore, even if there were systematic linguistic misunderstanding throughout this wide variety of tasks wouldn't the most natural explanation of the consistency of such misunderstandings be the children's failure to grasp the concepts being tested for?

These experiment, in conjunction with Wimmer and Perner's 1983 experiments, strongly suggest that children have difficulty understanding the concept of false belief before they are four years old, even to the point of misremembering recent events involving false beliefs. Gopnik (1990) compares this active misremembering with that of a person committed to a theory who misremembers an anomalous event in such a way that it conforms with her theory. (I will discuss children and theories in substantially more detail in my next chapter.) Viable

alternative explanations of these experiments and others like them have not been forthcoming.<sup>17</sup>

A second ability Davidson requires before he is willing to grant that a creature has the concept of belief is an understanding of the "objective-subjective contrast" (M2.). Davidson does not explain exactly what he thinks understanding this contrast involves, but I think it is fair to assume that it involves understanding at least

(M2\*) Things can sometimes appear to be one way when really they are quite another.

A creature who did not understand (M2\*), who did not understand the difference between appearance and reality, would necessarily not satisfy (M2.).<sup>18</sup>

The development of the understanding of (M2\*) in young children has been studied extensively by John Flavell and his colleagues (for example in Flavell, Flavell, and Green 1983, 1989; Flavell, Green, and Flavell 1986; Flavell, Green, Wahl, and Flavell 1987). In one experiment (Flavell, Flavell, and Green 1983), Flavell showed three and four year old children a sponge that looked like a piece of granite. When they first saw it, nearly all the children said it was a rock. Then the

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<sup>17</sup> Sullivan and Winner (1993) and Wellman (1990) have managed to elicit, under very particular conditions, correct responding to similar experiments in children in their early threes, but it is doubtful that such responses are indicative of a general understanding of false belief. And even if we were to take such experiments as revealing a real understanding of false belief, that still would not save Davidson's thesis, since the onset of language is much earlier, usually before the child's second birthday. Jerry Fodor (1992) is one who interprets Wellman's results as suggestive of real understanding, but even he, despite his nativist promptings, is not brave enough to attempt defense the view that the understanding of false belief emerges as early as the second year.

<sup>18</sup> Those interested in exploring the variety of meanings the term "objectivity" has taken in recent philosophy are directed to Elisabeth Lloyd (1995).

experimenter squeezed it and allowed the child to do so. The child was then asked two questions:

(A.) When you look at this with your eyes right now, does it *look like* a rock or does it *look like* a piece of sponge?

(B.) What is it *really, really*? Is it *really, really* a rock or is it *really, really* a piece of sponge?

The younger children did not perform very well on this kind of test, tending either to give "phenomenalist" answers to both questions (it looks like a rock and really is a rock), or "realist" answers to both questions (it looks like a sponge and really is a sponge). Similar results were found with stone eggs, red tiles moved behind sheets of plastic to look black, and many other objects (with different proportions of realist versus phenomenalist answers for different objects). In the vast majority of Flavell's experiments, three year olds tended to resist saying that things could *look* one way and *really be* another, suggesting a lack of understanding of (M2\*) (and therefore (M2.)).<sup>19</sup> This resistance persisted despite efforts on Flavell's part to make the tasks and language as simple as possible, and even in the face of attempts to train the children in proper use of the distinction (Flavell, Green, and Flavell 1986; Flavell, Green, Wahl, and Flavell 1987). Interestingly, Gopnik and Astington (1988) found age-independent correlations

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<sup>19</sup> One might object that perhaps in the child's worldview a sponge rock *is* really a rock, just an unusual kind of rock, and so in the example cited, it would be perfectly acceptable for the child to say both that it looks like a rock and really is one. This objection may be plausible for individual cases, but does not address the fact that across



between performance on these tasks and performance on the false-belief tasks described above.

There are a few difficulties, I think, with Flavell's experiments. For example, there may be linguistic difficulties for the children, interfering with their performance on the tasks. (Flavell tries to control for this in Flavell, Green, Wahl, and Flavell 1987, but I do not think he succeeds.<sup>20</sup>) Also, there are a few tasks on which the children *did* seem generally to be able to give the right answers, although these were only a small percentage of the total tasks Flavell reports and not unlike other tasks on which he reports failure (the most notable examples are in Flavell, Flavell, and Green 1983, exp. 1). Still, the overall weight and diversity of Flavell's tasks is impressive, as is the children's remarkable resistance to training.

Although Flavell's studies discussed here, and Wimmer's and Gopnik's discussed above, may not be completely impervious to the challenges of skeptics -- what study is? -- they are at least highly suggestive, and on the occasions they have been adapted in attempt to address the challenges of critics (for example, by changing the language or details of the tasks), they have continued to generate results similar to those cited here. For these reasons, I think Davidsonians have a tough road ahead of

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a wide range of cases it is difficult to get children to distinguish between appearance and reality.

<sup>20</sup> If you read the experiment, compare the children's performance on the "semantically transparent" A-R task with their much better performance on the "Pieces 1" task, supposedly a control task. Why shouldn't the latter task be considered a better test of their ability than the more linguistically laden former task? In fact, the Pieces 1 task better matches Flavell's own description on p. 128-129 of how an appearance-reality test might be performed with minimal linguistic demands.

them if they wish to stake their philosophical position on the gamble that such studies are wildly mistaken -- so far off as to locate the development of capacities at four years which actually emerge during the second year.<sup>21</sup>

After this long diversion into empirical psychology, the reader may need reminding of where we stand. I have argued that Davidson's position that language and the concept of belief are mutually dependent commits him to a strong developmental thesis: that language and the capacities described by (M1.) and (M2.) emerge simultaneously. The empirical work I have cited suggests that this developmental thesis is untenable. If so, Davidson's position must be mistaken.

Above I outlined four responses, other than challenging the merits of the psychological work in question, that Davidson might muster against the charge that his view has been shown empirically to be false. I shall now briefly discuss each of these remaining four responses (numbered (2.)-(5.) above).

It is hard to see how the second response -- that Davidson's work is not empirical and so is immune to empirical refutation -- could possibly do. Although Davidson sometimes claims that his views are not empirical (e.g., in 1982b, p. 317), it is plainly the case that if Davidson holds language to be impossible without belief and thus without the concept of belief, then he must hold that there are no creatures who have language but do not have the concept of belief. This is a claim subject to empirical

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<sup>21</sup> For an interesting, philosophically informed discussion of recent work in this area, the reader is directed to Perner (1991b).

examination. If it is found to be false, then *modus tollens* something in Davidson's original position must be mistaken. It is a matter of simple logic.

