

ENZO AND ME:
ESSAYS CONCERNING THE MENTAL LIVES OF HUMANS AND OTHER ANIMALS

by

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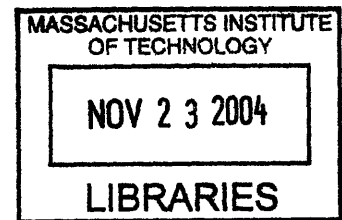
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ABSTRACT

This dissertation explores the relation between the mental lives of humans and animals, and argues that many of the differences that have been proposed by philosophers to set humans apart from animals are erroneous.

Chapters 1 and 2 contest the hypothesis that the mental lives of humans and animals differ in kind because the content of human experience is conceptual -- it necessarily involves the possession and exercise of concepts that characterize that content -- whereas the content of animal experience is nonconceptual. In Chapter 1 I present an argument to expose the serious costs of such a view: if the content of our experience is entirely conceptual, then we cannot account for concept learning. The cost of denying nonconceptual content of experience is a radical nativism about concepts, a position which is both biologically and psychologically implausible.

Chapter 2 further explores the implications of the learning argument put forth in Chapter 1. I consider the most effective defense conceptualists have wielded against arguments for nonconceptual content of experience: that our ability to form demonstrative concepts (concepts such as “that shade”) obviates the need for nonconceptual content in experience. I show that nonconceptual content of experience is crucial in enabling us to form novel demonstrative concepts. Thus, far from being a strategy that allows the conceptualist to circumvent the need for nonconceptual content, appeal to demonstrative concepts further commits him to nonconceptual content of experience.

Chapter 3 considers what cognitive resources are required to have propositional attitudes. I argue against Davidson’s claim that animals can’t think, because having propositional attitudes requires language. I consider Dennett’s and Fodor’s positions on propositional attitudes, and offer alternative criteria to theirs for what features a system must have to have propositional attitudes.

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PHILOSOPHUS MANISSE

PREFACE

What is the relation between the mental lives of humans and animals? This question frames my dissertation. I focus on attacking a few versions of what I call the Discontinuity Thesis, the thesis that the mental lives of humans and animals differ in kind. Much has been made of the differences between ourselves and other species: only humans laugh, only humans are made in the image of God, only humans use tools, only humans use language. Many of these claims are false or senseless, or not particularly significant. However, our linguistic abilities and animals' lack thereof is undeniably a major difference between humans and other species. But what sorts of things follow from this? Many people believe that thought requires language, and have argued on this basis that animals cannot think, that they lack concepts, and even that they lack sentience. I start from a perspective that does not privilege language in this way. I assume instead that mental representation underlies both language and thought, and explore some of the consequences of this view. What sorts of mental representations are involved in our cognition and in that of animals, and are they of the same or different types? What are the vehicles for contentful thought? What are concepts, and do animals have them? What sort of representations of self and other are available to nonlinguistic creatures, and how do such representations structure their world?

This dissertation addresses a subset of these questions, and in so doing makes contact with a variety of traditional questions in the philosophy of mind. In Chapter 1 I contest the version of the Discontinuity Thesis that claims that the mental lives of humans and animals differ in kind because the content of animal experience is entirely nonconceptual, whereas the content of human experience is entirely conceptual. Such an hypothesis requires that only

humans have the capacity for conceptual thought, which is plausible only if concepts are mental representations which constitute symbolic thought, a capacity which animals arguably lack. Assuming such a view of concepts, I argue against conceptualism, the claim that the content of human experience, including perceptual experience, necessarily involves the possession and exercise of concepts that characterize that content. I present an argument to expose the serious costs of such a view: if the content of our experience is entirely conceptual, then we cannot account for concept learning. The learning argument demonstrates that nonconceptual content must enter the awareness of the experiencing human subject in order to provide the contentful raw material for conceptual construction. The cost of denying nonconceptual content of experience is a radical nativism about concepts, a position which is both biologically and psychologically implausible.

In the second chapter I further explore the implications of the learning argument. I consider a few objections to conceptualism, from the literature and my own, and then describe the most effective defense conceptualists have wielded against arguments for nonconceptual content of experience. Conceptualists commonly invoke our ability to form demonstrative concepts (concepts such as “that shade”) to obviate the need for nonconceptual content in experience. By examining the role attention plays in demonstrative concept formation and the way our attentional mechanisms work, I show that nonconceptual content of experience is crucial in enabling us to form novel demonstrative concepts, and thus blocks the demonstrative defense against the learning argument. Thus, far from being a strategy that allows the conceptualist to circumvent the need for nonconceptual content, appeal to demonstrative concepts further commits one to the continuing role of nonconceptual content of experience. This suggests that nonconceptual content of experience plays a role in

our continuing ability to enrich our conceptual repertoire with novel concepts, as well as in our demonstrated ability to refine the application of concepts we already possess.

Chapters 1 and 2 primarily concern the nature of human thought and experience. Chapter 3 turns to the nature of animal thought. I attack the version of the Discontinuity Thesis that claims that the mental lives of humans and animals differ in kind because only humans have propositional attitudes, such as beliefs, desires, and so on. I briefly review a few major thinkers' positions on propositional attitudes. Donald Davidson has claimed that animals can't think: they cannot have beliefs, desires, or other propositional attitudes. He believes this is so because animals lack language, and having propositional attitudes requires language. I briefly examine Davidson's various arguments, and focus on the strongest one: Having propositional attitudes requires having a concept of belief, and that having a concept of belief requires having language. My analysis shows that Davidson's argument fails. On certain conceptions of what 'concept of belief' means, it is empirically false that having a concept of belief requires having language; on other conceptions, it is *a priori* false that propositional attitudes require a concept of belief. The apparent plausibility of Davidson's argument depends upon a slide between these two interpretations. Furthermore, I argue that Davidson's own favored view of how language gives rise to a concept of belief is incoherent, and that his story must presuppose what it hopes to show. I briefly examine Daniel Dennett's instrumentalist conception on what it takes to have propositional attitudes, and reject it as too liberal, and useless for scientific purposes. Jerry Fodor postulates that propositional attitudes require a language of thought. While in the abstract this promises to pick out roughly the intuitively correct set of believers, I don't think Fodor's hypothesis

works as a practical guide to identifying systems with propositional attitudes. I offer alternative criteria for what features a system must have to have propositional attitudes.

Thus, my aim in this dissertation is emphasize the extent to which we are similar to other animal species, by dispelling certain versions of the Discontinuity Thesis. In particular, I argue here that our mental lives are continuous with those of animals in two ways: that (1) humans, like animals, have nonconceptual content of experience, and (2) at least some animals, like humans, can have propositional attitudes.

Chapter 1: A New Argument for Nonconceptual Content

The debate about nonconceptual content is a debate about what theoretical entities need to be invoked in order to explain experience and other mental states. Conceptualism, the thesis that the representational content of our experience is entirely conceptual, is famously championed by John McDowell, Wilfrid Sellars, and more recently, Bill Brewer.

Conceptualists invoke the same entities, concepts, for explaining both thought and perception. Those who oppose conceptualism, nonconceptualists such as Christopher Peacocke, Sean Kelly, Richard Heck, and José Bermúdez, disagree that perceiving is to be explained in terms of concepts, and argue instead that our perceptual experience is at least partly nonconceptual.

To those new to this debate, the question at issue may seem terribly obscure. I can only urge patience -- ‘conceptual content’ and ‘nonconceptual content’ are theoretically loaded terms at whose meanings I can only now gesture; full elucidation must wait until the requisite background is in place. But here is a scenario that will help clarify the nature of the debate: Suppose you attend your first wine-tasting with a friend who is an oenophile, and you both have the good fortune to taste a 1982 Chateau Petrus. Your friend possesses sophisticated wine-concepts that you lack. You taste something that you describe as a fantastic, complex red wine, clearly the best you have ever had the pleasure to experience. Your friend, equally enthusiastic, tastes something he describes as a full-bodied, jammy bordeaux with moderate glycerine content, noticeable terroire, strong tannins, with definite cassis up front and a hint of butterscotch at the finish. Do your actual taste experiences of the wine differ greatly, or merely the judgments you make about your respective, highly similar perceptual experiences? The conceptualist will say that your taste experiences

themselves are different, for the content of your experience is limited by the concepts you yourself possess; the nonconceptualist will allow that your taste experiences can be exactly the same, since you can have experiences with content that outstrips your conceptual repertoire.

Conceptualists are motivated by epistemological worries, such as whether and how our perceptual experience grounds and justifies our beliefs (in short, they think it cannot do so unless the content of such experience is in some strong sense “fully conceptual”). Consequently, the epistemological issues associated with the debate about nonconceptual content – how perception allows us to enter into ‘the space of reasons’ – have received considerable attention.¹ But concepts figure in our mental lives in other significant ways that have received rather less attention in this literature than they deserve. One which will be the focus of the present essay is this: we *learn* concepts, often and perhaps typically *on the basis of* perceptual experience. In this vein, I offer a novel argument for why we have to posit *nonconceptual* content of experience: such content is a crucial input for concept learning.² The upshot of my argument is this: Conceptualism entails concept nativism. That concepts are innate, not learned, is conceptualism’s price, and it is too high a price to pay. Thus, the debate about nonconceptual content also matters because conceptualism leads to a mistaken view about an extremely important psychological phenomenon, concept learning.

Lastly, part of the significance of the debate which has also received far less attention concerns how we are to understand our place in the natural world, in particular, vis-à-vis its other inhabitants: What are the cognitive and mental distances between ourselves and other animals? Conceptualists tend to think that the mental lives of humans and animals differ in

¹ See Sellars (1956) and McDowell (1994).

² The suggestion that nonconceptual content may be involved in acquiring concepts appears in the writings of several philosophers (Bermudez, 1994; Heck, 2000; Peacocke, 2001) but an argument to that effect has not, to my knowledge, been developed. Here I do just that.

kind, whereas nonconceptualists see human and animal mental lives as continuous.³ My interest in this debate is largely related to the implications it has for our understanding of how the human mind fits into the natural order, and how our mental life is related to that of nonhuman animals.⁴

The structure of this paper will be as follows. In part 1 I clarify some important terms and situate my argument in the larger debate about nonconceptual content. In part 2, I present the learning argument. Part 3 clarifies how this argument fits in to the literature on concept learning and nativism, and discusses the degree of commitment to nativism that follows from conceptualism paired with various theories of concepts. In Part 4 I respond to some possible objections to the learning argument, and in the concluding section I briefly explore some implications of the argument.

Part 1: Concepts, nonconceptual content and experience

The literature about concepts and content is often confusing, because we lack an agreed-upon common framework for many of the key terms, and because often the major contributors to the debate have differing fundamental commitments. No single theory of concepts succeeds in explaining all the phenomena we pretheoretically think a theory of concepts should explain. In light of the varying positions on concepts, and rather than

³ From here on, ‘animals’ refers to nonhuman animals.

⁴ Gareth Evans (1982), who introduced the notion of nonconceptual content, mentions several motivations for postulating a form of content distinct from the conceptual: Nonconceptual content captures basic informational similarities between our internal states and those of other non-concept-applying creatures; our perceptual discriminatory abilities outstrip the representational resources of our conceptual repertoire; our experience is more richly textured than any verbal (conceptual) description of it could capture; and finally, the content of our perceptual experiences provides the basis for the content of our judgments. The first and last of these insights serve as the basis for my own argument, though it ought to be noted that the last one has been invoked as a reason to support conceptualism as well.

arbitrarily allying myself with one theory of concepts or another, I frame my argument in such a way that it is applicable to a large family of theories of concepts, so that given that we agree upon broad outlines, details about what concepts are turn out to be immaterial to the success of my argument. In what follows I try to provide a minimal framework within which to approach the debate about the nonconceptual content of experience.

Terms and theoretical commitments

Content: Thought and perceptual experience represent the world as being a certain way. The content of a thought, or the content of an experience, is the way that thought or experience represents the world as being.

Concepts: There is widespread agreement that concepts determine or refer to categories of objects⁵: the concept DOG, for example, refers to or picks out dogs.⁶ Beyond this, however, there is little agreement about what concepts are. Evans (1982) and Peacocke (1992), for instance, take concepts to be abstract objects, like meanings or senses. Others take concepts to be mental tokens, like words in the head, or representations of prototypical features (see Fodor, 1998a; Prinz, 2002). According to all these views, however, there are features of our psychological states in virtue of which we do, or do not, possess certain concepts. Thus, the claim that we possess a concept indicates something about the characteristics of our psychological states. It is this common intuition that I will rely upon, formulating my argument in terms of types of psychological states and concept possession. For ease of exposition, I assume that concepts are mental tokens.

Theories of concepts generally fall into two broad families, 'low' and 'high' (Smith, 2002). Low theories of concepts hold that what it is to have a concept is to have a certain

⁵ 'Object' here is to be construed broadly, to include properties and other abstract entities.

⁶ As is customary, concepts are indicated with capitalization.

ability or disposition to act differentially with regard to a set of entities (typically, the ability to categorize or discriminate things to which the concept applies). Indeed, according to the low view, any demonstrable natural sensitivity to differences in the world suffices to warrant attribution of a concept to an organism. So on the low view, humans and nematodes both are conceptual creatures, though the range and complexity of their conceptual repertoires differs greatly.

Concept possession requires much more sophisticated machinery according to the high view. The high view takes concepts to be (or possessing them to involve) mental representations appropriately linked to a range of things or properties in the world, such that tokening of these mental representations underlies a host of related abilities, including the ability to think about those things or properties. For example, while having a concept of *x* in part explains our ability to categorize *x*'s and discriminate *x*'s from other things, it also – and more significantly – explains our ability to think about *x*'s by deploying the concept *x* in active thought. Importantly, these mental representations have a symbolic element, and they can be combined in contentful ways.⁷ Most philosophers and psychologists embrace one or another high theory of concepts.⁸ Fodor's (1998) theory of concepts is a good illustration of a high theory: a concept is a word in the language of thought, nomologically linked to things in the world that it is a concept of.

⁷ This is related to the view that concepts are intimately related to language, or that there is something language-like about concepts. According to the high view, while humans are clearly conceptual creatures, it remains an open question whether nonhuman animals are as well.

⁸ According to the most likely interpretations, Evans (1982), Fodor (1998a), McDowell (1994), Peacocke (1992) and Smith (2002) are high theorists, although some, such as McDowell and Peacocke, do not directly address the issue of mental representation.

My argument against conceptualism applies to high theories of concepts.⁹

Conceptualists adhere to a high theory of concepts, for they typically view conceptual abilities as sophisticated ones, tied to linguistic abilities, and to the capacity for abstract thought¹⁰. McDowell (1994, Chapter 3), for instance, emphasizes that he does not mean to deflate ‘conceptual’ when he says that experience is conceptual through-and-through. Conceptual capacities must be able to be exploited in active thinking, and open to rational reflection (McDowell, 1994, p. 47).

Deployment and possession: A thinker deploys or exercises a concept by tokening it, or using it. A thinker is said to possess a concept if that concept is available for deployment. Thinkers may possess concepts they never deploy, but they cannot deploy a concept they do not possess.

Experience: What does it mean for the content of *experience* to be entirely conceptual? It means that all content (ways the world is represented as being) that enters the awareness of the thinker does so entirely by means of conceptual representations, or concepts. For it to be nonconceptual means that this is not the case.¹¹

⁹ Recall that one implication of the debate about nonconceptual content concerns our relation to animals. On low theories of concepts, both humans and animals possess concepts, so there is no danger of thinking that human and animal mental lives differ in kind. The threat of discontinuity between humans and animals only arises given a high theory of concepts, since it is arguable that nonlinguistic animals lack concepts. If animals lack concepts, then human and animal mental lives will differ in kind if animal experience is nonconceptual and human experience is conceptual. Thus, the debate about nonconceptual content has strong implications for the relation of human and animal mentality only given a high theory of concepts.

¹⁰ Except Noe (in preparation), who is a low-theory conceptualist.

¹¹ I frame the debate in terms of the content of experience, although the debate about nonconceptual content is sometimes framed in terms of the content of thought. I find this less perspicuous, since the rendering of the issue in terms of thought (NCT: Human thought has nonconceptual content) may be either trivially true or trivially false depending upon what is meant by ‘thought’. If ‘thought’ is taken to mean only ‘propositional thought’, and if, as is common, propositional thought is taken to be conceptual by definition, then NCT is obviously false. In contrast, if ‘thought’ is taken to be any sort of representational mental

Nonconceptual content: the content view and the state view: Richard Heck (2000; see also Byrne (2003)) contrasts two potential ways of interpreting talk of nonconceptual content, the ‘content view’ and the ‘state view’. The content view claims that nonconceptual content is a type of content different in kind from conceptual content, and the nonconceptual content debate is about which *type* of content characterizes our experiences.

The state view claims that rather than there being two kinds of content, there are two kinds of contentful states, distinguished according to the *way* their content is represented.¹² According to the state view, a thinker is in a mental state with (what is perhaps misleadingly termed) conceptual content, if, in order to be in a state with that content, the thinker must possess and deploy the concepts required to adequately describe or specify that content.¹³ A thinker is in a state with nonconceptual content if he can be in a state with that content without possessing or deploying the concepts which specify that content. Thus, according to the state view, the debate about nonconceptual content concerns the proper characterization

state, then thesis NCT is trivially true, because all sorts of subpersonal states, such as the pattern of photoreceptor activity on the retina, or cell activity in primary visual cortex, contain representations of the visual world which are clearly nonconceptual. So only at the person-level (or organism-level), at the level at which content reaches awareness, does the debate about nonconceptual content seem substantive. See also Bermudez (1994). Thus, for clarity’s sake, I frame the debate about nonconceptual content in terms of experience.

¹² Thus, we can distinguish two questions, a) does content come in different kinds? and b) what distinguishes conceptual and nonconceptual states? These questions are *prima facie* independent, though they may turn out to be interestingly related. This is a matter I won’t further address in this paper.

¹³ Although we can only describe the content of mental states verbally, in words which express our concepts, it must be remembered that this is a constraint of the theoretician’s attempts to talk about these states, not obviously a constraint on the possession of these states themselves. Given an informational understanding of content, it is possible that contentful states can be present in systems that lack conceptual capacities entirely (see, for instance, Smith 2002, chapter 3).

of the psychological resources required to be in a representational state with a certain content.^{14 15}

I assume the state view.¹⁶ Underlying my commitment to the state view is the conviction that fundamentally, all content is of a kind: it is all informational.¹⁷ This does not rule out the possibility of further subdividing content according to some criterion. We can define types of content derivatively on types of states, depending on whether or not conceptual mental states are or must be brought to bear in representing that content, and call those types of content conceptual and nonconceptual.¹⁸ I find it more perspicuous to frame my argument in terms of conceptual or nonconceptual representations or states, than in terms of conceptual and nonconceptual content, if only to avoid implying that I hold the

¹⁴ Even Heck, who professes to adhere to the content view, characterizes the nonconceptualist claim in terms that are suspiciously state-viewish: “So the thesis that perceptual content is nonconceptual, as I understand it, implies the claim, highlighted above, that one can be in perceptual states an adequate specification of whose content would necessarily employ concepts one does not possess.” (Heck, 2000 p. 488).

¹⁵ There are two interpretations of the state view which I think are worth distinguishing, which I call the type-version and the token-version of the state view. On the type-version of the state view, some nonconceptualists may hold that the content of some types of states, such as beliefs and desires, are constituted by concepts, whereas the content of other types of states, perceptual states, for instance, are not. It can be asked for each type of state (belief, desire, perception, doubt, etc.), whether it takes a conceptual or nonconceptual content. The nonconceptualist that holds the token state view does not think that the dividing line between states with conceptual and nonconceptual content lines up with divisions between state types like beliefs and perceptual states. Instead, the token state view nonconceptualist can allow that some beliefs be nonconceptual or partly nonconceptual, or that some perceptual states have conceptual as well as nonconceptual content.