Even if we were to grant that Davidson's argument was wholly *a priori* (which it is not), we could still subject it to empirical examination. You can check a complicated addition problem, for example, by counting beads. If you get the wrong number of beads, you should re-examine your addition. If you know that you counted the beads right, then you know that your addition must have been wrong. For simple arithmetic problems, like two plus two, such empirical checking is pointless, but for complicated addition problems, it can be helpful (especially with an abacus or a calculator). Given that Davidson's argument, to the extent it is like an addition problem at all, is more like a complicated addition problem than a simple one, it is worth checking. If it fails empirically, it is flawed. Davidson cannot dispel an empirical objection, then, by saying that his argument is not an empirical one.

The third possible response, that children do not really have language until they are four years old, seems wild on the face of it. By the beginning of their second year, most children are already using their first words. By around eighteen months, they are speaking in two-word sentences, and not long after twenty-four months, they are using grammar productively -- using plurals and present progressives appropriately, and so forth, and speaking in full sentences. Three year olds are capable of

sustained and complicated conversations involving a wide variety of speech acts. Their grammar is not perfect, but I know no one who would want to equate poor grammar with complete lack of linguistic ability -- especially, I imagine, not the Davidson who wrote "A Nice Derangement of Epitaphs" (1986), an apology for the malapropism, defending the position that real linguistic communication can take place even when one party is hopelessly bad at lexical choice.

How could one possibly deny that three year olds have language? I do see one route by means of which Davidson could do this. In "Communication and Convention" (1985a) and "The Social Aspect of Language" (1991), Davidson endorses something like a Gricean (or Lewisian) position regarding the structure of intentions behind language (not that he agrees with Grice or Lewis in other respects):

If communication succeeds, speaker and hearer must assign the same meaning to the speaker's words. Further, as we have seen, the speaker must intend the hearer to interpret his words in the way the speaker intends, and he must have adequate reason to believe that the hearer will succeed in interpreting him as he intends. Both hearer and speaker must believe the speaker speaks with this intention, and so forth... (1985a, p. 22).

One might legitimately wonder whether a three year old could engage in so sophisticated a thought-process. Although Davidson is willing to allow that such intentions as are necessary for communication may not be (and normally are not) "consciously rehearsed" or "deliberately reasoned" (1991, p. 7), it may well be that three year olds are not even capable of *implicitly*

forming such complicated intentions (whatever that involves). (See Gomez 1994, however, for a defense of the view that, in some sense, they do form such intentions.) If complicated Gricean intentions are necessary for language use and if they are unavailable to three year olds, then plainly three year olds are not capable of language.

This would be a desperate route of escape for Davidson, I think. It seems much more sensible to deny the antecedent of the last conditional than to accept the consequent. Even if one did wish to lift Davidson out of the difficulty I have posed for him by claiming that three year olds are not capable of language, doing so would place Davidson in a new difficulty: he would have to say, of course, that they had no *beliefs* either. (That's the whole point!) This seems even a funnier thing to say than that they have no language. Alison Gopnik has remarked that it is difficult to tell from casual conversation with a four year old whether she will be able to pass the false belief and appearance-reality tasks. Are we to believe, then, that half of these children, superficially indistinguishable from each other, have beliefs and the other half don't? (Or, for that matter, that we are engaged in a linguistic exchange with half of them but not with the other half?)<sup>22</sup>

The fourth possibility I suggested as a response a Davidsonian might make to the empirical difficulty in question involves a revision of Davidson's criteria for the "concept of

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<sup>22</sup> Alison Gopnik made this remark in response to a talk defending Davidson given by John Heil at Berkeley in spring of 1994.

belief." Perhaps if these criteria were suitably relaxed, emergence of the concept of belief in children could be made synchronous with the emergence of language. One candidate for such a criterion that suggests itself, perhaps because it has been studied so widely, is the appreciation of object permanence, first studied in depth by Piaget (1954). The development of an understanding of object permanence -- that is, the understanding that objects continue to exist even when they are not immediately being perceived -- seems to be a development closely tied to an understanding of the existence of an objective world. It is also a development that reaches fruition about the same time language use is getting started in earnest, around the middle of the second year (at least according to Piaget; but see Baillargeon 1987; Spelke et al. 1992). It is at this time, according to Piaget, that infants generally come to understand that most hidden objects exist *somewhere* and that systematic searching will generally pay off. Also, like language, development of the concept of object permanence has roots extending back into the first year. It is generally during the latter part of the first year that infants learn to search in a rather limited way for objects that have been hidden from them.

Another capacity that emerges at about the same time as language is the capacity for imaginative pretend play, the ability to treat an object or situation as something other than what it is known really to be (Piaget 1951). Perhaps, then, Davidson could avoid the charges of asynchrony by modifying his

criteria for a creature's having the "concept of belief" to something like (M1') that the creature has the capacity to engage in pretend play, and (M2') that she be able to recognize the continued existence of objects independent of her own perception.

Although some connections could clearly be drawn between (M1') and (M1.) the ability to recognize that a belief may be false, as well as between (M2') and (M2.) an understanding of the "subjective-objective" contrast," there would be some weaknesses in such a move. First, it is not clear anymore that what is being revealed warrants the title "the concept of belief" and so there is the risk that Davidson will lose his purchase on whatever intuitive appeal there might have been in the claim that belief requires the concept of belief. Second, and probably more important, the adoption of (M1') and (M2') looks *ad hoc*; it is not clear what the connection is supposed to be between these capacities and the capacity for language. Evidence suggests, in fact, that development in object permanence is not better correlated with development in linguistic ability than are other, apparently unrelated cognitive developments (Gopnik and Meltzoff 1993). Piaget has argued for a connection between the capacity for pretend play and the development of language: both, he thinks, require the capacity to regard items in the world as "symbols" (1951), but such an argument seems remote from Davidson's concerns and would require a substantial retooling of his arguments and positions.

The fifth and final proposal that might be offered on behalf of Davidson as defense against my empirical objection is perhaps the most sensible; yet at the same time, it is vague and unsatisfying and, like the previous proposal, rather *ad hoc*. It is this: Language and the concept of belief *do* emerge simultaneously. They both emerge slowly, starting during the second year and culminating in the fourth. That is, until the fourth year the child doesn't really fully have the capacity to use language, just as the child does not fully understand false belief and the appearance-reality distinction. Likewise, during the second year the child does have the beginnings of an understanding of false belief and the appearance-reality distinction, just as the child has the beginnings of language.

If this proposal is to be more than just a ploy, it has to be fleshed out to some degree. Perhaps the most promising avenue in this regard would be to incorporate parts of what I have said in the previous two proposals: The seeds of the concept of belief lie in the capacity for pretense and understanding of object permanence, and the failure of three year olds to be fully linguistic consists in their incapacity to entertain complex Gricean intentions. Of course, more would have to be said here, and it would have to be hoped that development of the capacity to entertain Gricean thoughts is synchronous with (M1.) and (M2.), but the position is not absurd.

Still, the position is a strained one. To anyone not viewing development through the lens of Davidsonian theory, it must



certainly seem that a toddler's capacity for language far outstrips any understanding that toddler might have of the nature of belief. At 36 months, we find preschoolers saying such complex things as "You need to get your own ball if you want to play 'hit the tree'" and "When I grow up and I'm a baseball player, I'll have my baseball hat, and I'll put it on, and I'll play baseball" (Shatz 1994); yet at the same time these very same preschoolers are making the grossest, most naive errors on such simple-seeming tasks as those studied by Wimmer, Gopnik, and Flavell.<sup>23</sup> It is a stretch to say of a child at 30-36 months either that she has the beginnings of an understanding of false belief or that she is not fully linguistic (and thus doesn't really have full-fledged beliefs); Davidson, if he is to take this route, must say both.

In this section I have argued against Davidson's second, more serious argument against the possibility of belief without language. The argument was divided into two premises: (P1.) that belief requires the concept of belief and (P2.) that a creature without language could not have the concept of belief. I was willing to grant (P2.), though I thought doubts could be raised about it, and focused my attack on (P1.) It was shown that Davidson provides no real defense of (P1.), and Heil's attempt to defend the premise on Davidson's behalf was found to be weak.

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<sup>23</sup> Actually, these sentences are examples of speech from a toddler who previously displayed at least one instance of what would seem to be a recognition of the capacity for false belief (Shatz 1994, p. 160). Still, the sentences do not seem to be different in kind from sentences uttered by other three year olds who consistently fail on the false-belief and appearance-reality tasks.

Since (P1.) does not look independently plausible, its lack of argumentative support is a serious shortcoming. Furthermore, I presented reasons to think that (P1.) commits Davidson to a position that flies in the face of substantial empirical evidence from developmental psychology. I imagined five rebuttals Davidson might make to this empirical objection and undermined each in turn. In the final section of this chapter I shall present a positive argument on behalf of the possibility of infant and animal belief.

Let me conclude this section with a speculation. A reaction several readers of Davidson have had to these sections is that I have missed Davidson's *real* argument against animal belief. The argument goes something like this: We have excellent reason to think that believing goes hand-in-hand with the interpretation of other speakers' utterances (see, e.g., Davidson 1973/1984, 1974/1984). But, obviously, creatures without language cannot interpret the utterances of others. Therefore, they can have no beliefs. Indeed, it does seem right to say that the rejection of infant and animal belief is a natural outcome of Davidson's system as a whole and its particular reliance on the idea of "radical interpretation"; and I would speculate that it is this relation, more than the arguments described in this chapter, that drives Davidson to his position on infant and animal belief. Why, then, does Davidson not appeal to this reason explicitly in his defense of the view that belief requires language? One reason suggests itself: Showing that his views on radical

interpretation imply that belief requires language does not show that belief actually does require language; one philosopher's *modus ponens*, it is sometimes said, is another's *modus tollens*. The reader might walk away more convinced that Davidson's views on radical interpretation are mistaken than that belief requires language. Therefore, Davidson's position is best bolstered by *independent* reasons for accepting the view that belief requires language -- and it is only to those reasons that he explicitly appeals.

For this chapter really to be complete, then, perhaps I should include a section treating Davidson's views on radical interpretation in which I both assess their plausibility and show their connection with the view that belief requires language. The reader, however, will be spared from this potentially long and arduous exercise. If Davidson chooses not to include such reasons explicitly among his defenses of the view that belief requires language, then I do not see that a person who is not interested in Davidson interpretation for its own sake should feel compelled to address those reasons in critiquing Davidson's articles: He apparently meant the articles to be free-standing. Furthermore, I would add that the task of interpreting Davidson's work on radical interpretation is no mean feat and would lead us quite far from the topic at hand. If the reader finds Davidson's work on this topic so compelling as to force the rejection of anything that contradicts it, I doubt there is anything I could

do, short of devoting my entire dissertation to the topic, that would have any chance of reversing her position on the matter.

### 3. The Word 'Belief'

I have attacked Davidson on enough fronts, I hope, to convince the reader that his arguments against infant and animal belief are not compelling. This does not by itself, of course, show Davidson's conclusion to be false. There might be a powerful argument Davidson missed. The conclusion might even (though right-thinking philosophers quail at the suggestion) be true despite a lack of any good argument at all on its behalf. The point of this section is to convince the reader that this is not the case.

For reasons discussed in the introduction to this chapter, I take the central question here to be a question about the use of the word 'belief.' The question is whether certain borderline uses of the word, picking out mental states of infants and animals, ought to count as correct and literal usage. Although one might think to treat this as a question about ordinary language, I set such considerations aside in this case for two reasons: (1.) I don't think ordinary language yields a decisive answer to the question of whether infants and animals have beliefs (although certainly the sentence *S thinks that p* can be used in ordinary parlance to talk about the mental states of infants and animals, I don't think the same is obviously true for *S believes that p* -- see Nelson 1983); and (2.) I think our purposes as cognitive psychologists and philosophers of mind may be sufficiently at variance with the purposes of ordinary users of English that the most helpful understanding of the term

'belief' for us may not match exactly with that of ordinary usage.