¹⁶ Most players in the debate about nonconceptual content are not explicit about whether they hold the state or the content view, and many slide between them. It is arguable that Evans, Peacocke and McDowell hold the content view, and Tye, Brewer and Smith hold the state view.

¹⁷ See, for instance, Stalnaker (1998). Stalnaker argues against the coherence of the content view. He holds that all content is nonconceptual, for he thinks that all content, both perceptual and conceptual is possible worlds content (informational content).

¹⁸ Byrne (2003) also recognizes that talk of conceptual and nonconceptual concepts and states is intertranslatable, though he takes the content view to be primary, and defines a nonconceptual *state* as one that has nonconceptual content.

content view.¹⁹ However, since the term ‘nonconceptual content’ is commonly used in this debate by theorists embracing both the state and content view, where I do use the term ‘nonconceptual content’ in what follows, I should be understood as talking about contentful nonconceptual states.

There is some dispute as to whether the current debate about nonconceptual content presupposes the content view or the state view. As Heck (2000) has argued, Evans, when he introduced the notion of nonconceptual content, had the content view in mind, but he says little about what nonconceptual content might be.²⁰ Theoretical commitments since then have been even less clear. Peacocke and McDowell profess to hold the content view, yet for both, the mark of nonconceptual content is that thinkers can have mental states with a certain content while lacking the conceptual resources required to specify that content. Some of the more recent debate on nonconceptual content also appears to be implicitly aligned with the state view. For instance, in *Perception and Reason*, Brewer defends the conceptualist position by discussing the relations between mental states, and defines conceptual states in terms of concept possession:

A mental state is conceptual iff it has a representational content that is characterizable **only** in terms of concepts which the subject himself must possess and which is of a form which enables it to serve as a premise or the conclusion of a deductive argument, or of an inference of some other kind (e.g. inductive or abductive). (Brewer, 1999 p. 149, author's emphasis)

¹⁹ There are substantive reasons to prefer the state view. If all content is of a kind, i.e. informational, then ways of distinguishing between types of contents will be derivative on ways of distinguishing types of states. There are, at least in principle, clear methodological approaches for investigating the issue of whether or not different psychological resources are required for having states with different contents, whereas I see no corresponding methodological approaches for investigating whether there are different kinds of contents.

²⁰ Even Evans vacillates between language suggesting the content and state views. When he introduces the term ‘nonconceptual content’ he adds that “*nonconceptualized* content” may be more apt, which suggests content represented or grasped in one way rather than another, more evocative of the state than the content view.

Thus, Brewer seems to hold the state view, and appears to hold a high theory of concepts, as evidenced by his emphasis on the use of conceptual states in reasoning. Tye too, while professing to hold the content view, employs a state view of nonconceptual content (see Byrne, 2003):

The claim that the contents relevant to phenomenal character must be *nonconceptual* is to be understood as saying that the general features entering into these contents need not be ones for which their subjects possess matching concepts. (Tye, 1995 p.139, author's emphasis)

Similar statements implicating the state view are evident in Bermúdez(1994), Heck (2000), and Smith (2002, chapter 3). Thus, regardless of whether my framing of the issue is true to its historical roots, it is squarely situated in the terms of the current debate.

To sum up, the argument I will offer for nonconceptual content of experience assumes first that concept possession involves relatively sophisticated symbolic mental representations that are deployable in thought (a high theory of concepts), and second, that the debate about nonconceptual content can be cast in terms of the psychological resources a thinker must possess and deploy in order to represent the world as being a certain way (the state view). As it happens, conceptualists do endorse high theories of concepts, and most appear to accept the state interpretation of the debate.

With this background in mind, let me characterize once again the debate over nonconceptual content of experience. The debate is about whether the content of human experience is exhausted by concepts which the person possesses and exercises, or whether some representational aspects of experience require neither the exercise nor possession of

the concepts which might be needed to adequately characterize that experience.²¹

Nonconceptualists support thesis NC:

NC: The content of experience is (partly) nonconceptual

In what follows, I offer a new argument for NC. I argue that nonconceptual content must be invoked to account for concept learning. To deny NC one must embrace concept nativism.

Part 2. The argument from concept learning²²

All parties to the debate about nonconceptual content agree that nonconceptual content, if such there is, is minimally a feature or component of our perceptual experience.

Conceptualists like Brewer, for instance, maintain that our perceptual experiences are wholly conceptual: “Perceptual experiences therefore have representational contents which are characterizable only in terms of concepts which the subject himself must possess...” (Brewer, 1999, p 203). And so it is indeed to perception that I do look in order to formulate my argument for nonconceptual content.

I first present the argument, then comment on various steps afterward. How does a thinker come to have lexical concepts with perceptual content, such as RED?²³ Unless one

²¹ Note, the thesis is not that there are some contents that can only be represented conceptually, but that *all* are. It is plausible, for instance, that abstract ideas such as justice or democracy require the deployment of concepts (JUSTICE and DEMOCRACY) for their representation; what is at issue is whether having other contentful aspects of experience, for instance, experience of a particular shade of red, requires that the thinker possess and deploy the corresponding concept (RED₃₇₁, for example).

²² The argument offered here is novel, but it is not wholly unforeseen. Peacocke (2001) suggests in passing that nonconceptual content could provide the requisite content for construction of concepts, although his comment is more of an appeal to intuition than an argument. Heck (2000) approaches my point more closely, although he concentrates on the need for nonconceptual content in the formation of demonstrative concepts, rather than in concept learning more generally.

takes a rationalist view according to which such concepts are innate, they must be learned.²⁴

The argument begins with an assumption of conceptualism, and then examines whether there is an account of concept learning that is compatible with conceptualism's claims. The argument demonstrates that conceptualism entails that perceptual concepts cannot be learned.

I focus here on cases of perceptual concept learning, and specifically on concepts learned initially from visual experience. My arguments can extend, I think rather unproblematically, to other cases of conceptual learning from perceptual experience, such as learning to associate bird calls with bird species, or particular tastes with categories. Although the argument is general, and is applicable to all lexical concepts that involve a perceptual or recognitional component, for ease of exposition it is framed with reference to an example concept, the concept RED.

The learning argument:

- (1) The content of experience is entirely conceptual.

²³ I restrict the scope of the argument to learning lexical concepts. Lexical concepts are, roughly, concepts corresponding to single words in a language, like DOG, ORYX, TELEPHONE, and so on. The content of phrasal concepts, like BROWN Cow, is generally thought to be composed from the contents of the lexical concepts BROWN and COW. If this is so, we can account for complex or phrasal concepts by appeal to compositionality, and to lexical concepts the thinker possesses. (If not, then the argument will apply to phrasal concepts as well).

²⁴ Learning is especially important if we are concerned with how perception is to justify our beliefs about the world, to ground them in empirical reality. For if we were just born with all concepts innately specified, we would be hard-pressed to give an account of why the tokening of one such concept, our concept RED, would justify us in believing that the things in the world which led us to token it actually were red. Thus, it seems that the conceptualist's epistemological scruples should move him to accept that perceptual concepts are learned.

- (2) If the concept RED is learned, it is learned on the basis of visual experiences with content representing a red object (R experiences).
- (3) Having R experiences is due to the thinker being in a conceptual representational state.
- (4) Having R experiences due to being in a conceptual state either involves deployment of the concept RED or it involves the deployment of other concepts.
- (5) If having R experiences involves the concept RED, then the subject already possesses the concept RED, and so there is no tenable explanation available as to how that experience is responsible for the acquisition of such a concept.
- (6) If having R experiences doesn't involve the concept RED, then learning the concept RED on the basis of R experiences requires that, in the process of its acquisition, the content of the concept is compositionally built up from other concepts the thinker possesses.
- (7) The concept RED is not compositionally built up from other concepts.
- (8) The concept RED is not learned.

Let us go through the learning argument more slowly. Conceptualists will accept step 1 of the argument, which is just a statement of the conceptualist thesis. (1) is to be interpreted according to the state view, discussed earlier. Step 2 is a conditional which elucidates what it means for a concept to be learned. For a concept to be learned, it must be learned on the basis of experience. What does this amount to? A concept is learned on the basis of experience only if its acquisition is causally dependent upon experiential presentation of objects, features, relations, etc., to which the concept applies. So learning on the basis of experience involves being confronted in experience, as a result of perceptual causal contact, with an exemplar of the concept to be learned. Step 2 articulates this commonplace view about learning with respect to a particular concept, the concept RED: Learning RED involves visual experiential presentation of something red. Having contentful experience, as mentioned earlier, involves more than just brute-causal processes; it involves awareness of

representational content of experience. That is, the content of experience is available to the thinker at the person-level.²⁵

Let us call the experiences engendered by visual experiential presentation of red objects ‘R experiences.’ (2) should be uncontroversial: it is neutral as to whether the content of experience is conceptual or nonconceptual; it does not beg the question against the conceptualist.

Step 3 follows from (1): conceptualism entails that the content of R experiences be due to the thinker being in a conceptual mental state, where the conceptual mental state involves the exercise of relevant concepts. Thus, 1-3 show that learning a concept from experience involves the awareness of the representational content of experience; and that, given conceptualism, this awareness involves mental representations that are conceptual.

According to (4), there are two ways the redness of experience can be represented conceptually: by means of the concept RED, or by means of other concepts. Step 5 rules out the possibility of RED being deployed in representing redness as an account of how RED is learned, for certainly such an account is circular. One may think that the conceptualist may deny 5 because he holds that in having an experience of redness one comes to have the concept RED: having the experience *is* acquiring the concept. However, there is no argument available as to why the mere fact that one has an experience with a certain content is an acceptable account of concept *acquisition*. To address this, one would either have to deny that there is any scientifically viable explanation of how acquisition occurs, appealing instead to miracles or magic, or one would have to invoke demonstrative concepts (concepts typically denoted by phrases such as “that shade”). As I shall argue in Section 4 briefly (and in more

²⁵ By ‘person-level’ I mean at a level available to the subject, such that it can enter awareness, etc. This contrasts with content at subpersonal levels, which is content which cannot be accessed by the subject. Propositional thought, for instance, occurs at the person-level, whereas retinal representations of the visual environment do not.

detail in Chapter 2 of this dissertation), demonstrative concepts do not free the conceptualist from the need for nonconceptual content of experience: the process of demonstrative concept formation itself requires explanation, and such an explanation depends upon the thinker having experiences with nonconceptual content. Thus, step 5 indicates that learning RED cannot be accounted for by appeal to perceptual experience whose content requires the deployment of RED.

Steps 6-7 advert to the implausibility that one can learn a concept such as RED purely in virtue of one's possession of other concepts. The idea is this: redness could be represented conceptually without deploying RED if the content of red experiences could be constructed compositionally from other concepts that the thinker possessed. For instance, the content of BACHELOR might be represented by a thinker who lacked that concept if she could put together the concepts MALE and UNMARRIED, which she possessed. However, as (7) claims, there are some concepts, perceptual ones among them, for which giving a compositional story seems impossible.²⁶ It should be noted that this does not mean that other concepts cannot play a role in the thinker coming to possess RED. It is possible, for instance, that the concept COLOR will play some role in an account of the acquisition of RED, but even so, the contribution of that concept will have to be supplemented with other content – namely the visual qualitative content of red, or 'redness' – in order to permit the association of the mental symbol 'RED' with the appropriate perceptual content red as opposed to that of some other color.

Thus, from 4-7, we can conclude that, at least for the purposes of learning a new concept, the content of experiences of red objects cannot be represented by a purely conceptual state. If we are to maintain conceptualism, as (1) ensures, we reach our

²⁶ See Fodor (1998a)

conclusion (8), that the concept RED is not learned. This argument highlights the nativist dilemma for the particular concept used to illustrate it. As long as (7) is true for the concept chosen, the argument succeeds in showing that, given conceptualism, that concept must be innate. If the reader doubts that (7) is true for RED, let him or her substitute a concept he or she regards as a noncompositional or simple concept in place of 'RED' in the argument. Clearly, not all concepts can be compositionally constructed because compositional concepts must be constructed out of more simple ones, so some concepts must be basic. The argument then shows that those concepts are innate. The argument can be extended straightforwardly: it can be run individually for all perceptual lexical concepts, leading to a widespread nativism. Thus, if the "content of a perceptual experience is already conceptual" (McDowell, 1994 p.48), as the conceptualist maintains, then learning perceptually-based concepts is not possible; so nativism follows.

The argument can be further understood to suggest that concept learning, if it occurs, requires nonconceptual content. Clearly, one way we might avoid the nativist conclusion is to deny conceptualism (i.e. deny Step 1). If we allow that the content of experiences of red objects can be nonconceptual, we are provided with contentful elements of experience which arguably can play a role in concept learning, while not requiring us to assume the prior existence of the concept whose acquisition we are trying to explain. A skeptic might protest that concept learning is a problem for everyone, conceptualists and nonconceptualists alike. Not so. While a fully detailed account of concept-learning will doubtless require much more philosophical and empirical work, a sketch of a concept-learning story that is consistent with much of the experimental work in developmental psychology has already been provided by Margolis (1998). The broad outlines of his account may be correct for the acquisition of natural kind concepts. While I will not present his

theory here, it is worth drawing attention to the fact that he postulates that relevant perceptual information is put in association with a dummy concept, or a mental symbol lacking semantic value, in the construction of a new concept. My claim is that this association requires that the concept learner be aware of the perceptual content of experience in order to do this. While Margolis' discussion doesn't explicitly engage with issues of conceptual vs. nonconceptual content, and he neither affirms nor denies that this perceptual information is available to the thinker in nonconceptual form, I suggest that the only way in which such a story can be understood as a story of concept learning is if the perceptual information is taken to be represented by nonconceptual states. Thus, an alternative way of understanding the argument from learning is that if one is to maintain a naturalistic view of psychological capacities, nonconceptual representations must play a role in our experience. Furthermore, content represented nonconceptually is not merely an idle bystander in our cognitive economy. On the contrary, it plays a critical role in concept learning.

My argument confronts the conceptualist with the costs of his position: to be a conceptualist he must embrace concept nativism. Conceptualists appear unaware of this cost. Both McDowell and Brewer, for instance, seem to assume that concepts are learned. McDowell thinks infants are "mere animals, distinctive only in their potential" (McDowell, 1994 p.123), that are transformed through learning language into conceptual beings: social interaction plays an important role in the creation of a conceptual creature. This suggests that he takes concepts not to be innate. Furthermore, he holds that concepts are refashionable on the basis of rational reflection, so they must not be fully formed static entities available to the thinker from the start. Brewer likewise denies that infant cognition is conceptual:

Since it must be acknowledged on all sides of this dispute that creatures who are incapable of conceptual thought do develop into those who are capable of such thought – for otherwise infant perception could simply be characterized fully conceptually from the start – there must be some story to be told about what is involved in this transition... It does not follow that animal and infant perception, on the one hand, and mature human perception, on the other, must each share a common core of nonconceptual experiential content. (Brewer, 1999 pp.177-178)

Although denying that infant experience is conceptual is not equivalent to affirming that concepts are learned, Brewer does appear to think concepts are learned. He recognizes the gravity of the puzzle that the transition from nonconceptual infant to conceptual adult poses for the conceptualist, but, he argues, in the absence of a worked-out concept-learning story, accounting for concept learning is not a pressing problem with which the conceptualist must deal. Perhaps Margolis' story, coupled with the learning argument would be sufficient to convince him that it is time for the conceptualist to seriously consider the nativist implications of his position.

Part 3. Concept nativism

In this section I put nativism and the learning argument in context. I first explore the space of possibilities that a theorist might take on concept attainment. I then discuss the relation of the learning argument to Fodor's argument for nativism, and finally briefly examine the degree to which the conceptualist is committed to nativism for a few prominent theories of concepts. I argue that conceptualists are committed to an implausible version of nativism.

Varieties of concept attainment

It is uncontroversial that normal adult humans can exercise a vast array of concepts,

that as infants, they could not. Let us call any process that accounts for this difference an attainment process. The ability to use concepts is attained over time. But what does this amount to? Nativists hold that concept attainment does not depend upon empirical content; non-nativists recognize the importance of empirical content for concept attainment.

A nativist about concepts holds that the representational structures that are concepts are genetically endowed, either present from birth, or emerging as a result of normal maturational processes without the need for particular external input or effort on the part of the thinker. We can think of innate concepts as concepts whose structure is fully formed independent of experience.²⁷ Nativism is consistent with both a picture in which innate concepts are always available at the person-level (i.e. available for use), and one in which innate concepts are not available to the agent at one time, but are made available at some later time as a brute-causal effect of a particular event or experience. That is, an innate concept, fully formed, could be latent or masked, requiring some event to *trigger* it. Fodor, for example, reconciled his commitment to concept nativism with the empirical facts about conceptual development by claiming that innate concepts are triggered by relevant experiences. It should be noted that triggering is not an alternative to nativism: it is a way of reconciling nativism with observable facts about cognitive development.

What alternatives to nativism are there? The representational structures in mind that constitute or enable the possession of concepts must be constructed in a manner dependent

²⁷ 'Concept nativism' is a term oft used but rarely rigorously explicated. In a recent book, Cowie (1999) however, explores the commitments of various forms of nativism, and suggests that it is most charitably understood as an expression of pessimism for the prospects of understanding concept acquisition, rather than as a psychological claim about the origin of concepts. While I am sympathetic to her analysis, I think that some nativists are pushed to view their position as a claim about concept origin (see Fodor, 1980; Fodor, 2001), and that the pessimism exhibited by nativists is partly a result of taking insufficient notice of the potential power of nonconceptual representations and a too-rigid understanding of learning.

upon external input. Let us call this process of construction *acquisition*. We can distinguish two forms acquisition. First, acquisition could be a brute causal process dependent upon external input that leads to changes at some physiological level, but does not require any attention or cognitive effort or awareness at the person-level for it to occur. Classical conditioning is an example of the former sort of acquisition; it occurs in the lowly sea slug as well as in mammals, and can proceed in the absence of consciousness. A brute-causal acquisition story, one which occurs purely at the sub-personal level, is not one that will explain how we come to have concepts, representations that are available to us at the person level; nor is it one that will allow us to justify our use of concepts to make reference to the external world. Justification does not stem from the causal fact that we are moved to token a concept, but rather from the existence of an appropriate relation between the content of experience and the content of a concept.

The second type of acquisition, for which I reserve the term *learning*, is a person-level phenomenon. When it comes to acquisition of concepts, it is this form of acquisition which best respects data from psychology, as well as philosophical and biological constraints. Learning intimately involves the person-level: it requires effort and attention; it is a goal-driven, cognitive activity. The philosophical intuition is that in concept learning, concepts are actively constructed by thinkers, they do not just occur to them. They are constructed not *ex nihilo*, but on the basis of experience. The content of experience plays a role in fixing the content of the concepts a thinker acquires. We might characterize this view of learning with the slogan “learning is a cognitive achievement.” This, I maintain, is the only viable way to account for concept attainment, for it is the only one fit to explain how concepts can be person-level constructs, available for deployment in thought. If learning is not a person-level

phenomenon, then, it seems, there is no account of how concepts become available at the person-level short of an appeal to miracles.

In sum, there appear to be two options which may account for concept attainment. One is nativism, and the other learning. After I briefly explore the relation of my argument to Fodor's famous argument for concept nativism, I argue that the nativist options available to the conceptualist are ones that don't sit well with current scientific understanding.

Fodor's nativism

The nativist debate has a venerable history in philosophy, in the guise of the debate about innate ideas (Cowie, 1999; Stich, 1975). In the contemporary literature, so steeped in the juices of cognitive science, that ancient debate has been transformed into one about innate concepts. Radical concept nativism came to seem a respectable, if problematic, position when Jerry Fodor openly espoused it in response to his own famous argument that there is no known mechanism that enables a system to develop representational resources more powerful than those it begins with (Fodor, 1980; 1981). Given a Fodorian view of the mind, nativism might seem an inescapable conclusion; I think it is not if one abandons commitment to overly rigid models of learning and purely conceptual content.