There are two techniques that are often used to resolve disputes about whether to include a borderline or disputed usage of a term as a correct and literal use. The first technique, probably the more familiar to philosophers, is to attempt to *define* the term in question, or supply necessary and sufficient conditions for its application, in such a way that it becomes clear whether literal use of the term would cover the case in question. Although in chapter six I shall attempt something like this for the word 'belief,' that will not be my approach here. Here I will pursue the second strategy of looking at our *purposes* in the use of the term and determining whether those purposes are well or poorly served by extension of the term to cover the disputed case in question.

To get something of a handle on how this might work for a word like 'belief,' consider a more mundane term like 'restaurant.' Ernie's Bar has a kitchen in back from which patrons can order overpriced pizza, nachos, buffalo wings, and the like. Is it a restaurant? According to municipal code it is. It is subject to the taxation and regulation appropriate to restaurants, which is stricter than that applied to supermarkets and convenience stores which also sometimes sell prepared food. On the other hand, if a few of your friends were hungry and interested in going to a restaurant and you suggested Ernie's Bar, they might respond, "that's not really a restaurant." Or if

you were to give your friend Angela directions to your new house, saying, "take Baker street off the freeway and turn right on the first block with a restaurant on the corner," expecting her to turn right when she saw Ernie's Bar, you'd be likely to get the poor woman lost (even if she knows that Ernie's serves buffalo wings). Now we might imagine two philosophers debating the question of whether Ernie's bar was *really* a restaurant. How might they resolve the question?

The debate shares a number of features with the debate over whether infants and animals have beliefs. Like the latter debate, the restaurant debate has both a linguistic and an empirical component. It can be cut into the two questions: (1.) what are the conditions under which it is true to say of an establishment that it is a restaurant? and (2.) does Ernie's Bar in fact satisfy these conditions? If the disputants thought the second question was the point of contention, they might want to go out and see whether Ernie's bar has separate tables, a full-time cook, and so forth. Let's suppose, however, that in this case, like the infant and animal belief case, the dispute is not primarily an empirical one.<sup>24</sup> The disputants are both intimately acquainted with Ernie's Bar. It is a dispute of the former sort, about what should properly be counted as a restaurant.

One thing the disputants might do, then, is analyze the term 'restaurant' in accord with our ordinary-language, pre-

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<sup>24</sup> Of course, this is not to deny that empirical research might bear on the question of whether various creatures deemed borderline can be said to have beliefs, or even that on some analyses it might be an open empirical question whether infants and dogs have the capacities judged necessary for belief. As a matter of fact, however, people have tended to stay away from the latter sort of position (possible exception: Chater and Heyes 1994).

theoretical ideas about what institutions are restaurants. This is how philosophical disputes have often gone. The term is analyzed either into old-fashioned sets of necessary and sufficient conditions or into clusters of features thought to be more or less central to the "restaurant" concept. If their interest is in ordinary language analysis, the debate might stay at this level. If the disputants are open to the possibility of deviations from ordinary use (as I hope philosophers will be in discussing 'belief') they might begin to ask a second type of question: What is the point of classing together all these things we call 'restaurants' under that single term? Will the purposes that motivate this classification be better served if we include Ernie's bar among "restaurants" or not? At this point, it will become clear that for different purposes different classifications might be appropriate. If we are interested in talking about the class of institutions to which one might go with friends in search of a meal that might be an adequate substitute for a meal prepared at home, Ernie's Bar will not count as a restaurant. On the other hand, if we are interested in talking about retail establishments with kitchens that should meet specific health standards, Ernie's Bar may well count. This may explain why your friends have different intuitions than city regulators about whether Ernie's Bar is a restaurant. Only after the purposes in using the term are made clear, will it seem sensible to propose an analysis of it. But by then the debate might be resolved and an analysis unnecessary.



I will take such a pragmatic tack in my discussion of the concept of belief. I will argue that for most of the purposes philosophers of mind and cognitive psychologists have in using the term, it makes sense to include mental states of infants and animals in the category we identify by means of the term 'belief.' It will not, then, be necessary to propose a specific analysis of the word 'belief' to resolve the debate: On any sensible analysis of this term that is sensitive to the general purposes of philosophers of mind and cognitive psychologists it should turn out that infants and animals have beliefs. If a philosopher wishes to use the term for some specific purpose that mandates the exclusion of infants and animals as potential believers, that purpose ought to be made clear beforehand, and it ought to be made clear that the understanding of belief invoked is intended to be useful only within a specific restricted domain of inquiry and not across philosophy of mind and cognitive psychology generally.

The position, then, is a strong one. It is not to be confused with the much weaker claim that, whatever the reality behind the behavior we see is, it is convenient to treat infants and animals as though they had beliefs.<sup>25</sup> On my view, infants and animals *really do* have beliefs, supposing 'belief' in this sentence to be given the sense I endorse. And not only do I hold this, but I also think that on any general-purpose analysis of belief one wishes to propose for philosophers of mind and

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<sup>25</sup> This position is often associated with Daniel Dennett (1987), although he may not be as anti-realist as he sometimes appears (see his 1991b for a discussion of this).

cognitive psychologists, one must be willing to grant that infants and animals have beliefs. In this sense, my position about animals and 'belief' is different from my position about Ernie's Bar and 'restaurant,' since in the latter case I did not see the preponderance of purpose weighing so heavily on one side of the question.

I am assuming for the argument that we are all philosophers of mind and cognitive psychologists here, interested in the word 'belief' because we think it plays a role in a helpful folk psychology and can be imported without serious damage into a sensible scientific psychology. As such, we feel free in a scientific or philosophical mode, if the evidence is right, to say of a creature that it has some belief or other. Abstracting away from (admittedly important) interpersonal, political, and other such situationally variable factors, I think our purposes in doing so are two:

(G1.) We want to predict and explain a creature's *behavior*.

(G2.) We want to predict and explain that creature's *phenomenology*.

On my view, the purposes described in (G1.) and (G2.) are happily met if we extend our belief ascription practices to cover infants, apes, and dogs. If so, then unless there is some other overriding purpose that gains our devotion, there will be no good reason not to count such an extension as a literal and correct use of the term 'belief.' We are, after all, making a practical decision about where to draw our lines.