Fodor's argument that concepts cannot be learned rested heavily on his identification of learning with hypothesis-generation-and-testing, as well as on an assumption that all mental representation is representation in a language of thought. I believe these commitments represent flaws in his argument for nativism.

We learn many things. We learn what elephants are, we learn to ride bikes, we learn to recognize new people and learn their names, we learn higher math, we learn who to trust, and how to cook a turkey just right. Learning none of these things obviously involves

hypothesis-generation-and-testing, and results from psychology and neuroscience suggest that most learning is not accurately described by the hypothesis-generation-and-testing model. Learning encompasses a broader range of phenomena than Fodor allows. However, while I take Fodor's view of learning to be too restrictive, I respect his intuition that concept learning is a person-level phenomenon. Given a high theory of concepts, concept learning cannot be explained merely by the acquisition of a behavioral disposition, as Pavlovian conditioning might be viewed. To learn a concept is a cognitive achievement, one which influences thought at the person-level. It is a temporally extended process, at the start of which the thinker lacks possession of a concept, and after which the thinker possesses that concept, in that the thinker then has the capacity to employ that concept in thought (see, for instance, Carey, 1991). As I have said before, to view concept learning as just a brute-causal event with person-level sequelae would be to fail to *explain* concept acquisition – the transition from brute-causation to subjective access to content would remain a mystery.

The other element that inexorably led Fodor to his conclusion that concepts must be innate was his commitment to a language of thought. For Fodor, concepts just are words in the language of thought, and they exhaust the intentional resources of the representational system. In other words, Fodor failed to recognize the possibility that nonconceptual representations could enter experience, and play a role in the learning process. Although some theorists who share Fodor's theory of concepts (called 'conceptual atomism') have attempted to demonstrate that such a theory is compatible with concept learning (Margolis, 1998), I argue below that this is only so if the theory of concepts admits of nonconceptual representations in experience. Thus, I think Fodor's commitment to a language of thought implicitly ruled out consideration of nonconceptual content. Fodor's conclusion that all concepts are innate is mistaken; a broader view of learning, and openness to nonconceptual

content make a learning account possible (It is worth noting that recently even Fodor has begun to deny radical concept nativism.)

In this section I have tried to relate my argument for nativism to Fodor's. In essence, one can view my argument as a more general instance of Fodor's. The differences are that the model of learning I embrace need not be as restrictive as hypothesis-generation and testing, though it is also learning at the person-level. Secondly, Fodor's argument led him to embrace radical nativism, despite its implausibility, because he could see no way to avoid such a conclusion. However, I think he could see no alternative, in part, because his theory of a language of thought implicitly committed him to conceptualism. I suggest instead that one take the argument from learning as a *reductio* of conceptualism; by admitting nonconceptual content of experience one can reinstate the possibility of concept learning.

What degree nativism?

There are a number of reasons to reject radical nativism. Here I will mention only one: there is just no scientifically plausible story one can give that can account for the range, number, and apparent unboundedness of concepts that we do or could possess. We are just animals, an evolutionarily recent departure from our nonlinguistic relatives; ontogenetically, we begin as single cells containing an informationally finite genetic blueprint. This being so, we ought to be able to offer a naturalistic account of where at least most of our concepts come from; that a concept such as UMBRELLA is innate is not a viable option.

I do not wish to argue that any degree of nativism is sufficiently troubling to warrant the abandonment of conceptualism; some concepts may well be innate, and ultimately the viability of theories in which some concepts are innate is an empirical issue. My main aim so far has been to show that conceptualism entails nativism. It remains to be seen whether the

degree of nativism entailed by conceptualism is pernicious enough to warrant a rejection of conceptualism. Here I will briefly sketch the nativist implications for some prominent theories of concepts on offer today. I suggest that the theories that are available to the conceptualist commit him to an unacceptable form of nativism, whereas the ones that involve a limited nativism are not open to conceptualists.

Core concept nativism. For context, I begin with a theory whose commitments to nativism are relatively constrained, called 'core concept nativism'. A core concept theory is espoused by a number of developmental psychologists (Carey, 1991; Leslie, 1994; Spelke & Newport, 1998) as being most consistent with the data from developmental psychology. The general idea of core concept nativism is that a handful of fundamental concepts are not learned. The spatiotemporal object concept, small number concepts, and some folk psychological concepts are thought to be core. Reliance on innate core concepts combined with information gleaned from experience is generally thought to account for construction of new concepts.²⁸ For core concept nativists, then, a few basic concepts are innate, most are learned.

Notably, the core concepts posited are not observational or perceptual concepts; they are more abstract. Information characterizing perceptual concepts is thought to come through experience; thus, concept construction in core concept nativism seems to rely upon the admission of nonconceptual content. Furthermore, to the extent that perceptual information is involved in characterizing complex kind concepts, and to the extent that these are not compositional (see below), one would expect these too to depend upon access to nonconceptual content of experience. Thus, the limited nativism of a core concept nativist theory is not an option available to the conceptualist. It relies upon nonconceptual content

²⁸ See Prinz (2002) for arguments that almost all concepts have perceptual elements.

to account for the learning of most concepts. In what follows I discuss the nativism implied by two kinds of theories of concepts that are compatible with conceptualism.

Conceptual atomism. Fodor's conceptual atomism is one of the most thoroughly elaborated theories of concepts in philosophy. Its core principle is that possession of any lexical concept is independent of possession of any another (Fodor, 1990; 1998a). Although Fodor once accepted radical concept nativism (see above), he no longer does (Fodor, 1998a), and some of his followers, realizing that nativism is a pill few will swallow, try to reconcile conceptual atomism with a story for concept learning (Margolis, 1998, discussed briefly above). Without going into detail about conceptual atomism or the learning story meant to support it, I think I can demonstrate that unless the conceptual atomist recognizes nonconceptual content, he will be committed to the most thoroughgoing form of nativism.²⁹ The version of my argument tailored to conceptual atomism is much the same as the general argument presented earlier. What differs is that, since according to conceptual atomism lexical concepts are not compositionally structured, no lexical concept can be built out of other concepts. Nor can the learning of any lexical concept (logically) depend upon already possessing others. Thus, appeal to a set of basic concepts is an option unavailable to the conceptual atomist. If learning a new concept does require any empirical content, then the content upon which the construction of a new concept depends must be content represented nonconceptually. Thus, for the conceptualist conceptual atomist, one who denies that there is nonconceptual content, *all* concepts must be innate. Needless to say, such radical nativism is unacceptable.

²⁹ Although Fodor does not address the issue of nonconceptual representations, I believe that his commitment to a language of thought is implicitly a commitment to conceptualism. His own argument for concept nativism suggests that this is so. The structure of Margolis' account of concept learning suggests that he recognizes the need for nonconceptual content, and perhaps Fodor would now as well.

Compositional theorist: The compositional theorist posits a wide array of innate basic concepts, combinations of which suffice to form all other concepts. There is good reason to think that this is not a plausible theory of concepts, since conceptual analysis has failed to yield analyses of many, if any, concepts in terms of more basic ones without remainder.³⁰ Nonetheless, my argument suggests that if one is to espouse a compositional theory of concepts, one must take as innate all perceptual concepts, as well as other concepts that are intimately linked to perceptual identification. The conceptualist faces an uneasy tension here: the version of nativism the conceptualist compositional theorist is forced to endorse is as strong as the set of basic concepts that turn out to be necessary to form all other concepts; however, the smaller the set of basic concepts, the less plausible the commitment to compositionality becomes. Although this form of nativism is not as radical as that entailed by conceptual atomism, it is still problematic. The fineness of grain of perceptual concepts suggests that the compositional theorist will have to posit an unwieldy number of innate concepts; the commitment to the high view of concepts entails that these cannot be construed merely as dispositions to discriminate, but they must rather be symbolic elements of thought. Thus, the compositional theorist will have to posit a large, perhaps infinite, set of basic perceptual concepts as innate.³¹

As I have argued, the conceptualist, in holding that the content of human experience is entirely conceptual, cannot offer an explanation of how we come to have concepts in the first place: he must take at least some concepts as given, as innate. The degree of nativism to which a conceptualist must be committed varies somewhat with his preferred theory of concepts, but no version of nativism available to the conceptualist sits well with what is

³⁰ See Fodor (1998a; 1998b) for a series of arguments against a compositional base for lexical concepts.

³¹ I note, however, that Fodor (1981) does not see this as a problem, and argues that neither do empiricists.

known from the natural sciences. Given our phylogenetic and ontogenetic background, the forms of nativism entailed by conceptualism are not plausible accounts of concept provenance. I have suggested that by admitting content of experience that is not conceptual, the nonconceptualist can explain how concepts are constructable; this allows him to account for readily observable phenomena such as how infants, with limited conceptual abilities, mature to master a rich conceptual repertoire. Thus, I see the learning argument as a providing a new reason to embrace nonconceptual content.

Part 4. Some objections

In this section I briefly consider some objections to the learning argument. These are 1) concept learning is a brute causal phenomenon; 2) concept learning does not require awareness; 3) concepts are learned implicitly; 4) there are no recognitional concepts; and 5) demonstrative concepts can account for concept learning. As I will explain, the first three objections are closely related.

To object to my argument by maintaining that concept learning is a brute causal phenomenon is to set brute causation against the view of learning which I have proposed. Since I assume that concept learning is a causal phenomenon, we are concerned with what “brute” means here. The only reading under which such an objection contrasts with my picture is one in which “brute” indicates a process not open to awareness, or not available to the subject at the person-level. Thus, objections 1 and 2 are expressions of the same worry, in effect denying Step 2 of my argument, that concepts are learned on the basis of contentful perceptual *experience*. A psychologically sophisticated objection to that same claim might be that concept learning is a manifestation of *implicit learning*, a psychologically described

learning phenomenon which occurs in the absence of awareness by the learning subject.³²

Thus, it too is a version of the same worry, but this objection rests upon a misunderstanding of the phenomenon, so I discuss it separately.

Let me begin with an intuitive defense of the commitment to the idea that content must enter awareness in order to account for concept learning. Consider the sort of scenario in which the construction of a new concept would *not* require the awareness of intentional content. On this view, concept learning would be a causal process unavailable to the cognitive agent. Such a brute causal process requires that the structure of the mental representations develops automatically, either by innately specified means, or via impingement from the environment. Consider an example of such a brute causal process. Imagine, for instance, being hit on the head, and as a consequence of the blow coming to have a new lexical concept. Despite the fact that a new concept is attained, we would not consider this a case of concept *learning* – it would be more like a case of *triggering*, a merely causal process that does not exercise the cognitive abilities of the subject. Concept learning, in contrast to *triggering*, is by definition a cognitive achievement. It is difficult to see what sort of cognitive achievement there could be in a purely causal process that doesn't involve the subject's awareness of content. Furthermore, as in the blow to the head case, the way in which the implicit concept becomes explicit, or available to the cognizing subject for use in thought, remains a mystery.³³ So since by hypothesis concepts are representations available in

³² See, for example, Cleeremans, Destrebecqz, & Boyer, (1998).

³³ Connectionist models might be thought to provide an illustration of the brute causal approach; indeed, some have claimed that training regimes in connectionist networks result in concept learning. So, for example, Churchland (1995, chapter 4), claims that a model network that is trained to discriminate rocks from mines learns ROCK and MINE concepts. Thus, one might argue that connectionism provides proof of possibility that concept construction could take place at a subpersonal or nonconscious level. However, for several reasons neural network models fail to be counterexamples to the learning argument. First, neural networks of the rock/mine variety, if they are models of concept learning at all, fall

thought, and thus at the person-level, the conceptualist would still owe us a plausible story for how the subpersonal representation is made available to the person-level, so that content, heretofore unavailable to the thinker, becomes freely deployable in thought.

Implicit learning, however, appears to be a bona fide biological phenomenon.³⁴ So, the third objection might be: What if concepts are learned implicitly? This objection, however, relies upon a misunderstanding of what implicit learning is. Implicit learning involves the learning of an association between stimuli in such a way that the subject is unaware *that she is learning that association*. It is not a phenomenon in which the subject is unaware of the stimuli themselves. The debate about nonconceptual content is one that concerns whether perceptual information enters awareness independently of conceptualization. It is possible that concepts are learned implicitly, in that the subject is unaware of *associating* a mental symbol with what is perceptually represented, but this still requires that the subject be aware of what is perceptually represented. Thus, data from implicit learning do not threaten the argument from concept learning.

The fourth objection, that there are no recognitional concepts (not even RED) is raised by Fodor in a paper by that name (Fodor, 1998c; 1998d). It turns on the assumption

under the dispositional category of theories of concepts, where having a concept just is evincing an ability to discriminate or categorize. As I stipulated earlier, the learning argument, and the debate about nonconceptual content in general, is one that arises only in the context of high theories of concepts, not low ones. Secondly, such models are biologically very unrealistic, so it is difficult to see how they could apply to issues about human concepts and problems of human learning; network training requires instruction and feedback, implementation of which in a biological system arguably would require awareness of the results of categorizing attempts. Finally, even if such models were admitted, they would serve only to show how subpersonal representations can be constructed, since network models have no correlate of awareness. The step from subpersonal construction of the mental representation to availability in consciousness remains as much a mystery given the connectionist story as it is in the story of concept attainment by a blow to the head.

³⁴ An example of implicit learning is the following: If a subject hears a seemingly random sequence of tones that has an embedded pattern, under certain conditions he can recognize the pattern in other tone sequences, even without knowing what pattern it is he is picking out. Semantic priming is another example of implicit learning.

that the perceptual concepts the learning argument considers are recognitional concepts in Fodor's sense: i.e., that they are stereotypes (or prototypes). The argument exploits Fodor's claim that conceptual content must be compositional to account for the systematicity and productivity of thought, and his observation that good-instancehood does not compose: a good instance of a fish is not a good instance of a pet fish. The argument roughly runs as follows: 1) concepts are compositional; 2) stereotypes are not compositional; so 3) concepts are not stereotypes; but 4) recognitional concepts, if there are any, are stereotypes; therefore 5) there are no recognitional concepts.³⁵ There are a number of responses this argument invites, not all of which I will discuss here. The most important to note for our purposes is that the objection does not apply to my argument: perceptual concepts as I have understood them are not necessarily stereotypes; what is necessary is that the concept be learned in response to some perceptual experience. Secondly, Fodor's argument applies to concepts *constituted* by perceptual criteria; the learning argument makes no metaphysical claim about what constitutes perceptual concepts, only a claim about how they are learned. The criteria of application for RED, for instance, may be "to all and only red things", which is not a perceptual criterion at all, despite the fact that RED must be learned through experience with red things. All that my argument is committed to is the obvious claim that if perceptual concepts are learned, they are learned on the basis of experience.

The final objection is a difficult one, indeed, and one to which I will only be able to gesture at a response here. It is treated more fully in the next chapter of the dissertation. What if concept learning involves demonstrative concepts in place of nonconceptual content? That is, if our perceptions involve perceptual demonstrative concepts, and if

³⁵ The argument presented above is somewhat simplified. Fodor runs it in terms of possession conditions, with a recognitional capacity being a possession condition constitutive of a recognitional concept.

awareness of that conceptual demonstrative content is what is used in constructing a nondemonstrative concept, perhaps we can do away with the need for nonconceptual content of experience to account for concept learning. This is the objection McDowell and Brewer would probably lean on, and if it succeeds, the dilemma posed by my learning argument would be a false one: one would not need to choose between nativism and nonconceptualism; we could, in perceiving, employ demonstrative concepts to represent the content that we then use to construct our nondemonstrative concepts.³⁶ This would obviate the need for nonconceptual content in perceptual experience, while still allowing us to explain where the representational content of our concepts comes from.

While proper treatment of this objection requires an extensive foray into demonstratives and attention (see Chapter 2 of this dissertation), I will briefly sketch my strategy for countering this objection. We must first distinguish between two possible ways of conceiving of demonstrative concept formation. On one, having an experience just *is* acquiring a demonstrative concept; on the other, forming a demonstrative concept requires some sort of non-trivial psychological work. The former understanding of demonstrative concepts is the one to which conceptualists must appeal, but in doing so they err, both on empirical and on philosophical grounds. Demonstrative concept formation is non-trivial: it involves complex attentional mechanisms and person-level awareness. Equating experience with formation of a demonstrative concept, as the conceptualist must do, merely ignores or magically assumes what needs to be explained about concept formation, namely what it takes to convert an aspect of experience into a symbolic representation that can be used in thought.

³⁶ McDowell and Brewer invoke demonstrative concepts to respond to a different objection to conceptualism, the richness argument. However, I imagine that they would invoke them to account for concept learning as well.

The proper understanding of demonstrative concept formation requires that we recognize it as a psychologically sophisticated process. Demonstrative concept formation requires that attention is directed to and fixed upon the object or quality to be demonstrated. However, in order to appropriately focus attention, there must already be something articulated in our experience for us to focus our attention upon. Take visual experience, for example. Suppose we are going to form a demonstrative concept of an object O not previously encountered, for which we lack a concept. In order to form a demonstrative concept, we must delineate with attentional mechanisms that part of visual space that corresponds to O. However, since we have never before encountered O, we have no pre-experiential information about O's boundaries. We must therefore rely upon the deliverances of experience to provide us with content representing that object, in order to successfully delineate it with attention.³⁷ Since, by hypothesis, this something in our experience cannot be conceptual, it must be nonconceptual. Thus, demonstrative concept formation itself requires nonconceptual content, so it cannot provide the conceptualist with a way to avoid recognition of nonconceptual content of experience.

Part 5. Concluding thoughts

Here I have argued that conceptualism entails concept nativism. I have suggested, furthermore, that the varieties of nativism open to the conceptualist are implausible. The implausibility of the types of nativism to which conceptualists must be committed provide a novel reason to dismiss conceptualism, and embrace thesis **NC**: The content of experience is (at least partly) nonconceptual.

³⁷ The concept 'object' is insufficient for the task, for it does not provide discriminatory information that would guide our attention to correctly delineate O as opposed to some other object.

The extent to which experience involves nonconceptual states remains an open question. However, the basic intuitions which underlie the learning argument can be drawn upon to argue that nonconceptual states play an ongoing role in experience. Some conceptualists seem to suggest that considerations which apply to infants do not necessarily apply to mature human thinkers, implying that even if they were to have to assent to a role for nonconceptual content in experience during concept acquisition, no such admission would be necessary once basic concepts are acquired. I see little reason why such a basic mode of cognition should be invoked early in life only to be wholly supplanted, rather than merely augmented, by conceptual thought. It is implausible that nonconceptual content plays a role early in ontogeny, before a person masters the concepts she will employ as a fully conceptual thinker, but fails to play a role in the cognitive lives of mature thinkers. There is a case to be made for a role for ongoing nonconceptual content in experience, in novel concept learning, in the dynamic formation of demonstrative concepts, and in refinement of existing concepts. Recall the scenario we began with, your encounter with the 1982 Chateau Petrus. Due to your enthusiasm for the grape, you begin to attend wine-tastings on a regular basis, and over time, your conceptual repertoire becomes equally as sophisticated as your friend's. While some of your sophistication will be explained in terms of concept learning, some may be explained in terms of refinement of concepts you already possess. An account of concept refinement will also make reference to nonconceptual content of experience.

In addition to illuminating the nature of human experience, the debate about nonconceptual content has bearing on our understanding of how our mental lives relate to those of nonhuman animals. The argument from learning provides compelling reason to reject conceptualism. If indeed the content of human experience is nonconceptual, and, as many think, the content of animals' mental states is wholly nonconceptual, then a strong

version of a conceptualist 'discontinuity thesis' (the thesis that the nature of the representations that underlie human and animal mental lives differs in kind because the one is wholly conceptual, the other nonconceptual), is untenable. A rejection of this version of a discontinuity thesis still leaves open many extremely interesting questions about how to characterize animal mentality, and how it relates to our own mental lives.

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Chapter 2: ‘That’ response doesn’t work: Against a demonstrative defense of conceptualism

“It is our experience of the world that puts us in a position to think about it.” – John Campbell, *Reference and Consciousness*, p.1

Conceptualism is the thesis that the content of experience is entirely conceptual. In the first chapter of my dissertation I argued that conceptualism commits one to concept nativism, and suggested that the nativist commitments entailed by conceptualism were too high a price to pay; they provide a reason to deny conceptualism. In this chapter I focus upon the strongest objection to my claim that conceptualism entails nativism: demonstrative concepts enable us to avoid the entailment claim of the learning argument. I will argue that a proper understanding of what is involved in the formation of demonstrative concepts will show that appeal to demonstrative concepts, rather than freeing the conceptualist from nativist burdens, itself requires the abandoning of conceptualism.

This chapter will be structured as follows. In Part 1, I elucidate the conceptualist thesis, and in Part 2 I review two arguments against conceptualism, one from the literature, and one my own. I discuss the standard conceptualist response to the first, which involves an appeal to demonstrative concepts. I then sketch what I take to be the best response to my learning argument, which also involves appeal to demonstrative concepts. In Part 3, I briefly characterize demonstrative concepts, and argue that attentional processes are essential to their formation. In Part 4, I discuss problems with the demonstrative concept response to the challenges of nonconceptualism. The main problem, as I see it, is that demonstrative concepts rely on nonconceptual content. Thus, appeal to demonstrative concepts cannot subvert the conclusion of the learning argument, that nonconceptual content is required for

concept learning. Part 5 discusses attentional mechanisms, and some objections to my argument of Part 4. Finally, in Part 6 I address the relation of attention to experience, and implications that various views of attention hold for conceptualist and nonconceptualist theses.

Part 1: A review of conceptualism

Conceptualists hold that the content of human experience is wholly conceptual; nonconceptualists deny this. To understand what it means for the content of experience to be conceptual or nonconceptual is not immediately obvious; it requires some nontrivial philosophical work to elucidate these terms. While this is done more fully in Chapter 1 of the dissertation, I briefly review the main points here.

Assessing the conceptualist and nonconceptualist positions would be far easier if we had in hand a theory of concepts to which all parties could agree. Unfortunately, there is available neither an agreed-upon, nor even a viable, theory of concepts. Nonetheless, substantive areas of agreement in this debate can considerably constrain any putative theory of concepts, as well as discussion of conceptual and nonconceptual content. My arguments will proceed from basic positions about which conceptualists agree, with assumptions they themselves advocate. First, virtually everyone agrees that whatever concepts are, they determine or pick out classes of objects or properties. Furthermore, conceptualists uniformly adopt what I call a ‘high view’ of concepts (Smith, 2002). These are positions that entail that possessing a concept requires a thinker to have sophisticated representational abilities, not merely a capacity to act differentially toward some classes of stimuli (which is what a ‘low view’ requires). So, for example, having the capacity to discriminate between dogs and other animals does not by itself indicate that the thinker possesses a concept DOG (though it may

be good evidence for it). What does distinguish a thinker that possesses DOG from one that doesn't, according to the high view, is that the DOG possessor can think about dogs, and can do so in the absence of dogs. Thus, having a stimulus-driven percept is not in itself sufficient to justify attribution of a concept; the content of the percept must be associated with some higher-level representation, a label or mental word, which can be used (i.e. tokened or deployed), in a stimulus-independent fashion, in thought. As McDowell (1994) famously says: "it is essential to conceptual capacities... that they can be exploited in active thinking." (p.47) As such, they must be subject to top-down control.

Our mental states have content: they are representational, and they represent the world to be a certain way. As I explain in more detail in Chapter 1, I adopt the state view of nonconceptual content. That is, I take the question of whether the content of experience is conceptual or nonconceptual to be a question about the *way* in which the content of experience is represented: conceptual content is represented by conceptual representations. Thus, the content of experience is conceptual if, in order to enjoy an experience with that content, the subject of experience must possess and deploy concepts that specify that content. The content of experience is nonconceptual if the subject may have an experience with a certain content without possessing or deploying concepts required to adequately specify that content.

Finally, by content of experience, I mean content that is available at the person-level, or that reaches the awareness of the conscious subject. The conceptualist claim that the content of human perceptual experience is entirely conceptual entails that the representational content of experience is exhausted by conceptual mental representations deployed in perception; the content of perceptual experience is therefore limited by the concepts one possesses. The nonconceptualist instead holds that there may be

representational aspects of experience that cannot be characterized by concepts in a subject's conceptual repertoire, and the content of one's perceptual experience can outstrip the concepts one possesses.

In short, then, the conceptualist holds that for a subject's experience to represent an object, property, or relation x , the concept X must be possessed and deployed by the subject.

Part 2: Challenges to conceptualism, and the demonstrative concept reply

There are several commonly-invoked arguments for nonconceptual content of human experience. The most problematic of these for the conceptualist is the fineness of grain argument.¹

¹ In addition to the arguments elaborated in this paper, there is another argument against conceptualism prevalent in the literature: the richness argument. Since the richness and fineness of grain arguments are closely related, and since the conceptualist's response to both is the same, for brevity I only discuss the richness argument in footnotes.

The richness argument (Chuard, in preparation; Dretske, 1981, 1988; Kelly, 2001b; Peacocke, 1992) adverts to the fact that our experience, at any given moment, appears to be suffused with perceptual detail: my entire visual field seems to be fleshed out with contours, objects, varied colors, shading and so on; other sensory modalities (sounds, tactile impressions, and so on) also typically enter into my total perceptual experience. Experience is, as Kant so aptly termed it, a manifold. If my visual experience provides me with something akin to a picture (though it need not be as determinate as a picture), and if, as the old adage goes, a picture is worth a thousand words, and if, (as we might roughly characterize the high view of concepts), concepts are like or involve words in the head, then my visual experience, if it is thoroughly conceptual, requires me to possess and deploy a thousand words at any given moment. A number of questions then arise for the conceptualist: Can so many concepts be deployed at once? How many are we really talking about? What mechanisms are used to do this? Our working memory, for example, has a very limited capacity. The richness argument is supposed to call conceptualism into question by just the sheer magnitude of the execution of our cognitive powers which ordinary perception seems to require.

It should be noted that the richness argument does not yield a definitive victory for the nonconceptualist. How many concepts is too many for the conceptualist to account for? First, there is some debate as to whether experience is really as rich as it appears to be (see Noe (2002), and other papers in this volume, as well as experiments on change blindness and inattention blindness in O'Regan & Noe (2001) and in Mack and Rock (1998)). Perhaps perception is a grand cognitive illusion, and the number of perceptual elements of which we are really aware is far fewer than we imagine. Second, although we can only manipulate a

The fineness of grain argument

The fineness-of-grain argument begins from the commonsensical claim that our perceptual experience can accommodate a vast, possibly infinite, number of subtle gradations in perceptual quality. Imagine being in a paint store, and looking at a wall with hundreds of color swatches of red, each one subtly but discriminably different from the ones it abuts. If the content of experience is entirely conceptual, then there can be no difference in perceptual content without a difference in concepts deployed. So according to the conceptualist, in just looking at the wall and seeing the different color swatches, you are deploying hundreds of distinct concepts of red. But, the argument goes, it is implausible that you actually possess hundreds of distinct concepts of red, and you cannot deploy concepts that you do not possess.² Thus, the nonconceptualist argues, if you can perceive fine-grained perceptual properties, yet you lack fine-grained concepts, conceptualism must be false.³

small number of items at any given time in working memory (estimates range from 4 to 11), perhaps concept deployment doesn't rely upon working memory, and instead makes use of a system with far greater bandwidth (such a system would, ultimately, need to be discovered and characterized). Despite the fact that the richness argument puts a burden on the conceptualist, as Chuard notes (Chuard, in preparation), it is not fatal to conceptualism.

² It is also questionable whether so many distinct concepts can be deployed at once, since we know that the capacity of working memory is limited, and it is arguably working memory that will be involved in conceptual deployment.

³ The fineness of grain argument is often conflated with the richness argument. The reason the two arguments are often conflated is that our perceptual experience is often both rich and fine-grained, and both arguments are alike in that they focus on the informational complexity that characterizes perceptual experience. They are subtly different in that the richness argument, I think, means to highlight the synchronic qualities of perception and the demands these place on the conceptualist, whereas the fineness of grain argument highlights diachronic perceptual abilities and their associated demands. As I will describe, the conceptualist answer to both these challenges from informational complexity is the same: demonstrative concepts can account for all the subtlety and detail of the content of experience.

Although neither McDowell nor Brewer address the richness argument specifically, it seems clear that appeal to demonstrative concepts could in principle allay the force of the richness argument: Demonstratives need not refer to individual shades of color or objects (I call this type of demonstrative a 'narrow demonstrative'), they may, in principle, refer to

The fineness of grain argument denies that we possess as many fine-grained concepts as there are perceptible differences in the content of our experience. If this is true, it would falsify conceptualism, for conceptualism holds that there can be no difference in the content of perceptual experience without a difference in the concepts deployed, and since concepts must be possessed to be deployed, we could not represent perceptual differences without possessing the suitable concepts.

A second argument against conceptualism was raised in the first chapter of the dissertation. This 'learning argument' aims to show that without nonconceptual content, concepts with perceptual content cannot be learned. Hence, they must be innate. This argument is sketched more fully in the next section.

The learning argument

The idea of the learning argument is this: Learning a concept with perceptual content involves forming a stable association between a mental symbol and some perceptual quality or range of qualities. This sort of learning involves awareness; since to be a concept the learned mental representation must be deployable in active thought, it must be available at the person-level. If so, there must be an account of how it comes to be available at this level. The account will involve the learned association of a perceptual quality already in experience with a mental symbol. If that quality in experience is already represented conceptually by the very concept we are trying to account for, this cannot be an account of how that concept is acquired. If the content is already represented conceptually, but not by deployment of that concept, it must be represented by means of other concepts. That is, the content of the

entire visual scenes or other complex aspects of perceptual experience (a 'wide demonstrative').

concept to be learned must be composed of other concepts. However, compositionality for perceptual concepts is implausible. Thus, it appears that if only conceptual content is available to the subject of experience, new perceptually based concepts cannot be learned – they must be innate. On the other hand, plausible stories of how concepts are learned from nonconceptual perceptual content have been formulated and seem to be consistent with evidence from developmental studies of concept acquisition. Thus, I argue that conceptualism entails a version of concept nativism, whereas admission of nonconceptual content of experience allows us to account for concept learning. This is another compelling reason to prefer nonconceptualism over conceptualism.

Conceptualist replies

How does the conceptualist respond to these challenges? Conceptualists have formulated an answer to the fineness of grain argument, which they think is adequate to the task. No such response is available in the literature to counter the learning argument, because it is newly posed. However, as I will argue, the best response to the learning argument is closely related to the response the conceptualist uses for the fineness of grain argument.

The conceptualist answer to the fineness of grain argument is that the content of experience, in all its subtlety and fine-grainedness, can be accounted for by invoking demonstrative concepts, concepts that would be verbally expressed by locutions such as “that shade” or “that shape”. Demonstrative concepts require the presence of a sample to fix their content. They are taken to be rather fleeting, dynamic structures, that in contrast to the concepts discussed earlier (which I will sometimes refer to as ‘standing concepts’), usually retain their integrity not much longer than the experience which accompanies their

formation. According to the conceptualist, these demonstrative concepts provide the thinker with all the fine-grained concepts he or she might need to account for the fineness of grain of experience in a conceptualist framework.

McDowell, high priest of conceptualism, believes that purveyors of the fineness of grain argument fail to recognize that perceptual demonstrative concepts can satisfy the dual constraints of capturing the subtle perceptual differences between, say, two subtly different red color swatches, and doing so in terms of concepts the perceiver possesses:

But why should we accept that a person's ability to embrace colour within her conceptual thinking is restricted to concepts expressible by words like "red" or "green" and phrases like "burnt sienna"? It is possible to acquire the concept of a shade of colour, and most of us have done so... (McDowell, 1994 p.56)

McDowell thus denies that the requisite concept possessed by the perceiver must be one which we have identified with a label, like RED or BURNT SIENNA. Bill Brewer, another advocate of conceptualism, notes a similar lacuna in the nonconceptualist critique:

There is an unacceptable assumption behind this line of argument, that concepts necessarily correspond with entirely context-independent classifications of things, in such a way that they can, in principle at least, be grasped by anyone, anywhere, regardless of their current relations with the semantic values in question. (Brewer, 1999 p.171)

They both deny that context-independent concepts, concepts we store and have words or labels for, need to be able to account for the subtleties in experience, and they accuse the fan of nonconceptualism of missing this crucial fact. This is their remedy: we can account for the aforementioned subtleties in experience with our demonstrative concepts. McDowell claims, for instance:

In the throes of an experience of the kind that putatively transcends one's conceptual powers – an experience that *ex hypothesi* affords a suitable sample—one can give linguistic expression to a concept that is exactly as fine-grained as the experience, by uttering a phrase like “that shade”, in which the demonstrative exploits the presence of the sample. (McDowell, 1994 pp.56-57)

And Brewer echoes this sentiment in a slightly different way:

...the fineness of grain in perceptual discrimination is matched precisely by the perceptual demonstrative *concepts* which the subject has in virtue of her conscious contact with the items in question. (Brewer, 1999 p.172, author's emphasis)

Initially, these replies may appear to solve the fineness of grain problem for the conceptualist, and many conceptualists undoubtedly have thought so. However, upon more careful consideration, neither response is entirely satisfying. Consider McDowell's claim. We are to view the demonstrative concepts as *acquired*, yet the relation between the subject's having an experience and his employing an appropriate demonstrative concept is left unelaborated. Instead, we are merely assured that a perceptual experience that outstrips our stable conceptual repertoire enables us to express in *language* a concept as fine-grained as our experience. Yet surely the ability to verbally express a concept is merely a downstream nonobligatory effect of having an experience with a certain content; it is, at best, defeasible evidence for having that concept. What McDowell assures us of is that our experience *can* always be accompanied by concepts that match its fineness of grain, yet what the conceptualist owes us is something else: an argument to the effect that it is in the act of conceptualization itself that perceptual content is able to enter experience, or, in other words, that the experience depends upon the conceptual content reflected in our demonstrative utterance. Evidence that we can always produce a concept that matches the fineness of grain of our percepts in itself is no comfort for the conceptualist – he needs to demonstrate that the content of experience *is* conceptual.

Brewer's response, too, is problematic. He claims that the perceptual demonstrative concepts we have, we have *in virtue of our conscious contact* with their referents. If by "conscious contact" he means "experience", his claim would seem to undermine the conceptualist motivation for the appeal to demonstratives. Interpreted this way, Brewer's claim suggests at best that perceptual demonstrative concepts accompany experience, but it does not speak to whether or how they constitute it. Indeed, the claim that the subject has these demonstrative concepts *in virtue* of her experience, read in a flatfooted way, suggests that conscious experience *causes* the subject to possess the relevant concepts. Given a commonsense understanding of causation, the cause (conscious contact) would be temporally prior to the effect (possessing or acquiring demonstrative concepts). Understood this way, an appeal to demonstrative concepts is useless in defending conceptualism. It is not enough for the conceptualist to demonstrate that the content of experience can always be *conceptualized*; he must show that the content of experience *is conceptual*.

Now it would be uncharitable to think that the conceptualist fails to recognize this, and so more likely, he conceives of the demonstrative concept response differently. The best understanding that I can come up with is the following. Instead of the demonstrative argument being *evidence* for concepts accompanying experience, it must be thought of as an argument that forming demonstrative concepts *constitutes* the experience.⁴ That is, the conceptualist must respond by maintaining that having an experience *just is* forming a demonstrative concept. So for any experience where the content of experience has a fineness of grain that outstrips our repertoire of standing concepts (which is most), we form the

⁴ One might think this is too strong, that it would be sufficient for demonstrative concept formation to cause the experience. But this seems wrong, since demonstrative concept formation, like experience, is supposed to occur at the person-level: it involves awareness of the referent of the concept. So if demonstrative concept formation merely caused experiences, we would have awareness of the referent twice-over, once in the act of concept-formation, and once in experience.

demonstrative concept “that (experience)”. Let us, for the moment, entertain the possibility that this response to the fineness of grain argument is satisfactory, as the conceptualist appears to think.

How might the conceptualist respond to the challenge posed by the learning argument? I surmise that the conceptualist will also be tempted to counter the learning argument with an appeal to demonstrative concepts. Recall that in effect, the learning argument presented the conceptualist with a dilemma: either perceptually-based concepts are learned on the basis of nonconceptual content (i.e., conceptualism is false), or such concepts are innate. As I see it, the best conceptualist response to the learning argument (and, given his proclivity to appeal to demonstrative concepts in order to deal with challenges to his view, the one the conceptualist is most likely to rely upon), is that the dilemma I posed is a false one: in addition to the possibility that a concept with perceptual content is innate, the conceptualist can avail himself of the possibility that the content of experience is *constituted* by demonstrative concepts constructed on the fly, and concepts for which the learning argument aims to account, standing concepts like RED or BURNT SIENNA, are learned by forming a stable association between a mental symbol (“red” or “burnt sienna”) and the content of the relevant demonstrative concept.

Thus, harkening back to Margolis’ story sketched in chapter 1, we have two competing pictures of how novel concepts are learned. The learning argument suggests that standing concepts are learned on the basis of perceptual, non conceptual representational content of experience. In contrast, the conceptualist reply suggests that standing concepts are learned on the basis of the fleeting demonstrative concepts afforded by experience.

Now, before considering whether this response to the nonconceptualist challenge works, let me point out that the nature of the response to the learning argument is slightly

different than the response to the fineness of grain argument, despite the fact that both replies appeal to demonstrative concepts. In the reply to the fineness of grain argument, the demonstrative concept was appealed to in order to show that for any experience, suitably fine-grained concepts are always available to the subject; the invocation of demonstrative concepts is intended to respond to the charge that the conceptualist is committed to more distinct concepts than it seems reasonable to think we possess. Thus, the demonstrative concept reply to the fineness of grain argument is designed to show that we do indeed possess such concepts. I already pointed out that merely showing that concepts with the requisite fineness of grain are available to the subject does not discharge the conceptualist's burden of proof. However, even less so is a demonstration of availability a viable response to the learning argument, for if the conceptualist chooses to reply, he is denying nativism, so by hypothesis the concept to be learned is not available. If the conceptualist is to appeal to the hypothesized demonstrative concept reply to the learning argument, it would be by suggesting a causal story about how the construction of a standing concept relies upon the content supplied in experience by a perceptual demonstrative, and indeed, I think that is how we should take it. Any adequate reply to the learning argument is going to be one which provides a causal story, since learning is a causal phenomenon.

On the face of it, then, it looks as though appeal to demonstrative concepts may work, at least in principle, to respond to both the fineness of grain and the learning arguments. In the next sections, I consider in more detail what demonstrative concepts are, how they might be formed, and the constraints on cognitive systems involved in demonstrative concept formation. Demonstrative concepts seem to be the conceptualists' panacea. However, in time it will become apparent that what looks to be a panacea is really a

Trojan horse: demonstrative concepts contain the seeds for the destruction of the conceptualist position.