Let's look at our behaviorally based reasons for belief ascription (G1.) first. Think about Kim's cat, Baby. Every evening, Baby hears the can-opener and food is placed in her dish. Today Baby has not eaten since morning. Now it is evening and Baby has a drive or desire -- or disposition, if you prefer -- to eat cat food. Suddenly, she hears the can-opener! Baby runs into the kitchen where her food dish is. A behaviorist might say that what we have here is a simple case of operant conditioning. Certainly there are examples of more complex cognitive processing in cats than this. Yet notice that it is perfectly natural to describe Baby's behavior as caused, in part, by a mental state with many of the outward features of belief. As a result of an auditory perception of the operation of the can-opener, Baby's brain shifted into a state which, because of the presence of a certain drive or desire, or at minimum a certain kind of disposition, resulted in behavior sensitive to the way things were in the world. This behavior will cause in turn the satisfaction of Baby's drive or desire for food, or the instantiation and resultant slaking of her disposition to eat. Considering the plethora of similar examples in Baby's life, we may with justice conclude that Baby has brain states that are belief-like in at least the following respects.

- a. They may be caused by perceptual events.
- b. They work in conjunction with desire-like states to produce behavior.

- c. This behavior is sensitive to the state of the world, which is to say it would normally be different if the world were in a relevantly different state.
- d. The states can "get it wrong" about the world (for instance, in cases of misperception) with the result that they generate inappropriate behavior. In this sense, we can say that these states have a "mind-to-world direction of fit" (Searle 1983), or that they are "representational" (Dretske 1988, 1993).
- e. These belief-like states sometimes work productively together with other belief-like states to produce behavior that could not result from either belief-like state working alone. (Example: Baby sees Puddles, an enemy cat, lying in the path between her and her food dish, so she takes an alternate, roundabout route to the dish.)
- f. These states have what I (following Searle 1992) have called "aspectual shape." I argued for this point in the first section of this chapter.

We have here a sizable array of behavior-related similarities between Baby's belief-like mental states and the beliefs of adult humans. If our interest is in behavior, on what basis might we be motivated to nonetheless deny that what Baby has are "really" beliefs after all?<sup>26</sup> There must be some crucial respect in which the relations between Baby's mental states and her behavior

differ from those of adult humans such that description of Baby's cognitive states as "beliefs" just isn't warranted.

One candidate that may suggest itself is expressibility. Baby cannot express her beliefs in language; adult human beings can. But what exactly are we to make of this? The condition that a creature cannot believe that *p* unless that creature can express its belief that *p* seems plainly too strong. I believe that my mother is Dutch, but that belief might cause in me so much distress that any time I try to express the belief, I faint halfway through. On a more mundane level, I might have a belief about exactly what shade of tangerine my new Volvo is without the verbal or artistic capacity to express this belief. Even the weaker claim that a creature cannot believe that *p* unless it can express *some belief or other* seems too strong. A car accident might cause my total paralysis, wiping out my capacity to express any of my beliefs, without thereby wiping out the beliefs themselves. Furthermore, it is just not clear why the capacity for expression in either the weaker or the stronger sense (or whatever other sense you wish to make of it) should be given decisive weight in the question of whether we should apply the word 'belief' to the mental states of a creature.<sup>27</sup>

I hope it is plain enough that if all we want is a model, not necessarily accepted with any strong accompaniment of realism, for the prediction and explanation of behavior, then a belief-desire model of mental content will serve us handily. As Dennett

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<sup>26</sup> One might say that their mental states are "not propositional" -- but this is merely empty jargon unless it is cashed out in some way relevant to our purposes in belief

(1987) has suggested, if that is all we want, we can even often get away with ascribing beliefs to home computers. People who ascribe beliefs and desires to infants and animals do not thereby go vastly wrong in predicting their behavior. Hearne (1982) even suggests that people (mostly academics) who do *not* see animals as creatures with beliefs and desires tend to fail in training their pets and in predicting their behavior. Certainly, according to Hearne, most professional animal trainers work with models of animal cognition which closely parallel their models of human cognition.

However, even if we confine our purposes in belief ascription entirely to the explanation of behavior, we may want to occupy more of a realist position about belief than that described above. We might -- depending on our philosophy of science -- hold that a good explanation of behavior must appeal to mechanisms that not only generate the right predictions, but also are the mechanisms *really at work* in the mind. We want to tell the truth. Thus, we may want to extend our base of evidence beyond the merely behavioral to include the biological. (If there is any kind of evidence regarding the mental states of creatures beyond the behavioral and biological, it escapes me.) We may also want to include some discussion of phenomenology, grounded in behavioral and biological evidence. This latter subject I will pick up shortly.

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ascription.  
<sup>27</sup> McGinn (1982) makes a similar point.

Do we have, then, any biological reason to draw a fundamental line between explanations of adult human behavior and the behavior of the more interesting non-linguistic creatures? I think not. Perhaps someday we will have a biology capable of informing us about exactly what features of *homo sapiens* are responsible for their capacity to form beliefs. Such knowledge may -- or may not -- allow us confidently to distinguish the creatures capable of belief from those that are not and from those that are borderline in various respects. Our biology today tells us nothing so rich. As far as I can tell, our biological knowledge about belief is mainly this: Our brains are somehow centrally involved in it. We can associate some of the larger regions of the brain with a few specific cognitive capacities, although this work has not come very far yet. We might even be willing to speculate that the parts of the brain that are evolutionarily the oldest, such as the brain stem, are not by themselves sufficient for the formation of anything we would want to call a belief. More than this we really cannot say. And of course babies, apes, and dogs have brains with much of the same gross structure as our own brains, and certainly much more to them than just a stem. For all we know biologically, then, the brain works the same way for them as it does for us: (in part) by harboring beliefs. Biology pulls more in favor of infant and animal belief than against it. One might even think that it creates a (defeasible) presumption in favor of animal belief.<sup>28</sup>

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<sup>28</sup> Of course, one might say that the fact that we have language and these other creatures does not show that there are some important biological differences among us --

To sum: One of our primary purposes in describing creatures as having "beliefs" is to predict and explain their behavior. I have argued that non-linguistic creatures can have mental states with a substantial array of belief-like features. If we treat these states as "beliefs," incorporating them into a belief-desire psychology of the creatures in question, we do well in predicting and controlling the behavior of these creatures. Furthermore, we have no more biological basis to doubt that our predictive and explanatory success is the result of the creatures' "really having" beliefs than we do in the human case. I conclude that if we wish to deny the practical virtue of having a notion of belief that covers infants and the higher mammals, it cannot be because our ordinary purposes in explaining behavior demand it.