Part 3. Demonstrative expressions and demonstrative concepts

In this section I characterize demonstrative concepts. Although conceptualists and nonconceptualists alike use the term ‘demonstrative concept’ in their theorizing (Brewer, 1999; Chuard, in preparation; Kelly, 2001b; McDowell, 1994; Peacocke, 1991), as far as I know, no one has given a thorough account of what demonstrative concepts are.⁵ Here I try to elucidate the notion of a demonstrative concept in a way that respects the commitments of the conceptualists who invoke demonstratives, as well as the intuition that demonstrative concepts are importantly related to demonstrative expressions in spoken language (an intuition which conceptualists share, see McDowell, above).

Demonstrative expressions are linguistic expressions which are thought to be vehicles of direct reference, such as “that” or “that F”. There is a considerable literature in philosophy of language on demonstrative expressions, and it is upon this that I will draw to help clarify the nature of demonstrative concepts. Quite simply, demonstrative concepts are to be understood as a mental analog of these more familiar demonstrative expressions (or linguistic demonstratives). However, although questions regarding the metaphysical and epistemological relations between conceptual and linguistic demonstratives are interesting, and perhaps of crucial importance in understanding nonlinguistic thought, I will not discuss

⁵ Evans (1982), however, did explore the closely related notion of demonstrative identification.

them here. For the purposes of this argument, we can assume that conceptual demonstratives are language-independent.⁶

What is a demonstrative expression? A demonstrative expression is an indexical expression which requires an associated demonstration in order to determine its referent. Suppose a speaker points at Enzo and says “That (dog) is huge.” “That” is a demonstrative, and the associated pointing is the requisite demonstration. The linguistic demonstrative is an expression which refers to that which the demonstration demonstrates (the demonstratum), in this case, the dog. According to Kaplan (1989), “that” is the paradigmatic demonstrative, and his invented expression “dthat” distinguishes demonstrative uses of “that” from uses of the word in other contexts. Kaplan’s “dthat” is a linguistic vehicle of direct reference.

The mere utterance of the phrase “that” or “that F” is insufficient for the production of a well-formed demonstrative. Well-formed demonstratives require an associated demonstration in order for their content to be fixed. Thus, “that shade” must be accompanied by an action, typically a pointing or a gesturing, at something in the world that is colored. The content of the locution “that shade” would then be the color of the item or location pointed to. A well-formed demonstrative requires an act of demonstration.

However, not any act of demonstration will do. Linguistic demonstratives are incomplete if the utterance “that” is unaccompanied by an *appropriate* demonstration (Kaplan, 1989). There are several ways that a demonstration can be inappropriate. An utterance of “that shade of blue” accompanied by a gesturing toward a not-blue object would result in an incomplete demonstrative, for it would fail to pick out a referent.

Furthermore, an appropriate demonstration requires an *intentional* action (typically a pointing

⁶ That is, I assume that a nonlinguistic creature might be able to form demonstrative concepts. If it turns out that all concepts are language-based, my assumption will prove false. However, nothing in this paper turns on this assumption.

or a gesturing) toward the intended referent of the demonstrative, in such a way that it serves to individuate the object or property that the speaker intends. An unintentional movement, or an intentional movement that fails to individuate the intended object, would not be considered an appropriate demonstration. Consider a speaker with an uncontrollable tic, or someone saying “that” as they slip on a banana peel, pointing at the sky rather than at their intended referent. In both cases, the linguistic utterance may coincide with a pointing or gesturing at something in the world, but because the gesturing is unintentional or fails to pick out the intended referent, reference fails. Since linguistic demonstratives are generally used for communicative purposes, the demonstration must be such as to convey the intended referent to the hearer.

Demonstrative expressions require an appropriate demonstration, where an appropriate demonstration picks out the intended object. Demonstrative concepts (or, as I will sometimes say, conceptual demonstratives) are mental representations which are analogous to linguistic demonstratives in the following way: Just as the semantic rules for linguistic demonstratives require an appropriate demonstration in order for the expression’s reference to be fixed, the semantic rules for demonstrative concepts require an appropriate demonstration in order for the concept’s reference to be fixed; as with demonstrative expressions, the appropriate demonstration for a demonstrative concept must also be intentional.

Suppose a philosopher on a solitary hike is surveying a series of peaks in the Himalaya, and suppose he has no individuating concept for any of the mountains in his field of view. He view may nonetheless alight on one of the mountains, and he may think, of the peak, that it is dramatic. This *de re* thought about the peak involves a conceptual demonstrative. The idea is that the thinker’s thought would be the thought analogue of the

sentence “that is dramatic”, where the referent of the “that” is determined by an associated demonstration, such as pointing at the peak in question. But what could serve, in thought, as the relevant demonstration? After all, the demonstration that accompanies linguistic demonstratives is an action (usually a pointing), it is intentionally undertaken, and it has success conditions. For, as Kaplan notes, a demonstrative expression can fail to refer if the demonstratum is of the wrong type. Yet, intuitively, we can think about something, something for which we may have no individuating term or concept, without moving our arms or acting in any way. What could the mental analogue of physical demonstration be?

The cognitive analogue to pointing, I suggest, is the focusing of attention. Focusing attention is an intentional, cognitive act (it may, but need not, involve eye movements). We can mentally pick out a single object in a visual scene cluttered with objects, and direct our thought to the object by focusing our attention on it. We can also direct our thought to percepts in other sensory modalities, to properties, and to relations, just as linguistic demonstratives can refer to all these sorts of things.⁷ Like linguistic demonstratives, demonstrative concepts are supposed to be directly referential: they acquire their content from the demonstratum, the thing in the world demonstrated. Like linguistic demonstratives, demonstrative concepts can fail to refer if their success conditions are not met. Simple demonstrative expressions can be a part of more complex demonstrative expressions (i.e. “[that man] is... ”); similarly, demonstrative concepts can be elements of more complex demonstrative thoughts (i.e. “[that shade] is...”).⁸

⁷ It is an interesting question whether conceptual demonstratives have a larger domain than do linguistic demonstratives. Is it possible to linguistically demonstrate thoughts or feelings, or must we refer to those via definite descriptions? It does seem that we can focus upon thoughts or feelings demonstratively with attention.

⁸ It is probably worth distinguishing between two kinds of demonstratives. Demonstratives which single out particular objects or aspects of experience are narrow, whereas those that just encompass experience (like a broad gesturing), are wide. Whereas the demonstratives

Despite these fundamental similarities, conceptual demonstratives differ from linguistic demonstratives in a number of ways. Linguistic demonstratives are expressions of spoken language, primarily used for communication with others; conceptual demonstratives are elements of thought, and accessible only to the thinker. However, conceptual demonstratives are used in forming and understanding linguistic demonstratives (and, if the conceptualist is right, in perceptual experience): Suppose we are both sitting on some high peak, looking out over the Himalayas. For me to understand what you mean by (pointing) “that mountain”, I must focus my attention upon the very mountain you mean, the very mountain upon which your attention is (or was) focused. Conceptual demonstratives are not used *to* communicate, but they are absolutely central to communication, for they underlie what it is to understand a demonstrative expression. As Evans pointed out, understanding a demonstrative is more fundamental than uttering one; I think conceptual demonstratives are required in understanding linguistic demonstratives.⁹

invoked to solve the problem raised by the richness argument are wide demonstratives, “capturing” the entirety of the visual scene (“that scene”) or even the entirety of a multimodal experience (“that experience”), the content of our standing concepts seems not to be of the wide variety. Rather, the content of our standing concepts tends to delineate particulars extracted from the manifold of experience. Thus, the demonstrative concepts invoked by the reply to the learning argument look very much like the demonstratives invoked by the reply to the fineness of grain argument. The learning argument relies upon narrow demonstratives.

⁹ There is one further thing about demonstrative concepts, which makes them concepts, as opposed to merely an element of experience (a percept, or a sensation). It is something about which all in question agree, but as it is not relevant to my arguments, I will not discuss it in detail. In forming the concept one is endowed with short-term recognitional capacities. McDowell is quite clear on this constraint on demonstrative concepts, as are Evans and Brewer. Brewer requires that the demonstrative concept is a mental representation that is in some sense separable from the sample relied upon in its formation: he requires that there be “a certain distance between the subject’s conception of the relevant semantic value and the mere obtaining of her confrontation with it.” (Brewer, 1999 p. 171). While the demonstrative concept may be fleeting, it endures beyond its moment of application. As McDowell puts it, the capacity to embrace a colour in mind must persist beyond the presence of the sample for it to be a conceptual capacity. Thus, the demonstrative concept involves a short-term recognitional capacity, and the conceptual content of the capacity is made determinate with

I am fairly certain that both Brewer and McDowell would agree with my characterization of demonstrative concepts, and with my reliance upon linguistic demonstratives to aid in that characterization. Both of them affirm the analogy in their writings. McDowell, for instance, says, “Now it is true that the fine-grained capacities I have appealed to have a special character, which is marked by how demonstrative expressions would have to figure in linguistic expressions of them.” (McDowell, 1994 p.58). Brewer calls attention to the importance of a cognitive analogue to pointing in the case of demonstrative concepts, for he thinks that “to grasp such concepts more is required than to mouth demonstrative expressions in the presence of an object” (Brewer, 1999 p.171). An intentional demonstration is central to characterizations of demonstrative expressions, and it is this intentional aspect that I think Brewer alludes to in this passage. As to the nature of the demonstration involved in demonstrative concept formation, both McDowell and Brewer explicitly embrace the idea that focusing attention operates as the demonstration for demonstrative concepts.

To sum up, there is broad agreement about what is involved in demonstrative concept formation. Forming a demonstrative concept requires a demonstration. That demonstration involves focusing attention on that which is to be demonstrated, and, to be an appropriate demonstration, that act of focusing attention must be intentional.

Part 4. Problems with demonstratives as a conceptualist’s panacea

Recognized problems

In Part 2 I sketched some objections to conceptualism, and argued that the conceptualist seems to view demonstrative concepts as an answer to a variety of challenges posed by the

the help of a sample. McDowell sees the recognitional capacity as involving memory (one “sees the shade in one’s mind’s eye” (McDowell, 1994 p.172).

conceptualist. In Part 3 I gave a brief account of demonstrative concepts. Here I argue that there are a number of reasons to be skeptical that demonstratives can meet the challenges outlined in Part 1. I first catalogue three reasons that have been noted in the literature. Next, I suggest a further reason to deny the conceptualist's claim that demonstrative concepts can counter arguments for nonconceptualism, by offering a new argument which is prompted from considerations of the nature of attention itself.

- 1) We seem to experience far more and more often than we seem to attend to and demonstrate.

Suppose we accept that demonstrative concepts *can* account for the content of experience. This alone does not entail that demonstrative conceptual contents *constitute* the content of experience. But as I argued earlier, the conceptualist really must hold that demonstrative concepts constitute experience. First, it just doesn't seem true to phenomenology that in our normal experience of the world, we go around constantly demonstratively identifying our perceptual world. For instance, when I open my eyes in the morning, I don't seem to myself to be indicating "that scene" or "that experience," and even less so do I seem to be picking out individual aspects of my visual world with concepts like "that shade", yet I do seem to be aware of my surroundings in all their perceptual subtlety. There seems to be something qualitatively different between intentionally focusing on some aspect of our experience with the intent of gesturing at it as 'that', and merely experiencing our environment. In fact, we intuitively can distinguish between the effortfulness of the former, and the effortlessness of the latter, and we think

we can single out an aspect of our experienced environment for enhanced processing through attention.¹⁰

Prima facie, this consideration seems to be powerful enough to defeat the demonstrative concept argument. However, it must be conceded that appeal to phenomenology cannot be the last word on the nature of our psychological states or processes; while we want any complete account of our mental lives to do justice to phenomenology, we must also respect the undeniable fact that many things go on in our mental lives of which we are unaware, and that we are (at least) occasionally subject to cognitive illusions. Perhaps this one of those illusions: perhaps our experience is just a series of demonstrative identifications, but we are under the cognitive illusion (perhaps because these demonstrations are so ubiquitous) that we are not involved in a continual process of demonstrative identification.

Here is another objection from phenomenology that I find more compelling: There are typically many objects in our visual experience that we do not attend to at any given time, but that we can choose to attend to. In thus shifting our attention, we are not aware of any distinct phenomenological change in what we experience, as if there were nothing at that location in our visual field before our attentional shift, and in attending it suddenly pops into being. The lack of such a radical phenomenological change, suggests that our experience outstrips the scope of our attention, and hence, the scope of demonstration.

2) The demonstrative's content can't be the object or property demonstrated, since it must capture the way the object appears.

¹⁰ This difference may be an illusion. Perhaps experience involves diffuse attention, and what we think of as attending involves focused attention. The fluidity of these terms highlights the extent to which we may not mean any one thing by our term 'attention,' and in fact, we may not even know what we mean by it.

There is some difficulty for the conceptualist in offering demonstrative concepts as a reply to the learning or fineness of grain arguments by constituting experience. The content of the demonstrative is supposed to be fixed by the sample, however, it seems that at least in some cases it is not the sample, but the way the sample is perceived, that ought to fix the content of the concept. For instance, suppose that in viewing a color after-effect illusion on a white wall, you characterize the illusive color patch as “that color”. Although the object in the world at the spatial location demarcated by the demonstrative is a white wall, the intended referent is a color, a color which ‘exists’ only in experience. In this case, there is no sample in the world that can provide the content for the demonstrative concept. If anything, the intended content of the demonstrative is an element of experience. This suggests that experience must precede the formation of the demonstrative concept (Heck, 2000; Kelly, 2001a, 2001b).¹¹

3) Perception isn’t judgment, but, at least according to some, demonstrations are judgments.

In order to deal with the objection above about the content of demonstratives of appearance properties, Bill Brewer often characterizes the formation of demonstrative concepts as processes of identifying how things in the world appear to the thinker by the mental analogue of saying “That is thus” (rather than just “that,” p. 17). While this may be a way to deal with the preceding objection, it raises its own problems. To wit, it seems to commit him to the dubious view that perceptual demonstratives are judgments, rather than that they form the basis for judgments by supplying us with concepts that can be the constituents of judgments. An uncomfortable consequence of this position is that

¹¹ This is a problem for all those who want to use demonstratives to explain reference to objects in the world, or to argue for direct reference. If the content is actually fixed by our experience, do we lose the connection to the world that we think is so essential according to most naturalistic semantic theories?

perceptual experience depends upon judgments about the content of perception prior to perception itself (or, in other words, we can judge (a person-level phenomenon) contents that are represented only sub-personally)!¹²

These problems for the conceptualist strike me as non-trivial. However, I don't take any of these problems to definitively tell against conceptualism. Here I pose yet a further problem for the conceptualist in his reliance on demonstratives, one that undermines conceptualism itself. That is, that coming to have a novel demonstrative concept itself will require that there be nonconceptual content of experience.

Novel demonstrative concepts themselves require nonconceptual content

McDowell and Brewer recognize that demonstrative concepts involve attention, but because they do not adequately explore the nature of demonstrative concept formation, they fail to recognize the problem this view poses for conceptualism. John Campbell first explored the role of attention in demonstrative concept formation. Although his motivation for exploring the role of attention in demonstrative concept formation differs from mine, his analysis of the problem is similar. Here I review Campbell's argument, then offer my own argument to the effect that in order to form a novel demonstrative concept, an agent must rely upon nonconceptual content. If my argument is correct, appeal to demonstratives to defeat nonconceptualism is self-undermining.

¹² It should be noted that the position that perception and judgment are not distinct has its adherents, and the friend of conceptualism will not be deterred if this consequence of his view is pointed out to him. Indeed, one could argue that numerous experiments in the psychology of perception, as well as neuroscientific theory, supports the view of perceptual-cognitive continuity more than do our intuitions.

Campbell's concern is to elucidate the function of phenomenal consciousness. His argument goes like this: The function of consciousness is to enable us to refer to objects in the world. Campbell endorses Evans' (1982) insight that our ability to refer successfully depends upon knowing which object or property we are intending to refer to, and that demonstratives play an important role in giving us this knowledge. As he says, "It is attention as a phenomenon of consciousness that matters for knowledge of reference." (Campbell, 2002 p.5)¹³ and that knowledge of reference is important for explaining how our thoughts refer. He argues that perceptual reference cannot be grounded purely by description, because description cannot ensure that we pick out precisely one item for reference (cf. Strawson's "massive reduplication problem"); thus, to ground reference perception must involve an experiential component. Campbell argues that 'knowing which' involves an act of focused attention to an object or property in your experience, an act which in effect highlights that object or property amongst the others in your experience:

When we think about demonstrative reference in particular – that is, reference made to a currently perceived object on the basis of current perception of it – it seems that reference to the object depends on attention to the object. (Campbell, 2002 p.2)

Campbell suggests that attention acts to highlight aspects of our experience, and this highlighting plays a role in fixing the reference of mental representations. As Campbell notes, part of that explanation adverts to the idea that an intentional demonstration of some sort must underlie demonstrative thoughts that ground reference; like myself, Campbell thinks that voluntary attention constitutes this intentional element:

¹³ Linguistic demonstratives also typically involve an utterance of one of a small number of words ("this", "that", "there") in conjunction with a demonstration. I am not sure whether conceptual demonstratives also involve the mental analogue of speaking a word, and even less sure that a small number of mental words accompany all attentional demonstrations, but given a symbolic view of concepts, it is likely that some mental symbol is associated with the attentional object in the formation of a demonstrative concept.

...appeal to the agent's demonstrative intentions requires us to appeal to the agent's conscious attention to objects; we cannot acknowledge a role for intention, in the control of mental operations, without thereby acknowledging a role for conscious attention. (Campbell, 2002 p.14)

In other words, Campbell holds attention to operate at the level of experience, not as a play of subpersonal information-processing mechanisms. Thus, what Campbell suggests and the conceptualist denies is that attentional highlighting is an operation on elements *already* in our experience. In effect, Campbell holds that conscious attention to nonconceptual contents (or attention with awareness) is a more primitive type of mental state than is conceptual thought, but one that is critical for making conceptual thought possible.

I am sympathetic to this view of attention and nonconceptual content, and certainly to the idea that attention explains how some types of conceptual thought are made possible. However, rather than being motivated by the need to show how reference is made possible, my argument is motivated by the need to show how forming new demonstrative concepts is possible. If the demonstrative concept in question is to play the role it must as a reply to the learning argument, (i.e. by grounding standing concept learning in the content of demonstrative concepts), then the object, property, or relation being demonstratively identified cannot yet be one for which we have a concept. So, according to the state view, the content upon which attention operates or selects cannot be conceptual. Thus, it must be nonconceptual. However, since the act of attending is an intentional one, the content upon which the attentional processes are directed must be in experience, for it is only toward contents of our experience that we can act intentionally. There is, then, nonconceptual content of human experience.

My argument is underlaid by two intuitions: 1) that forming a demonstrative concept is a process or operation that can be explained, and 2) that there must be something in experience that makes possible the formation of a demonstrative concept; experience is not simply the unanalyzable result of demonstrative concept formation. Another way of putting the argument is as follows:

- 1) Forming a demonstrative concept involves a demonstration.
- 2) The relevant demonstration in conceptual demonstrative formation is the endogenous (voluntary, intentional) focusing of attention.
- 3) Intentional focusing of attention involves representational content of experience.
- 4) To be a response to the learning argument, that representational content cannot always already be conceptual.
- 5) Thus, forming a novel demonstrative concept appropriate to account for novel concept learning must sometimes involve focusing attention on contentful aspects of experience that are nonconceptual.