What about the other purpose I described, the one with the phenomenological cast? Do animals and prelinguistic infants have mental states that play a belief-like role in their phenomenology? (By "phenomenology" here I mean something like subjective, first-person experience -- what things are like "from the inside" for the creature undergoing the experiences.) It might seem hard to know exactly what would count as conclusive evidence for or against this claim. We appear to be plunging into a domain from which a certain skeptical ghost has never quite been vanquished, the one that whispers in our ears that it is impossible to know of the existence or nature of "other

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differences, perhaps, large enough to warrant belief ascription in one case but not in the other. The plausibility of this argument, however, seems to depend on the prior



minds." Even, perhaps, if we are willing to set aside such skeptical worries in the case of other adult human beings -- we think our neighbor Jocko Leibowitz must have subjective experiences that in important ways resemble our own -- we might think it rash to bring on board relatively more alien creatures like infants and dogs.

But why? It is plausible to think our phenomenal experiences are the product of our having brains of a certain type. Dogs and newborns also have brains -- brains, in fact, very much like our own -- so why not grant that they, too, may plausibly be thought to have phenomenology? Certainly there are differences between their brains and ours, but to hold that it is exactly those differences that are responsible for our having phenomenal, subjective experience, and that other creatures lacking these crucial brain features have no phenomenology at all, is a piece of speculative neurobiology that sounds suspiciously like an attempt to save a troubled theory.

It looks for all the world like infants and dogs have phenomenal experiences. They engage in behavior which, if analogs were found in any adult, would draw us unhesitatingly to the conclusion that there was phenomenology playing beneath. A dog sniffs up close to a raccoon and gets swiped across the nose. He yelps, leaps in the air, and runs away. He whines and attends to his nose. He is careful not to brush it against things for a while, and the next time he sees the raccoon he keeps his

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acceptance of a tight connection between language and belief. It is no *independent* reason to think that animals without language cannot have beliefs.

distance. Who but a philosopher would deny that we was in pain? A baby who has not been fed since morning emits a certain high-pitched squeal that her mother has come to associate with the desire to be fed. The baby squeals continuously for a time with no obvious external cause, and upon seeing her mother increases the volume somewhat, for a duration. Upon being presented with her mother's breast, the baby relaxes and begins to feed voraciously. Who but a philosopher would say that this baby didn't feel hunger?

So I hope it will not be thought that I am assuming too much if I accept that infants and dogs have a phenomenology of sorts. At the very least, they can subjectively experience pain, hunger, warmth, loud noises, and so forth. Descartes was alleged to have kicked a cat while asserting that animals are really nothing but machines designed to squeak and make noise but soulless and so incapable of the subjective experience of pain (or anything else), but I do not think most skeptics about animal belief today would follow Descartes this far. Infants and animals may have phenomenology alright, but just not phenomenology of the right sort -- not the kind of phenomenology associated with genuine, honest-to-John *belief*. (Alternatively, the skeptic about animal belief might deny that the phenomenology is the important thing -- but then he'd have to rely on behavioral differences to do the work.)

It is worth pausing for a moment, then, to consider what kind of phenomenology *is* associated with belief. One piece of

phenomenology that might be thought to be rather central to believing is clearly not available to creatures without language: the experience of entertaining a verbal image in one's head and, in some sense, feeling assent toward it. An infant cannot say to itself, "I believe that Sesame Street will continue to attract a wide audience of young children" or even "Gee, that milk was nice and warm." An infant cannot express her beliefs in this explicit, verbal way. If one wishes to hold that this capacity is a *sine qua non* of belief, then it follows directly that infants and animals have no beliefs. No elaborate argumentation is necessary -- except, of course, to convince us to adopt the premise that belief requires the capacity to entertain verbal images.

On the face of it, it doesn't seem very plausible that belief requires that capacity. Consider, again, my brand new tangerine Volvo. What color, exactly, do I think it is? I do have a belief about its exact color. I would be surprised were I to go outside and find the car to be some *different* shade of tangerine. But no way can I express this belief verbally or entertain it as a verbal thought. And although somewhere deep down I understand that my mother is Dutch, I am completely incapable of entertaining a verbal representation of this fact -- it's just too traumatic for me. There are many instances of beliefs we cannot express with verbal images.

Although I wouldn't want to hang too much on it, an interesting case is described by André Lecours and Yves Joannette

(1980). These two psychologists studied an epileptic French monk ("Brother John") who, despite being on anti-seizure medication, was apt to have fits of "paroxysmal aphasia" which enormously impaired his capacity for the production and comprehension of language. Brother John reported proportional difficulty with inner speech. Although he claimed to be able to "think clearly," he was apparently unable to render those thoughts in words, even to himself. One interesting episode related by Lecours and Joannette is the following.

Brother John was travelling to Switzerland by train when he found himself at the height of an aphasic episode. He had never before been to the town that was his destination, but he had considered before the spell became severe that he was to disembark at the next stop of the train. When the train halted, he got off, recovered his luggage, and went in search of a hotel. Although presumably unable to read signs, he chose a building he judged likely to be a hotel and showed the person at the registration desk his medic-alert bracelet. When the person indicated by gesture that the hotel was full, Brother John sought and found another hotel and again showed his bracelet. He was able to provide the clerk the information necessary to complete a room reservation by showing her his passport, and was led to his room. Feeling depressed, he went downstairs in search of a snack at the hotel's restaurant, which he found by himself. Upon being given a menu, he pointed at what he hoped to be the desserts section, and was disappointed when the waiter brought him fish. After the meal he returned to his room and went to bed to sleep

off his fit. He awoke feeling embarrassed and felt the need to explain himself to the registration clerk, who apparently lent a sympathetic ear.

Of course, it is difficult to know how much credence to give to Brother John's self-reports about his incapacity with language during these aphasic episodes; and even if we do give Brother John full credence, his reported aphasia, though severe, was not complete -- we was *sometimes* able to match words to objects (but certainly not entire multi-word sentences). Nonetheless, it seems plain that during these aphasic bouts Brother John's capacity for intelligent action far outran his capacity with language. Furthermore, and of course more centrally for my purposes, it seems unnatural and unhelpful to deny him the capacity for belief during these episodes.