The argument really makes a simple point. Here's an equally simple analogy. Suppose I show you a coloring book in which the pages are beautifully colored in by someone who has stayed within the lines. I ask for an account of how the pages were colored in so well. Providing such an account does not seem to pose too much of a problem. The account might look like this: The colorer was presented with a page on which was printed only the lines of the design; he was aware of those lines; intending to stay within the lines, he moved the crayon so as to remain within those lines.¹⁴

Now suppose I told you that this was in fact a magical coloring book with invisible lines: the lines only appear after the coloring act is completed. What sort of account could you give for how the colorer managed to color within the lines? It seems that no reasonable

¹⁴ Of course, we might have to attribute to him relatively good eye-hand coordination as well.

account can be given. I suggest that the conceptualist is faced with an analog to this scenario – a scenario in which people routinely color in a coloring book with invisible lines, or lines that are not perceivable: Just as the explanation for the magical coloring book has to bite the bullet and say the colorer stays within unperceivable lines, which become visible only after her completes the task of coloring in the picture, and it cannot give an account of how this is done, so the conceptualist must claim that persons forming a novel demonstrative concept must intentionally pick something out of their environment without being aware of its boundaries, properties, etc. Were we not aware of the lines before coloring, I suggest, our coloring abilities would be inexplicable. Similarly, if there is no content in experience that is nonconceptual, then our ability to form perceptual demonstrative concepts is equally inexplicable. Needless to say, this is not an acceptable resolution of the issue. Forming a demonstrative concept, like coloring in a coloring book, is a natural phenomenon which must admit of a natural explanation. The explanation must, I contend, advert to the nonconceptual content of experience.

Related claims about how attention operates have been made before. Focal attention cannot be effectively deployed in the absence of stimuli, whereas it can be used to individuate finely if stimuli are present. Evans recognized the importance of this object-based attention for demonstrative thought:

A subject can demonstratively identify and think about one object in an enormous array of closely packed and indistinguishable objects -- provided, as we say, he keeps his eye on it... Now, in the absence of an object to anchor our dispositions, we can make only rather gross discriminations of areas or regions in egocentric space. Try to concentrate upon a pill-sized region on a white wall in front of you: even if you keep looking, do you have any confidence, at the end of fifteen seconds, that you are still looking at the same region you began with? The idea of a point p in egocentric space, precise enough to be adequate to individuate the pill, exists only because there is something at p – the pill – for the subject's perception to latch on to... the Idea of p depends upon the perception of the pill... (Evans, 1982 pp.172-173)

For Evans, Ideas are concepts, so this passage can be understood as the claim that our ability to locate something in space, necessary for forming a demonstrative concept, depends upon our perception of something at p. Evans' insight is similar to the claim I am making: both take account of the fact that attention must operate *on* something. However, my claim stresses an aspect only suggested by Evans' quote: that the information upon which the attentional focus depends is part of the content of experience.

I have suggested that the type of demonstration involved in the formation of a demonstrative concept is the delimiting of the referent of the demonstrative by focusing attention. If I am correct, invoking demonstrative concepts to counter the learning argument does not do away with the need for nonconceptual content, for demonstrative concepts themselves require nonconceptual content. Indeed, if I am correct, my argument suggests that the conceptualist implicitly relies upon nonconceptual content in his reply to the fineness of grain and richness arguments as well.

My argument rests on the intuition that demonstrative concept formation is not the same as experience or awareness, and that the former can be explained in terms of the latter. Furthermore, the argument entails that we can be aware of, or experience, contents upon which attention is not yet focused, for it is this awareness is what allows us to voluntarily shift and focus our attention on elements in the visual scene that we are not currently focusing upon. Thus, the soundness of my argument depends how attention and awareness are related, which is ultimately an empirical question.

My argument against the demonstrative concept defense has limited scope: it applies to novel perceptual demonstrative concepts, and thus does not necessarily imply that formation of any demonstrative concept requires nonconceptual content. However, the

argument does apply to demonstrative concepts insofar as the conceptualist thinks they can be used as a refuge from the learning argument. Thus again, the friend of conceptualism is faced with the choice of abandoning conceptualism, or embracing nativism.

Part 5: Objections and the basics of attention

There are, as I see it, two major objections to my arguments that novel demonstrative concepts require nonconceptual content of experience. Setting these out will require that we explore some basic empirical findings about the nature of attention. I will do this first, and then consider the objections.

William James once wrote: “Everyone knows what attention is. It is the taking possession by the mind in a clear and vivid form of one out of what seem several simultaneous objects or trains of thought.” In a sense James was correct – we all have some intuitive idea of what it is to attend to something, to single it out of a host of objects of perception. However, we are only beginning to achieve a scientific understanding of the mechanisms of attention, and of the functional role it plays in a variety of cognitive processes (Pashler, 1998). There is now good evidence that rather than being a single, unified phenomenon, attention involves a bundle of different selective processes operating at a number of processing levels.

We have known for some time that areas of the brain dedicated to visual processing are topographically mapped, so that spatial relations in the outside world are (generally) preserved in neural maps of visual space. More recent studies have shown that the neural representations of many other perceptual modalities are also map-like in character. Neuroscientific experiments have shown that focusing visual attention on specific regions of space involves facilitation of neural activity in the visual map in the area which represents

that region of space. It is thought that this activity reflects increased depth or complexity of processing which is enabled by the attentional focus.

It has also long been recognized that there are two different mechanisms for directing attention, mediated by two different brain networks (see Posner, 1994). Attention can be automatically drawn to salient stimuli (stimulus-driven, or exogenous attention), or it can be directed intentionally by the subject (endogenous or voluntary attention) (Mack & Rock, 1998 p.243). Exogenous shifts of attention occur when, for instance, motion in our visual periphery causes involuntary eye movements to the moving stimulus. Endogenous shifts occur when we choose to focus on one or more objects or properties in our perceptual world. It is only these endogenous attentional shifts that will concern us, since demonstrative concept formation involves, as we have established, an *intentional* shift of attention.¹⁵

Demonstrations are intentional, they do not 'happen' to us. Passive directing of attention, though it occurs, is of the wrong type to figure in demonstrative concept formation.¹⁶ Thus, in our efforts to understand demonstrative concept formation, we should be concerned with

¹⁵ Exogenous attentional shifts in any case seem to support the nonconceptualist. If our attention is drawn by something we are not currently attending to, it seems likely that the stimulus which draws it is already in our experience, else how could we explain how it could catch our attention? If the stimulus in question was not in our experience, on par with something behind our backs, for instance, it seems it would not be able to draw our attention, as things out of our visual field cannot. Thus, the mere fact that our attention can be drawn by things despite the fact that we do not, before attending to them, know what they are, suggests that there are nonconceptual elements of experience.

¹⁶ It is worth noting that even if it is the case that attention is necessary for awareness, there are open questions about how the conditions under which endogenous shifts take place are to be described. Are we indeed unaware of aspects of the visual scene outside our current focus of attention, or is there a constant low level of diffuse attention which enables us to be aware of more than what is at the focus of attention? If, for example, the explanation for how unattended stimuli in the periphery can capture our attention is because we have experience of them, then the conceptualist is faced with a real problem, for according to him all elements in the scene would have to be conceptual even before demonstrative concept formation, so demonstratives could not account for the formation of novel concepts.

the conditions required for, and capacities and limitations of, endogenous, or intentional direction of attention.¹⁷

What are the units of attention? What does attention operate on? This important question in attention research has seen much progress of late. Whereas it was thought, not long ago, that attention operates on locations in space, like a spotlight (Treisman & Gelade, 1980), recent work has shown that attention can also be object-based or feature based (Liu, Slotnick, & Yantis, 2003; O'Craven, Downing, & Kanwisher, 1999; Scholl, 2002). For instance, we can selectively attend to specific colors or shapes, or to one object superimposed upon another, so that gross spatial cues cannot be used to determine the object focused upon. Neuroimaging and neurophysiological experiments have shown in these cases that neural activity increases in regions of the brain specialized for processing objects or properties of the type being attended (Corbetta, Miezin, Dobmeyer, Shulman, & Petersen, 1991; Freiwald & Kanwisher, in press (2004); Groh, Seidemann, & Newsome, 1996; O'Craven & Kanwisher, 2000; O'Craven, Rosen, Kwong, Treisman, & Savoy, 1997; Seiffert, Somers, Dale, & Tootell, 2003).¹⁸

The first objection my opponent will raise will capitalize on the finding that attention can be object- or feature-based. He will contend that object-based attention is governed by subpersonal visual segmentation processes (or what is sometimes termed 'implicit' or 'unconscious' perception). Indeed, we all must acknowledge that a lot of visual processing

¹⁷ It is worth noting that the grain of exogenous attention is much coarser than of endogenous attention, which also suggests that only endogenous attention can serve to delineate the object of demonstration from the rest of the visual scene (Mack and Rock, p. 243).

¹⁸ It is also important to recall that attentional processes operate over more than just visual representations, but nevertheless seem to operate according to similar mechanisms: We can attend to aspects of nonvisual experience, such as the cello line in an orchestral piece (played through headphones), or to the shooting pain in our left big toe. Although these stimuli are not arrayed in external space, they are represented in a topographically-structured neural maps which represent pitch (tonotopic maps) or the body layout (somatotopic maps).

occurs at subpersonal levels. The conceptualist might hold that subpersonal systems indicate to us where in our visual fields things are, much as attentional capture does. Why can't content and attentional processes be subpersonal all the way up? It seems clear, however, that we can and do shift attention voluntarily. To account for this fact, the conceptualist has several options, each requiring some fancy footwork. He could say that that attention could be directed intentionally in the absence of experiential content, and give an account of how this occurs. It is not clear that this could be done. Alternatively, he could hold that the intentional quality of endogenous attention is illusory, but then he would have the burden of explaining how or why such an illusion arises.

The second objection likely to come from the conceptualist is that I mischaracterize the problem of demonstratives by focusing on bare demonstratives (i.e. "that") and ignoring the role of general concepts ("object", "shade", "sound", etc) in demonstrative concept formation. Indeed, the conceptualist often describes demonstrative concept formation in terms of these complex demonstratives. McDowell, for instance claims, "If we have the concept of a shade, our conceptual powers are fully adequate to capture our colour experience in all its determinate detail." (McDowell, 1994 p.58), and Brewer writes, "A person's knowledge of which colour red is in my view ultimately depends upon his perceptual demonstrative identification of it, as 'that colour'" (Brewer, 1999 p.43).

It is true that we might conceptualize a new shade of color as "that shade", but just because we do does not mean that there is no nonconceptual content of experience. For suppose there were two new shades for which we didn't have standing concepts, interleaved in some pattern, and we intended to form demonstrative concept of one of them. "That shade" alone would not enable us to individuate the shade in question, without there being something different in our experience of one shade vs. the other. It is this perceptual content

of experience, which is, by hypothesis, nonconceptual, that allows us to individuate one of the two new shades by our demonstrative “that shade”.

This example could be made even more perspicuous with shapes. Spatial location can serve to individuate two colors occupying different regions, and since attention is spatially directed, merely choosing one location to attend to over the other may succeed in individuating one of the two shades. Here is a scenario which does not allow appeal to location to settle the matter. Imagine two (or more) novel shapes or objects superimposed upon one another, shapes for which by hypothesis we lack individuating concepts. We can even imagine that the boundaries of the two are ambiguous – the objects can be parsed in multiple ways. Thus, we cannot appeal to purely subpersonal mechanisms for the question of object boundaries, for we, as agents, must determine those boundaries intentionally. Merely attending to a location in space will not do, since they occupy the same region. Merely looking at a location and thinking “that object” or “that shape” will not do, since those concepts, in the absence of other content, do not individuate the stimuli. Yet I submit that we can nonetheless form a demonstrative concept of one of the objects by choosing to respect certain lines as object boundaries. We can individuate one object from another by choosing to attend to one of the shapes. In order to do this, I contend, we must have conscious access to content which is sufficient to distinguish one of the objects from the other. The content must be more fine grained than the content supplied by “that object”: that content is an example of nonconceptual content of experience.

As I argued earlier, if we only experience things by attending to them, it seems that we will have trouble giving an account of how we voluntarily focus attention on one item in a complicated visual scene. It seems incontrovertible that we can do such a thing: we can choose to attend to something outside our current focus of attention, and we can attend to it

without, it seems, consideration to whether it is something for which we already possess a concept. Furthermore, by holding that experience requires attention, every act of shifting attention would have to be explicable by solely sub-personal processes, for by hypothesis, we could not be aware of the item to be attended until attention had shifted. Thus, it seems, endogenous attention as well as exogenous attention would have to be accounted for without reference to person-level processes, such as intention.

Part 6: Attention and experience

The conceptualist holds true the following three propositions:

- (1) focusing attention is critical to the process of forming a demonstrative concept;
- (2) having a concept with content x is necessary for awareness of content x ;
- (3) nonconceptual contents outside the focus of attention cannot enter awareness

Both the conceptualist and the nonconceptualist agree about (1). It should be clear that if (1) and (2) are true then (3) follows. My preceding argument attacked (2) directly, arguing instead that the converse is true: awareness of content makes conceptualization possible. However, even if my argument against (2) is rejected, if it can be shown independently that (3) is false, then (2) is false. I will now discuss the evidence for and against (3).

The relation between attention and awareness is an issue of debate amongst neuroscientists and psychologists alike (see Lamme, 2003). Interestingly, the debate between the conceptualist and nonconceptualist seems to align with, and to some extent hinge upon, the two main competing views on this topic. Here I will briefly sketch the two views and the main arguments in their favor. A definitive answer will require a more thorough understanding of the nature and mechanisms of attention than we currently have, and the

overcoming of some methodological hurdles. If it turns out that unattended stimuli can enter awareness, then (provided they are not conceptualized already), there can be nonconceptual content of experience. But is it reasonable to think that we can be aware of things outside the attentional focus?

According to one view, attention is necessary for awareness: we must attend to something for it to enter awareness.¹⁹ This rather counterintuitive claim is held by a number of attention researchers, including Mack and Rock (1998), and O'Regan and Noe (2001). This view would tend to support conceptualism. If correct, either we attend to the world around us much more than we think we do, or our experience isn't as rich as we think it is. It is possible that we attend more than we think we do, if by attention we mean something more diffuse and automatically engaged than focused attention. However, note that this diffuse type of attention is not the type that the conceptualist deems appropriate for attentional demonstrations. These require focal attention, and because the limited capacity of focal attention is well-documented, it does not seem to be an option for demonstrative concept formation to provide us with the full range of contents we seem to experience.

¹⁹ Two theories have been proposed to account for why attention might be required for experience; both these have some support in the experimental literature.

First, there is the idea that attention is required for binding together features of the visual world that are processed in separate processing streams in the brain, and that only bound features enter experience. For example, contour, motion, and color information are processed in different cortical areas, yet we don't experience our visual world as fragmented into these separate streams. Even when binding errors occur, we *experience* color as being bound to shape. The idea therefore is that attention is required experience because it is required for binding, and binding is required for experience (Kanwisher, 2001; Treisman, 1999). (However, some deficits, such as Balint's syndrome, may indicate that awareness of unbound features is possible, though highly abnormal).

A second idea that is becoming prominent in the literature is that attention is required for elements of our perceptual world to enter working memory, a short-term, capacity-limited memory store, and that further, presence in working memory is required for experience. If this were true, then given the documented capacity limitations of working memory, the contents of experience would indeed be quite sparse, and the notion of the manifold of perception would be just a cognitive illusion.

Thus, the conceptualist would have to favor the interpretation that we overestimate the breadth of the content of experience. Evidence from studies of change-blindness and attentional-blindness have been interpreted to make just this point: they indicate that we are not aware of as much about the visual world as we think we are, and the richness of experience is some sort of grand cognitive illusion (see Noe, 2002 and other readings in this volume). Attentional- and change-blindness studies have led some researchers to conclude that items outside the scope of our attentional focus do not enter awareness. This is friendly to the conceptualist position, for by limiting the contents of experience, the conceptualist has less to account for in terms of conceptual content. An impoverished view of the contents of experience takes some of the bite out of the fineness of grain and richness arguments (especially the latter), and makes an appeal to demonstratives to account for experience seem much more plausible.

Note also that in addition to holding that attention limits the contents of experience, the conceptualist must also hold that attention transforms nonconceptual content into conceptual content: in other words, every attentive act to a stimulus for which the agent lacks a concept must be an act of demonstrative concept formation. For only if this is true would attention succeed in admitting only *conceptual* contents into experience. But this seems to get the relation between attention and demonstrative concept formation wrong. If anything, demonstrative concept formation is a subset of forms of attention, and not vice versa: attention can be endogenous or exogenous, but only endogenous attention is involved in demonstrative concept formation.

There is another more serious difficulty with the view that focused attention is necessary for experience: In all experimental studies suggesting that attention is necessary for experience there is a clear confound in that experience is assayed by means of retrospective

questioning. These experimental methods fail to distinguish between what elements are memorable or reportable, and what elements are experienced. Limitations in working memory provide plausible explanations for why only a few elements of experience, those attended to, are retrospectively remembered or reported. However, there is no reason to think that memory limitations affect the content of experience itself. Since awareness is always confounded with reportability in these studies, we cannot conclude on the basis that people cannot report unattended items that those items never entered awareness. Indeed, why should we think entry into working memory be a requirement for phenomenal experience?

The alternative view about the relation of attention and experience takes seriously the difference between reportability and phenomenal awareness. It denies that attention is necessary for something to enter experience, and holds only that attention is necessary for something to be reportable (and possibly, for it to guide intentional action). The view makes explicit the methodological ambiguity in the study of the relation of attention to awareness, that problem being that the data we have on the relation between attention and awareness all rests upon subject's reports (verbal or behavioral) of what they are aware of. The upshot of this view is that the richness of our experience is not a cognitive illusion – it is as many-splendored as we intuitively think it is, and the fact that we cannot accurately report many aspects of our experience reflects a bottleneck that occurs after the stage at which phenomenal experience occurs. Furthermore, if experience outstrips our attention, and if attention is required for forming demonstrative concepts, then it seems clear that an appeal to demonstrative concepts to deal with either the learning or the fineness of grain arguments will fail to give an exhaustive account of the contents of experience.

This view has support from three directions, all of them admittedly speculative. In psychology, theorizing postulates mid-level vision processes, which operate on bound features, yet are more primitive than conceptualized entities. Several theorists claim to have found evidence for nonconceptual visual representations that play a role in our phenomenal lives. John Driver suggests that such representations may be involved, as I have postulated, in concept learning:

Such proto-objects produced by the various image segmentation processes may often be more primitive than the conceptual objects, or real-world objects, which we discuss verbally in daily life. As the term 'mid-level' vision implies, they typically reflect bundles of visual information which are packaged on the basis of properties that go beyond raw image statistics (or primitive 'features'), yet which fall short of conceptually recognized entities. Nevertheless, they may bear a fairly close correspondence to the distinction between separate visual 'objects' which we experience phenomenally ... Moreover, the proto-objects produced by image segmentation processes, and the constraints they impose on various attentional processes, may provide an essential precursor for learning more conceptual distinctions between separate types of objects, as in the developing child (e.g. see Carey and Xu, 2001). (Driver, Davis, Russell, Turatto, & Freeman, 2001 p.91)

And Pylyshyn suggests that they play an important role in demonstrative concept formation:

...we do, under certain conditions, also represent some things without representing them in terms of concepts. We can refer to some things, as I will say, preconceptually. For example, in the presence of a visual stimulus, we can think thoughts such as 'that is red' where the term 'that' refers to something we have picked out in our field of view without reference to what category it falls under or what properties it may have. (Pylyshyn, 2001 p.129)

In philosophy, Ned Block (Block, 2001) has argued for a distinction between two types of consciousness: phenomenal consciousness and access consciousness. Phenomenal consciousness is what I am calling 'experience' or 'awareness': consciousness of the way the world appears to us. On the other hand, access consciousness is a subset of phenomenal consciousness, the subset that is available to memory systems or other executive systems.

The information that reaches access consciousness can be reported or can be used by other person-level systems, for, for example, intentional action.