Another potentially interesting source of examples, which I would like someday to explore, would be studies of deaf people without sign language. I suspect their stories would not differ greatly from that of Brother John. I am not sure, however, to what extent such people could be granted a capacity for "language." My guess would be that these people would create stylized gestures by means of which they could communicate to a limited extent with those familiar to them. Whether such stylized communication, if it indeed occurs, should be termed "language" I am unprepared to say. If not, then we have an example of a whole range of adult human beings who are, unlike Brother John, *continuously* incapable of language. Even if we

want to grant that such people do have language, we may want to allow the possibility that certain deaf people, for some reason or other, never learn such a stylized repertoire of gestures. It would be empirically irresponsible, I think, (yet all too typical an example of philosophical hubris) to deny *a priori* that such people could be capable of a phenomenology which looks for all practical purposes like the phenomenology of belief -- except, of course, that it is accompanied by no verbal images.

We still haven't settled exactly what the phenomenology of belief is supposed to be. I have argued, or at least suggested, that it does not essentially involve the actual or potential presence of a verbal image, something uttered in an internal voice. Although it is not essential to my argument, let me go further and suggest what might seem to some a rather wild position: that belief, considered by itself, *has no phenomenology at all*. Certainly it is true that we have at all times a vast number of beliefs with no immediately present phenomenology. I say to myself now, "I believe Carter was President of the U.S. in 1978." I have had this belief since 1978, but it has not impinged constantly on my consciousness since then. For most of the time that has elapsed since 1978, this belief has occupied my head quietly, with no obvious phenomenal traces.

But, one might suggest, now that I am thinking of it, surely, my belief has a phenomenology! Well, what would this phenomenology be, exactly? I run a certain verbal image through my head -- I say to myself, "Carter was President in 1978" -- and

I feel some sort of assent or agreement with this claim. This verbal image and the feeling of assent accompanying it do indeed have a certain phenomenal character. But surely it is not *these* that constitute my belief. They don't have the right properties. The image and feeling come and go; the belief stays. The image has a particular English structure; the belief is independent of the exact form in which it is expressed (i.e. it is the same belief as that expressed by "In 1978, Carter was President"). Calling forth the image requires an act of will (albeit not a profound one); having the belief does not. Thus, the image and feeling, though they have a phenomenal character, are not the belief. But I can discover nothing else in the phenomenology of belief.

Having the belief no doubt *caused* me, in this circumstance, to entertain the verbal image and feel assent toward it (or perhaps the verbal image and assent are manifestations of a disposition which is the belief). It may also cause me, in other circumstances, to feel surprise (if, for instance, I were to find out that by some technicality of law Jimmy Carter's brother Billy was actually president in 1978). Beliefs, of course, play an important role in the generation of a wide variety of phenomenal experiences. I feel *anticipation* and *excitement* at the thought of that beer in the fridge I am about to drink, I *expect* it to taste a certain way, and I form an *image* of what it will taste like going down. I am *afraid* that it will explode when I open it up, since I just saw my roommate shaking it. I feel *disappointed*

and *angry* upon realizing that there is no way to drink the beer and keep my clothes clean at the same time. In my view, the role belief plays in phenomenology is its role in the production, behind the scenes as it were, of such images, feelings, and emotions.

We should ask, then, whether creatures without language can have such images, feelings, and emotions. The view that these creatures have beliefs commits one to the view that, by and large, these creatures do have this kind of phenomenology, and that their beliefs play a role in generating it.

I hope this will not seem implausible. If we are willing to grant, as I think we should, that infants and dogs have *some sort* of subjective, phenomenal experience, then I think we must grant that it goes beyond the pure sensations of hunger, pain, sound, and the like, but also includes feelings and emotions of various sorts. Obviously, some emotions are beyond the capacity of infants and animals -- I doubt an infant could feel wounded honor, for example -- but a basic emotional structure with various colors of positive and negative affect, at least, is surely present. And equally clearly, the emotions do not come and go at random but are affected by mental states with something of the look of beliefs. The baby becomes upset as a result of the mental state she enters upon hearing her mother leave the room. Ajax gets excited as a result of a mental state he enters seeing Mary reach for the leash. Brother John, if he counts during his aphasic episodes as a creature without language, is



disappointed when he sees that the waiter has brought him fish instead of a dessert.

Do these creatures also form nonverbal *images* something like those found in adult humans? The case is perhaps a bit harder to make here, but two considerations may come to the rescue. First, non-linguistic creatures plainly have the capacity to remember past events. If we grant that these memories have some phenomenal cast, it seems reasonable to conclude that they are imagistic. Second, there are scattered reports of "insightful" problem solving by primates that seem to require a capacity not only to entertain mental images, but also to manipulate them creatively. For example, a primate suddenly joins two short sticks together to make a longer stick that can be used to haul in a banana out of reach by means of either stick alone (Köhler 1926).

If our purpose, then, in ascribing beliefs to adults is to say something about how certain of their mental states relate to their phenomenology, that purpose may also be served if we choose to bring infants and dogs within the compass of the term. The latter, it would seem, also have mental states that play a belief-like role in the production of their phenomenology. Their phenomenology may be more limited in some ways, but so long as we are not tempted by application of the word "belief" to grant them a phenomenology beyond them (e.g. of honor or verbal images), then it seems that the extension of the term to these cases is perfectly natural, and a help.

Here, then, is a review of the argument so far. It was asserted, I hope plausibly, that the practical interests of philosophy of mind and cognitive psychology in belief ascription are primarily two. We are interested predicting and explaining behavior and phenomenology. Our purposes, therefore, in calling a state a 'belief' will be well-served if we call those things 'beliefs' that relate in the right way to these two aspects of a creature's life (or, at the very least, are members of a class of things most of which relate in the right way to the phenomenology and behavior of creatures). I argued, first, that some non-linguistic creatures have mental states with belief-like relations to behavior. These states have many of the formal and causal properties of genuine adult human belief, are grounded in a similar biology, and may be treated as beliefs for the effective prediction and manipulation of behavior. From a purely behavioral standpoint, it seemed that there was no good reason, then, to deny extension of the term "belief" to the mental states of non-linguistic creatures. Likewise, I argued that there is no good phenomenological basis to deny the extension of the term to non-linguistic creatures. Given that we grant (on biological and behavioral grounds) that such creatures do in fact have phenomenal experience, it is natural to suppose that this experience is not merely perceptual but also involves emotions and images. If it does, then it looks like the same states that play a belief-like role in behavior have a belief-like bearing on emotions and images. I argued that the ability to entertain verbal images is not necessary for belief. I saw no distinctive

phenomenology of belief apart from its role in producing images and feelings on the basis of which it would make sense to deny beliefs to non-linguistic creatures.