There is some evidence for such a distinction from neuroscience as well. Lamme (2003) suggests that different types of neural activity can be identified that correlate with awareness and with reportable information. He hypothesizes that recurrent neural activity (neural activity that involves feedback from higher to lower brain areas) is important for awareness, but is not sufficient for reportability. Reportability involves executive control by frontal brain regions, and attention acts as a gate to allow information from visual representations to reach frontal areas.

To sum up, determining the relation between attention and awareness will have a major impact on the conceptualist/nonconceptualist debate. If attention limits the reportable contents of experience, but not the phenomenal contents, then demonstrative concepts will be of no avail in arguing that the contents of experience are all conceptual. A further argument will be necessary to rule out the possibility that nonconceptual contents enter experience. Moreover, recognition of the role of attention in making something reportable can explain why the conceptualist's claim may seem so compelling: the contents of experience we can report are influenced by attentive processes, and these same processes are involved in conceptualizing that content, thus providing a possible unified account for why verbalizable elements of experience are conceptual. However, once we recognize that these contents may not exhaust the content of experience, the conceptualist claim loses force. Further reason to doubt conceptualism are provided by the argument presented in Part 4 of this paper, which aimed to demonstrate that the very processes invoked to defend conceptualism against its main challenges themselves may implicitly rely upon

nonconceptual content of experience. The weight of evidence against conceptualism is considerable.

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Chapter 3: Propositional attitudes without language

Philosophy of psychology driven by the concerns of philosophy of language does not fall happily into place. (Dennett, 1987b p.204)

In the first two chapters of this dissertation I argued that there is continuity between the mental lives of humans and nonhuman animals in that both animal and human experience consists in part of contentful mental states that are nonconceptual. However, in the philosophical literature another divide has been postulated between humans and animals: Some say that only humans can have propositional attitudes. In this chapter, I argue against this view, and suggest a view according to which both humans and some nonhuman animals have propositional attitudes. The chapter will be divided into four sections. Part 1 provides an overview of the range of positions that some noted philosophers have taken on the question of whether animals have propositional attitudes. In part 2 I provide reasons for thinking that Davidson's arguments for restricting propositional attitudes to humans are flawed or unmotivated. In part 3 I briefly consider Dennett's instrumentalist view, according to which an enormous range of systems, including animals and simple artifacts, have propositional attitudes. On Dennett's view, having propositional attitudes isn't having much, and this stems from his noncommittal stance on the psychological status of propositional attitudes. I argue that his position is too permissive, and suggest that a more constrained, realist view of propositional attitudes is preferable. In part 4 I briefly examine one popular realist view, Fodor's Language of Thought (LOT) hypothesis, and conclude that it is not of much practical value in determining whether or not a creature has propositional attitudes. I

then suggest some alternative realist criteria for having propositional attitudes, according to which at least some animals can have propositional attitudes.

Part 1: Animals and propositional attitudes

There are reasons to think that animals have propositional attitudes. That they have wants, beliefs, fears, and so on, is the position of common sense. We naturally and pretheoretically speak of our dog's belief that you are leaving without him, a horse's fear of snakes, the cat's desire to sit on the keyboard.¹ It is in this way that we make sense of their actions, just as we make sense of the behaviors of the people around us.

Other reasons to presume that animals think stem from more theoretical perspectives. We have evolved from the same ancestors as nonhuman, non-language-using primates, and, further back in time, from the same ancestors as other mammals. Our use of spoken language distinguishes us behaviorally from these other animals, but does it also distinguish us from them as being believers? This will depend upon what the relation is between language and propositional thought. If language makes possible thought, as Davidson seems to think, then it would be correct to maintain that only humans think (i.e. have propositional attitudes). However, if thought is evolutionarily more basic than language, then there is reason to believe that animals think.²

¹ Of course, our attributions of propositional attitudes to animals becomes less plausible as the animal's behavior becomes simpler and more stimulus-driven. Here I am concerned only to argue that some nonlinguistic creatures can have propositional attitudes.

² Yet another reason to think that nonlinguistic animals have propositional attitudes comes from anthropology. The archaeological record suggests that our hominid ancestors' behavior was exceedingly complex long before their vocal tracts were

Biology provides another reason to think, cautiously, that animals have similar cognitive capacities to ours. Our neurobiology is not fundamentally different from the neurobiology of other mammals, at least as far as we currently understand it. If one thinks, as I do, that our basic representational capacities supervene on our neurobiological functional architecture, that gives us *prima facie* reason to think that we share the basics of propositional thought in common with animals.

What we think about animal thought is not a question merely of theoretical interest. Having a clear view of how we are cognitively related to animals gives us an understanding of our place in the natural world. It affects how we deal with animals, what we view as unique about humans, as well as what we think about infant cognition. Moreover, whether animals think, and what types of thoughts they can entertain, has implications for whether and to what extent we should view animals as worthy of moral consideration.³ Although I do not mean to address any of these topics here, I see refuting claims that animals don't have beliefs and desires as a first step in addressing these larger issues.

Before tackling the vexing question of whether animals can have propositional attitudes, something must be said of propositional attitudes themselves. A creature is said to have a propositional attitude when he stands in some appropriate relation (i.e. hoping, wanting, fearing, believing, etc.) to a

suitable structured for speech. How is one to explain practices such as burying the dead, tool making, and adorning the body with artifacts without invoking beliefs and other propositional attitudes? However, I gather there is some disagreement in the literature as to whether some form of symbolic vocal communication was possible in these early hominid species, and advocates of the necessary relation between language of thought could maintain that rudimentary language abilities could support propositional attitudes.

³ See, for example, Carruthers (1989), who maintains that animals are not conscious in the way necessary to be granted any moral consideration.

proposition. Some have argued that there is no account of what a proposition is that is both coherent and satisfies the various criteria that propositions are traditionally supposed to satisfy (that tradition stemming initially from Frege) (Dennett, 1987a).⁴ It is unfortunate, but true, that if our notion of a proposition is fundamentally incoherent, and no compromises can be reached on the criteria propositions must satisfy, then there is no such thing as a proposition. *A fortiori*, we can't stand in any meaningful relation to propositions, so we lack propositional attitudes. Such is the position of some eliminativists. Others have compromised on the demands put on propositions. Quine, for instance, while being no friend of abstract entities such as propositions as usually conceived, found sentences to be less ontologically troublesome stand-ins for them, and held that to have a propositional attitude is to stand in some relevant relation to an eternal sentence, thereby still satisfying our philosophical intuitions about the role of propositional attitudes in explanations of human thought and behavior.

What account of propositional attitudes one prefers may well be influenced by what one takes propositions to be. However, I have no intention here of providing a philosophical account of propositions that avoids the pitfalls to which previous accounts have fallen prey. My aim is rather to sketch an account according to which some nonhuman animals could have propositional attitudes. I therefore assume that humans can have propositional attitudes, where this entails there is something *proposition-like* to which we can be appropriately related, whether this be a sentence (Fodor, 1978), a set of possible worlds (Lewis, 1979; Stalnaker, 1984), or a state of affairs (Marcus, 1990). I do not take this task to require an antecedent

⁴ See, for example, (Dennett, 1987a).

argument about the nature of propositions themselves. My burden, I take it, is to show how animals might be appropriately related to something sufficiently proposition-like that they count as having propositional attitudes.

The lay of the land

There are a spectrum of views regarding which systems have propositional attitudes, and in virtue of what they do. Donald Davidson occupies one end of the spectrum concerning who has propositional attitudes: his position is that among animals, only humans do.⁵ Daniel Dennett occupies the other, for according to Dennett, all animals, and even many inert objects, have propositional attitudes. Jerry Fodor is an example of someone that falls somewhere in between these two extremes.

For Davidson, having propositional attitudes is a unique property of human beings. Davidson's arguments for his position are various, but they all rest upon the idea that it is necessary to be the speaker of a language in order to have propositional attitudes, and since only humans have language, only humans have propositional attitudes.⁶ In the Part 2 I critique the most compelling of Davidson's arguments against propositional attitudes for nonhuman animals.

Daniel Dennett resides at the other extreme regarding the uniqueness of animal thought. In contrast to Davidson's position that propositional attitudes are so

⁵ Perhaps the eliminativist view of Churchland also deserves mention. I find it hard to fit him on the spectrum of how many creatures have propositional attitudes, since he doesn't believe there are any, and his error theory suggests that the question is ill-posed. I will not have much to say about the Churchlandish position here.

⁶ Davidson equates thought with propositional attitudes. He famously expresses his denial of propositional attitudes to nonhuman animals as the claim that animals can't think (Davidson, 2001a).

special that only humans have them, Dennett maintains that all sorts of animals have propositional attitudes -- not only humans and other primates, but also dogs, cats, platypi, birds, and insects... In fact, according to Dennett, many *nonbiological* systems have propositional attitudes, such as thermostats and other artifacts whose functioning is regulated by goal-specifying states. For Dennett, then, propositional attitudes are ubiquitous, and having them is a property not reserved for a very special kind of system at all. In Part 3 of this chapter I consider Dennett's position, and argue that his liberal position, while useful to adopt for the purposes of predicting behavior, ignores an important realist component that it behooves a cognitive scientist to consider.

Somewhere along this spectrum lie those who think that propositional attitudes are enjoyed by at least some animals in addition to humans, but that not every system that displays predictable, goal-oriented behavior has propositional attitudes. Having a propositional attitude involves having an internal structure of a certain sort. Part 4 will consider arguments to this effect. Fodor is a prominent philosopher occupying this middle ground; he thinks that many animals have beliefs, desires, and other propositional attitudes. My position about what sorts of systems have propositional attitudes also lies in this vicinity: animals other than humans have propositional attitudes, while thermostats do not, although we may find it convenient to speak as if they do.

We might ask yet other questions about the landscape of positions on (using Davidson's terminology) animal thought. In virtue of what does a creature have propositional attitudes, and in virtue of what is one justified in attributing them to a creature? Both Davidson and Dennett have similar views about what justifies the

attribution of propositional attitudes to other creatures: they both use an interpretational strategy. Briefly, the belief-attributer takes the stance of the radical interpreter, and makes a rationality assumption of the creature in question. If a creature's behavior can be accurately predicted or explained by attribution of beliefs and desires in conjunction with the assumption of rationality, we are justified in attributing propositional attitudes to the creature. Dennett, more than Davidson, seems to blur the distinction between the metaphysical and epistemological questions, so that the criterion for x having propositional attitudes is met if x can justifiably be attributed them. What then explains the dramatic difference in the scope of propositional attitude attributions between Dennett and Davidson? After all, according to Dennett, we can take the "intentional stance" toward all sorts of systems, human, animal and artifactual, and attribute propositional attitudes to all; Davidson is willing to grant propositional attitudes to humans alone. The difference lies in what counts as candidate behaviors to these respective philosophers. While any behavior, even the highly constrained, yet still goal-directed 'behavior' of a thermostat, is amenable to the intentional treatment on Dennett's view, Davidson grants pride of place to linguistic behavior. According to Davidson, we are justified in attributing beliefs and other propositional attitudes to an agent in virtue of their use of spoken reports of those beliefs, desires, etc. I note here some *prima facie* reasons to be dissatisfied with Davidson's approach. To be sure, someone's report of their belief, desire, etc., is a good way of identifying that belief, desire, etc. However, it is not the only way. We do not deny the monk who has taken a vow of silence beliefs and desires, just because he is unwilling to relate them to us, nor do we deny the full complement of propositional attitudes to people who are mute, but

otherwise cognitively normal. It cannot therefore be the actual verbal expression of an agent's propositional attitudes that is required in order to justify attributing propositional attitudes to them.

I will have more to say about these two construals of candidate behaviors in what follows. However, what I want to do now is to contrast the interpretational strategy, which is noncommittal with respect to the psychological reality of propositional attitudes, with a strategy that is explicitly committed to their psychological reality. Some interpretationists, such as Dennett, especially in his early writings, take an instrumentalist view about propositional attitudes. Early Dennett holds that propositional attitudes are instrumentally useful constructs that allow us to predict and explain the behavior of a class of system, what he calls intentional systems. Since he is also a physicalist, he thus believes that the internal states that cause systems to exhibit these behaviors are physically realized. However, he doubts whether there is any identifiable kind of internal state that occurs in just those circumstances in which we invoke a certain propositional attitude. As Dennett sees it, propositional attitudes are useful fictions that play a role in psychological theory, much as point masses do in classical physical theory.⁷

According to Davidson, there is something quite special a creature must have in order to have propositional attitudes: spoken language. Davidson arguably takes a more realist view about the nature of propositional attitudes than does Dennett: presumably our ability to speak allows us also to have beliefs, construed as sentences

⁷ To be precise, later Dennett does not see his instrumentalism as opposed to realism. There really is such a thing as the equator, although it is not an object, but a construct. Similarly, there really are propositional attitudes, but there may not be anything corresponding to a belief or desire in our heads.

to which we would assent, and these mental states are psychologically real.⁸ In this respect, Fodor is more like Davidson than Dennett. According to Fodor, there is likewise a very special characteristic that a creature must have in order to have propositional attitudes, and that is a language of thought. Fodor, more so than Davidson, is avowedly realist about propositional attitudes. The reason that humans and (at least most) animals have propositional attitudes, is not simply because they tend to act in accordance with propositional attitude psychology. Rather, the reason is that cognition is just computation over syntactic objects which express propositions. These objects are sentences in a language of thought, and a thinker believes that X just in case he stands in the belief relation to S, where S is a sentence in the language of thought, and S means X. Thus, a person's or animal's behavior conforms to propositional attitude psychology *because* it is the causal consequence of computations over syntactic objects which express propositions. With respect to the kinds of things that justify propositional attitude attributions, I also locate myself more or less in Fodor's camp: animals, like people, have propositional attitudes in virtue of their internal representational states; and in principle, at least, these are types of states which humans and animals can share.

So I agree with Fodor that nonhuman animals have propositional attitudes, and that they have them in virtue of their representational states. However, as I will argue in the final section of this chapter, I don't think that the Language of Thought hypothesis, as Fodor construes it, is the best way to go about determining whether a system has propositional attitudes.

⁸ Because of Davidson's anomalous monism, the fact that these psychologically real mental states exist does not provide us any licence to infer anything about how they are physically realized or consequently how they will evolve at anything but a psychological level.

Part 2: Davidson's denial

In this section I aim to demonstrate that some standard arguments for denying propositional attitudes to animals are flawed. I focus upon arguments found in Donald Davidson's papers "Thought and talk" (Davidson, 1975) and "Rational animals" (Davidson, 2001a). These papers argue that animals that lack language lack propositional attitudes.⁹ Davidson, like Malcolm (1972) before him, claims that animals lack propositional attitudes *because* they lack language. Davidson's main argument is:

- P1.1: If something has propositional attitudes, then it has language
- P1.2: Animals don't have language
- C1: Animals don't have propositional attitudes

The logic here is unassailable: if Davidson can establish P1.1 and P1.2, then he succeeds in establishing that animals lack propositional attitudes, and thus thought.

Let us grant P1.2, since for Davidson, having language is having the ability to speak (Davidson, 2001a p.99), to express one's thoughts, and to understand the speech and propositional attitudes of others. It is pretty clear that animals don't have this ability.

⁹ Davidson accuses those who think that animals think as "animal lovers" who unjustifiably anthropomorphize when they interpret animal behavior as reflective of mental states with propositional content. The question of whether animals have propositional attitudes has nothing to do with whether one loves them or not, but liking animals may correlate with believing that they think. For being positively disposed toward animals increases the likelihood that one spends time around them, and more exposure to their behavior provides one with additional evidence that should be taken into account when determining what sorts of abilities and representations best characterize animal cognition. Extended exposure to and interaction with animals, rather than being a barrier to proper reasoning, puts one in a better position to evaluate the question by increasing one's evidential base. Davidson clearly has not spent much time around animals.

Thus, the success of the argument rests on the establishment of P1.1, the claim that having propositional attitudes requires language.

There are two ways to take this question of whether propositional attitudes require language: as a question about the grounds for the possibility of having thought, or about the evidential requirements for justifiably attributing it. If one is a realist about thought, it is the first sense which is of primary interest. Davidson, because of his interpretationism, exhibits an uneasy tension between these two questions. While he tends toward realism about belief, he often seems to think the metaphysical and epistemological construals of the question amount to the same thing: a creature has propositional attitudes if we ought to interpret him as having them. I suspect that this collapsing of the issues accounts for Davidson's view that the question of whether a creature has propositional attitudes is so closely tied to the evidential question, "What evidence is relevant to deciding whether something has propositional attitudes?" And since Davidson thinks that "having the gift of tongues" is both necessary and sufficient for having propositional attitudes, he views language possession as *the* evidential criterion for propositional attitude attribution. He consequently denies that we can be justified in attributing propositional attitudes to creatures on the basis of nonlinguistic behavior.

There are three main problems with Davidson's strategy. First, as I will shortly demonstrate, Davidson's arguments for the necessity of language for thought are flawed. Second, because Davidson is only willing to countenance as evidence for thought whether or not the purported necessary and sufficient condition obtains, he fails to recognize as evidence other characteristics of a cognizer which a more neutral party would surely find to bear evidential weight. So while everyone might accept

that verbal reports of beliefs and desires are sufficient evidence for their existence (though they need not – consider your talking computer, “I’m sorry, but you have no mail”), it does not follow that only such reports constitute evidence for the existence of propositional attitudes. Indeed, we should immediately reject the presumption that the only evidence relevant to deciding whether something has propositional attitudes is the presence of a necessary and sufficient condition for having them. In normal empirical inquiry, criteria that are necessary and sufficient are rarely the only ones that qualify as evidence for assessing empirical claims. For instance, a rash may be relevant evidence for determining whether a person has Lyme disease, despite the fact that not all people with rashes have Lyme, and not all people with Lyme have rashes. Might there not be evidence highly indicative of whether a creature has propositional attitudes, despite the fact that the evidence is not decisive? I suggest that reasonable, predictable behavior is a clear source of evidence for the existence of propositional attitudes, despite the fact that it only provides defeasible reasons for thinking they exist.

Third, Davidson’s approach to propositional attitude attribution is at odds with his own interpretive strategy for attributing content to mental states. The basic idea of Davidson’s interpretationism is that in ascribing content to another person’s mental states, we assume that that person is rational, and we ascribe content to his utterances and mental states in such a way as to maximize the coherence of that person’s beliefs and desires in light of his behavior. Undeniably, there is a class of behaviors that humans have and animals lack, namely linguistic behaviors, but both humans and animals share a wide range of nonlinguistic behaviors. On the face of it,

those behaviors provide ample evidence upon which to base attributions of mental content.

Davidson pointedly refuses to apply this strategy to nonlinguistic animals. Why might he do this? The most likely answer is that he believes that rationality is impossible without language. Although he doesn't offer any arguments for this, more than a few people have. However, there is reason to doubt this claim. First, it presupposes a very narrow view of rationality, one already colored by a linguistic bias. I think, instead, that taking this view implicitly begs the question against animal thought. What rationality is is a vexed question in philosophy, and determining whether a creature is rational falls prey to the same holistic problems as determining whether it has propositional attitudes. Second, we ought to recognize that it may be possible to develop a theory of rationality not predicated on linguistic manipulation, but instead on a conception of practical reason. After all, animals of all stripes are here now because they have been evolutionary successful, and to have succeeded requires in some nontrivial sense that goals are achieved by instrumental behavior. Perhaps all animals exhibit some degree of rationality. Perhaps building on this view of rationality, it will be possible to posit criteria or hallmarks for minimally rational behavior that are independent of language. For example, one way to assess rationality might be to see to what extent an animal's behavior is predictable or explicable with reference to survival requirements and common sense belief-desire psychology. A wide range of animal behaviors certainly seem apt for explanation with reference to the rational interplay of ecologically-relevant propositional attitudes. If one thinks that the aptness for explanation in terms of rationality is sufficient evidence for rationality, and accepts, as Davidson does, that rationality rests on the interplay of

propositional attitudes, then we have ample evidence that animals have propositional attitudes, and therefore, that they think.