In the word 'belief' we have a useful tool for describing the mental states of creatures efficiently, with a broad range of behavioral and phenomenal implications packed in. If I tell you that Mary believes there is a cat up in that tree, you will be warranted in drawing a number of conclusions. You know that Mary hates cats, so you figure she will be upset. You figure she will probably go out in the backyard and take the opportunity to "teach the cat a lesson." You figure that in her attempt to do so, she will approach the tree in question. And so forth. The word 'belief,' if used to describe the mental states of Ajax, supplies similar inferential power. If I tell you Ajax believes there is a cat up in that tree, you may then predict that he will be barking excitedly up into the tree and clawing at its trunk, he will be trying to detect any attempt on the part of the cat to escape, he is prepared to give further chase if necessary, he is probably all wound up and, given his rambunctious nature, it will probably require at least fifteen minutes for him to calm down. Our hammer seems to work as well on eight penny nails as it does on ten penny nails, so why should we use it only for the second job? This question gains special point when we don't seem to have anything else in our toolbox that works nearly as well on eight penny nails as that hammer.

It seems to me the advantages weigh heavily in favor of giving the word "belief" a broad meaning, including infants and

animals in our belief talk. Perhaps the most decisive consideration in favor of this approach is just that we don't really have the tools to speak fluently about the mental lives of such intelligent but non-linguistic creatures *without* attributing them beliefs or the other intentional states normally attached thereto. Those who attack the idea of animal belief offer no helpful resources. Suppose we deny that Spot believes the neighbor's cat is in the tree as he stands, clawing at the trunk and barking into the branches above. Certainly Spot is in some mental state regarding that cat and the tree. What would that state be? How are we to describe it? Will we be forced back into behaviorist language and/or neuro-speak?

There are some alternatives. We might wish to retain *most* of the folk psychological apparatus, discarding only belief (and maybe one or two other terms considered inappropriate). Perhaps, though 'belief' is taboo, we can talk about what the infant or animal perceives and expects, what her concepts are, even, maybe, what she "knows" innately about the world. I'm not sure this kind of strategy makes a lot of sense. Can a creature expect or know something about the world, or have concepts, without having beliefs? Why single out belief for rejection? And if belief and desire are crucial elements of our folk psychological explanations, as they often are said to be, are we to abandon all such explanations -- or are "expectation" and desire explanations somehow better? If we are going to give folk psychology any

reign at all in our talk about infants and animals, it seems we have to let ourselves talk about beliefs.<sup>29</sup>

Another possibility, if we want to talk about the cognition of infants and animals without invoking the concept of belief, is to invoke computer analogies, quite popular these days. If we are serious and purist about our computer analogies, however, and see *adult* brains also as essentially big computers, and we think the same about animal and baby brains, why not grant that animals and babies have beliefs as adults do? If, on the other hand, we just want to use computer analogies as a way to get around talking about baby beliefs and we don't think adult human brains are really big computers, then we have committed ourselves to the unlikely position that babies, cognitively, are more like computers than like adult humans.

Other means of talking about infant and animal cognition without attributing beliefs to them include (1.) actually using the word 'belief' to describe what's going on in their heads but insisting continually that such use is metaphorical, or (2.) introducing a completely new set of terms, meant to apply specifically to the cognition of large-brained, intelligent creatures without language. I trust it is obvious why the second strategy has not been widely pursued. The first strategy, if taken seriously, collapses into an unclear version of the second: if the word 'belief' is to be consistently given two different readings, wouldn't it just make more sense to employ a different word and so avoid ambiguities? A third strategy would be to

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<sup>29</sup> See also Routley (1981).

introduce a new taxonomy of mental states, either with or without roots in folk psychology, meant to apply both to humans and animals. I take it that this is what the "eliminativists" in philosophy of mind, for example, would like to do (Churchland 1981; Stich 1983). Although I am not opposed to such an ambitious project, we seem a long way off from being able to pull it off successfully.

If we take folk psychology seriously, as I have been doing, then we must grant that beliefs play a central, fundamental role in our cognition. To deny, then, that a creature has beliefs carries with it the suggestion that the creature's cognition, lacking this crucial element, has a radically different structure from our own. An immense gulf yawns open, dividing creatures capable of belief from those incapable of it, and we find ourselves standing alone on one side. Not only does this seem a mischaracterization of affairs, but it is one with potential moral consequences: If infants and animals are seen as so alien to us as not even to share the fundamental elements of our cognitive processing, might it not be tempting to accord their interests and welfare less weight than if we saw them as closer kin? Surely it does not follow as a matter of logic that those who wish to deny beliefs to these creatures hold them in less esteem -- I know at least one Davidsonian I am sure is an excellent parent! -- but it would not be surprising, I think, to find a correlation between the degree of regard in which a person holds such creatures and the degree of similarity that person finds between the creatures' cognition and her own.

Certainly there *is* a great divide between the cognition of creatures like ourselves and the "cognition," if we want to call it that, of creature with what might be more aptly called a cluster of nerve cells than a proper brain. To use a pre-Darwinian metaphor, we might think of such creatures as lying at the far end of a smooth and gentle spectrum proceeding upward by imperceptible degrees toward humanity. At what point along this spectrum the capacity for phenomenal experience appears, and if it appears suddenly or fades in by degrees, I am not prepared to say. But it seems to me that the act of withholding the word "belief" from description of a creature's cognitive capacities should be used to mark the real difference between our cognition and that of spiders, insects, and worms<sup>30</sup> rather than the important, but comparatively superficial, differences between our cognition and that of our closest neighbors on the spectrum.

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<sup>30</sup> However, Charles Darwin said of the mental qualities of worms, "We have seen that worms are timid... Judging by their eagerness for certain kinds of food, they must enjoy the pleasure of eating. Their sexual passion is strong enough to overcome for a time their dread of light. They perhaps have a trace of social feeling, for they are not disturbed by crawling over each other's bodies, and they sometimes lie in contact. (1911, p. 34). Darwin also argued that worms "possess some degree of intelligence" (1911, p. 99). If one is inclined to be a Darwinian in this respect, one might wish to populate the far end of the spectrum with bacteria and algae instead.