Davidson, however, obviously thinks that the reasons to deny animals propositional attitudes supercede reasons to attribute rationality to them; he applies modus tollens to my modus ponens. Since he denies that animals have propositional attitudes, and he thinks rationality requires propositional attitudes, he denies that animals are rational. We are led to very different conclusions about the nature of animals' mental life depending upon whether we take ourselves to be more justified in attributing rational behavior to them, or in refusing to attribute to them propositional attitudes. So, let us now turn to Davidson's reason for denying animals propositional attitudes: that language is *necessary* for thought.

Davidson's Master Argument

Davidson's essays gesture at several arguments aimed to show that language is necessary for thought. I'll try to (re)construct the strongest of his arguments, and argue that they fail. They thus also fail to provide compelling reasons to deny that animals have propositional attitudes.

Before turning to his strongest argument, I note that a common reason for supposing that language is necessary for thought is that one is in the grip of a picture about the nature of thought – namely that thought is a type of language, or is linguistic or language-like. I think this diagnosis is true of Davidson, for he discusses two arguments in this vein, emphasizing the similarities between language and thought. These arguments are (1) that thoughts have definite content, and that definite content requires language, and (2) that propositional attitudes are opaque,

and language accounts for their opacity. I will not argue against these claims in any detail here, for they are too easily refuted. Suffice it to say the following: Both arguments take the following form: Propositional attitudes have a property, p; language has property p. Hence, the linguistic nature of thought is required to explain its having property p. This argument is fallacious – one would need an argument that nothing *but* language could have property p, but all that is on offer is that language can be invoked to explain the presence of p. Furthermore, I note that in these cases, whether thought has the property p in question is itself contentious. Finally, even if having property p were somehow constitutive of thought, and to have p thought had to be linguistic, this would still not entail that a creature with beliefs and desires must have language, in Davidson's sense. Fodor, for instance, thinks that a creature must have a language of thought to have propositional attitudes, but he holds that it need not be able to speak or understand a public language to have a language of thought. If Fodor is right, Davidson has erred in thinking that thought requires an external as opposed to an internal language. If animals have a language of thought, they are non-language-using thinkers.

Davidson's strongest arguments for why thought requires language stem instead from his interpretationism. Davidson has a genetic view of what it takes to be an interpreter, and argues that language is a prerequisite for entering the world of interpretation. As I will argue, however, even from an interpretationist stance, language is not necessary for having thought.

According to Davidson, there are certain prerequisites for being an interpreter: namely, possessing certain concepts.¹⁰ He also thinks that an organism must have language in order to have these concepts.¹¹ For the purposes of this paper let us assume that animals can represent at least some concepts without having language. In the final section I argue briefly that this is the case.

Davidson differs from the widely held view that having *some* concepts is required for having propositional thought in supposing that there are *specific* concepts that a creature must possess in order to have propositional thought. In what I will call Davidson's Master Argument, he links thought to language by way of higher order thoughts. Specifically, Davidson suggests that a concept of belief is a prerequisite for propositional attitudes, and that a concept of belief is unavailable without language. Here is Davidson's Master Argument:

- P2.1 If S has propositional attitudes, then S has beliefs
- P2.2 If S has beliefs, S must have a concept of belief
- P2.3 If S has a concept of belief, S must have language
- C2 If S has propositional attitudes, then S has language

The argument is clearly valid, but is it sound?

¹⁰ This ought to be distinguished from the idea that having propositional thought requires having some concepts, and that the contents that can be entertained by a creature in propositional thought are constrained by the set of concepts that creature possesses. This view, held by a variety of thinkers from Frege to Fodor, stems from the belief that the propositions to which a thinker stands in relation in having a propositional attitude are complex entities composed of concepts. But then the question of whether animals have propositional thought can be recast as the question of whether animals have concepts. If additionally one combined this view of the cognitive structure of propositions with a view according to which concept possession requires language, one would have an argument for why language is necessary for propositional thought. However, whether concept possession requires language is a question that depends, among other things, on what concepts are. Whether the vehicles of thought are language-like, as I argued earlier, is orthogonal to the issue of whether an organism possesses the capacity to speak or understand speech. Therefore, Davidson's argument cannot rest on the nature of concepts.

¹¹ He is not clear on whether he thinks one needs language in order to represent the content of the concept, or in order to acquire the concept.

P2.1 is plausible; it just highlights Davidson's view that beliefs are a fundamental propositional attitude, and that to have any propositional attitudes at all, a creature must have some beliefs. P2.2, the next premise, is an interesting one, but it is not clear what it means. What exactly is a 'concept of belief'? Let us distinguish three different conceptions of a 'concept of belief'. The deflationary conception of what it is to have the concept of belief merely requires an understanding that the world is distinct from how it appears or how one believes it to be, or that belief can come apart from reality. On the deflationary view, then, having the concept of belief is rather like having the concept of an objective reality. I will return to this later. An intermediate notion of the concept of belief involves the ability to attribute representational mental states to oneself and others. The third conception of the concept of belief is a robust one, in which the concept of belief is the fully articulated belief-concept which is taken to be defining of a mature theory of mind. On this robust view, having a concept of belief is an epistemologically rich notion that entails having an ability to pass the 'false belief test'. That is, it is criterial for having the concept of belief that one have the ability to attribute to others a mental representation of the world that may differ from the way the world is, as well as a recognition of the perceptual circumstances that would engender false representations.

Which, if any, of these conceptions of 'concept of belief' is important for the argument that links belief to language?

The robust conception of belief

Requiring a concept of belief in the robust sense seems too demanding for having propositional attitudes. While we might plausibly doubt whether prelinguistic

infants really have propositional attitudes, it is quite clear that children who have already acquired a sophisticated facility with language have propositional attitudes. Children of two and three, for instance, clearly refer to objects in the world using language, and they readily express their desires (“I want the green monkey!”), beliefs (“I think the ball is under the bed”), as well as fears and other propositional attitudes. They understand others, refer to their own and others’ mental states, and communicate effectively. We typically and with great conviction attribute beliefs to children of these ages. Nonetheless, until the age of four (two years after they develop considerable language abilities) children lack a concept of belief in the robust sense.¹² Thus, we make ordinary propositional attributions long before children acquire the robust concept of belief.¹³

Moreover, it is doubtful that Davidson means to implicate such a robust conception when he claims the concept of belief is necessary for having beliefs. After all, from the standpoint of his radical interpreter, one can only be a believer in virtue of interpreting others, but it is unclear why the possibility of such interpretation should rest upon a grasp of others’ mental states being beliefs in this robust sense, rather than in one of the two weaker senses described above. In “The Second Person,” for instance, Davidson argues that for our mental states to have determinate content we must interact with another being in order to “triangulate”

¹² I have been told that in a yet-unpublished work, Rene Baillargeon has shown that younger children have a concept of belief, but that the linguistic formulation of the false belief task confuses them until the age of four. Baillargeon’s theory is that a concept of belief is innate, but if this is so, it lends no more support for the importance of language to the concept of belief, since children do not learn language until about age two.

¹³ In addition, at ages far younger than those at which children pass the false belief task, they act as interpreters, in Davidson’s sense. So if interpretation is central to having propositional attitudes, it doesn’t require a robust theory of mind.

and thus make determinate the referents of our thoughts. Nothing in this picture requires that an interpreter have a robust concept of belief, as opposed to a more deflationary one.

The intermediate conception of belief

Most plausibly, then, if having a concept of belief is necessary for having beliefs, it can only be in one of the two deflationary senses. Let us consider why Davidson might think it important to have a concept of belief that aligns with the intermediate notion -- that involves the ability to attribute representational states to oneself and others.

One potential reason involves self-reflection: perhaps being a believer requires being able to think of oneself as a believer, and thus requires the concept of belief. This amounts to the claim that beliefs cannot be held non-reflectively. Since we clearly do have beliefs that we do not have beliefs about, what is at issue is not the actuality of having beliefs about beliefs, but the possibility or capacity to do so. However, while there are arguments that the ability to think about oneself as a believer is required for a rich construal of theoretical rationality (see Bermúdez, 2003, chapter 7), there is no clear argument why such reflective ability should be constitutive of having beliefs. Indeed, it seems like the ability to believe things about one's beliefs would require that one could believe things, so that belief is conceptually prior to self-reflection. In any case, self-reflection is not Davidson's stated reason for thinking the concept of belief is important for having beliefs.

The other reason to hold P2.2 under the intermediate conception links the ability to attribute mental states to others with having the concept of belief. There are two different strengths of intermediate interpretations to consider. According to

the less demanding interpretation, a concept of belief is required in order to attribute contentful states to other creatures, whereas the more demanding one holds that a concept of belief is required to attribute propositional attitudes to others: one must be an interpreter, not just an interpretee.

I think we can easily discount the less demanding of these interpretations for the purpose of this argument linking thought to language,¹⁴ because if P2.2 is interpreted in this way, then P2.3, the claim that language is required for a concept of belief, read in this way, is false. There is ample evidence that non-language-using animals are able to attribute representational states to other animals. One compelling illustration of this comes from (Hare, Call, Agnetta, & Tomasello, 2000), who shows that subordinate rhesus monkeys only approach food in the presence of a dominant male when they know that the male is unable to see the food (dominant males appear not to care whether or not a subordinate male sees food, pointing to yet a further level of sophistication in nonlinguistic animals thought). Thus, if it is the case that to believe requires having the ability to attribute contentful mental states to others, then it is not the case that believing requires language.

So what remains is the notion that the ability to attribute beliefs (qua propositional attitudes) to others is necessary for having beliefs. Remember that we have already discounted the robust notion of belief as too demanding, so what is necessary is not that animals have a notion of false belief per se, but rather a notion of a belief as a representational mental state that can play a role in behavioral explanation or prediction.

¹⁴ We ought to reject this interpretation for the purposes of Davidson's argument, despite the fact that we may ultimately agree with it as a necessary condition for having propositional thought.

It certainly is possible that a representational ability such as this might require language, or at least some sophisticated ability to symbolize abstractions and predicate them of objects. Whether this is so is ultimately an empirical question. But for Davidson's purposes, this is irrelevant, for entirely lacking is a positive argument for why this relatively demanding notion of attributing content to others is the right one to require for an organism to be a believer.

Surprise

Let us take stock: of the various conceptions of 'concept of belief' that might play a role in Davidson's argument, we have rejected the robust conception as too strong, and have argued that the ability to attribute mental content does not require language. We are left with two interpretations of 'concept of belief': the most deflationary, which is equivalent to a notion of objectivity, and a fairly demanding version, which involves the ability to attribute to others propositional attitudes. As we will see, in order for Davidson's master argument to go through, it must slide between these two conceptions of 'concept of belief': the stronger version plausibly requires language, but Davidson's arguments only support the weaker version.

In Davidson's most forthright explication of what he means by 'concept of belief,' he suggests that there is a behavioral mark that is coextensive with having such a concept: surprise. The willingness to consider some sort of nonlinguistic behavior as relevant to the question of propositional attitudes is a methodological breakthrough, for it provides an avenue independent of language for assessing whether an animal has the requisite cognitive machinery to be a believer. Davidson maintains that the ability to be surprised is diagnostic of having the concept of belief. It indicates recognition that one's own mental representation fails to conform to that

which it represents, and as such it constitutes necessary and sufficient evidence of the concept of belief.

Following this intuition, we can amend Davidson's master argument to incorporate this insight. Argument P3 reads:

- P3.1 If S has propositional attitudes, then S has beliefs
- P3.2 If S has beliefs, S has a concept of belief
- P3.3 S has a concept of belief iff S has the capacity for surprise
- P3.4 If S has the capacity for surprise, S has language
- C3 Propositional attitudes require language

The idea that surprise goes hand in hand with the concept of belief is not implausible: if surprise issues from the recognition that one's belief about how the world is fails to correspond with the way the world is, then surprise is good evidence of the concept of belief. Moreover, because it does not have implications for the ability to attribute propositional attitudes to others in an operative sense, it suggests that the interpretation of 'concept of belief' that Davidson favors is a deflationary interpretation: one that involves appreciation of the appearance/reality distinction. Thus, P3.2 takes the deflationary interpretation of the concept of belief, and for the argument to be valid, P3.3 must also take that interpretation.

Unfortunately, given the deflationary interpretation, P3.4 is false. There is clear and abundant empirical evidence that the ability to be surprised at the mismatch between the world and one's own representation of the world is independent of language (Dupoux, 2001; Feigenson, Carey, & Spelke, 2002; Hauser & Carey, 1998; Santos, Hauser, & Spelke, 2002; Wynn, 1992). Take, for example, an invaluable tool in the developmental psychologist's toolkit: the violation of expectancy looking method (VELM) for testing infants. Many studies performed on prelinguistic human infants employ this paradigm in order to explore what an infant knows. The idea is

simple: infants look longer at stimuli that fail to correspond with their expectations. This method has been used to determine, among other things, that infants have an innate (or very early developing) concept of number. In now classic experiments, Wynn and colleagues demonstrated that infants can do simple arithmetic (Wynn, 1992). She showed infants as young as 5 months a toy, and placed it behind a screen. Then she showed another toy and placed it also behind the screen. The screen was then lowered, revealing either two toys, the expected outcome, or only one. Infants looked longer at the unexpected outcome. The same paradigm was used with different numerical combinations, demonstrating that for numerosity up to three, infants can do simple addition and subtraction, and are surprised when what is revealed behind the screen does not comply with their expectations. Significantly, this robust effect, which is due to surprise, precedes the development of language by more than a year.

Davidson might reply that it is not actually possessing language, but rather possessing the *capacity for language* that is important for surprise, and thus for the concept of belief. Maybe, even though they cannot yet speak, infants possess a language faculty, which, immature as it may be, is sufficient to support surprise. However, this attempt to patch the argument also fails. The VELM is used frequently in studies with nonhuman primates, and while they never develop language nor seem to have a capacity for natural language, they too exhibit surprise when their expectations are violated (Hauser, 2000; Hauser, MacNeilage, & Ware, 1996). So, it seems, language is not a requirement for surprise, nor is surprise evidence for the presence of language.

The empirical studies of developmental psychologists and primatologists undermine the effectiveness of argument 3 for the claim that propositional attitudes require language. Looking back on the amended argument, we see that P3.4 is false: surprise does not depend upon having language. Moreover, if premises P3.2 and P3.3 are true -- if the capacity for surprise is evidence of the concept of belief, and if propositional attitudes depend upon possession of the concept of belief -- then we have just shown that having propositional attitudes does not depend upon language.

The deflationary conception of belief

On the other hand, suppose that surprise is a red herring – that it is not diagnostic of the concept of belief. Is there other evidence that suggests how to assess when a creature meets the cognitive requirements Davidson thinks there are for having propositional attitudes? In both “Thought and talk” and “Rational animals” Davidson mentions yet another criterion for having a belief which he also thinks links the possession of language to the ability to have propositional attitudes. This is the criterion of ‘objective truth’. Davidson’s argument for language via the criterion of objective truth is as follows:

- P4.1 In order to have propositional attitudes, one must have beliefs
- P4.2 In order to have beliefs, one must have a concept of objective truth
- P4.3 In order to have a concept of objective truth, one must have language
- C4 Propositional attitudes require language

The logic here is again unproblematic, but understanding the premises is not. At times Davidson at times seems to equate the concept of objective truth with that of belief. I take this as evidence that he intends ‘the concept of belief’ in the Master Argument in its most deflationary interpretation: as an understanding that how the world is can come apart from how one takes the world to be. Given this interpretation one could believe that the concept of objective truth co-occurs with

that of belief, or that the cognitive conditions that make possible the concept of belief are the same as those that make possible the concept of objective truth. In any case, Davidson sees a tight connection between the notions of belief and objectivity.

How are we to understand 'concept of objective truth in P4.2? If Davidson means it to be a metasemantic concept, such as having a Tarskian definition of truth, or an understanding that truth applies to propositions, and so on, then it would be almost assured that one could not grasp the concept of truth without language. It would explain the *prima facie* plausibility of P4.3. However, if that were the case, P4.2 would be false, for people certainly have propositional attitudes even if they never become philosophers, even if they never have an inkling of metasemantic notions.

Another clue about what Davidson means by objective truth comes from his emphasis on triangulation. Davidson thinks we need to interact with another person in order to come to see the world as external to us – in order to develop a notion of objectivity. By linguistically triangulating on an object with another, we are forced to recognize that object as part of an objective reality. Davidson illustrates this view in

The Second Person:

Belief, intention, and the other propositional attitudes are all social in that they are states a creature cannot be in without having the concept of intersubjective truth, and this is a concept one cannot have without sharing, and knowing that one shares, a world, and a way of thinking about the world, with someone else. (Davidson, 2001b p.121)

However, there are two fundamental problems with using triangulation as an argument for language being necessary for thought. First, there is nothing apparent about triangulation that requires spoken language as opposed to some other sort of joint interaction or nonlinguistic communication. It is, indeed, difficult to see why language as opposed to action is operative in developing a notion of a world external

to ourselves. So triangulation fails to show that language is necessary for thought. Secondly, it is difficult to see how triangulation could itself suffice for a notion of objectivity. In order for me to triangulate with another, I must *first* see the other as part of the external world as opposed to an element in my mentality. As long as the other is merely a part of the way I take things to be, it cannot fulfill the role of the second person. So triangulation also fails as a mechanism for constructing the concept of objectivity. Nonetheless, Davidson's emphasis on triangulation strongly suggests that by 'objective truth' he means the appearance/reality distinction.

This interpretation is further strengthened by taking seriously the fact that Davidson thinks the concepts of belief and truth are closely linked. As mentioned earlier, having the concept of objective truth is nothing other than understanding that how the world is can come apart from how one takes the world to be. This is the only notion of 'the concept of objective truth' that meshes with the other arguments Davidson raises regarding belief and surprise. But if this is correct, then P4.3 is false. In the looking-time study discussed earlier, the child clearly has developed expectations of what lies behind the screen, and must somehow represent this to herself. When the screen is lowered and the child sees what is behind the screen, there must be some sense in which the correspondence with the expectation or lack of correspondence is noted, and in which the data coming in from the senses is privileged over the internal representation. But clearly this sort of grasp of reality does not depend upon language: prelinguistic infants and nonlinguistic animals possess it. One can easily imagine how violation of expectation can be instantiated in a system with imagistic thought. The languageless child need only conjure up an image of the objects behind the screen and to compare this with the visual scene

before him. As long as the child privileges the sensory information over the mental representation, we might say that he has a concept of reality and the belief/reality distinction. In summary, then language is not required for a concept of objective truth.

Davidson argues that language is required for thought. In support of this, he offers two varieties of arguments: arguments that depend upon language to account for similarities between language and thought, and arguments that depends on language to supply or support concepts that are requisite for thought. The first set of arguments fail in principle: having language is not the only way to account for those features of thought, if indeed these features characterize thought intrinsically. The second variety of argument I have treated in detail here, for they are more compelling. The argument that having thought requires having a concept of belief rests heavily upon what a concept of belief is. Davidson's arguments seem compelling because their plausibility relies upon a slide between less and more demanding conceptions of the concepts he says are required. It is quite plausible that the demanding interpretations of the concept of belief and objective truth require language. However, Davidson's examples and arguments support only deflationary interpretations of the concepts of belief and objective truth: those that involve distinguishing between appearance and reality, or those that involve attributing mental content. Moreover, empirical studies show that language is not required for having deflationary versions of these concepts: infants and animals show surprise well before they have a concept of belief; young children appear by all counts to have propositional attitudes despite the fact that they still lack a fully articulated concept

of belief. Nor, studies show, is language necessary for surprise, for attributing mental content, or for an account of the deflationary notion of objective truth.

There remains one interpretation of Davidson's argument that is not clearly flawed: the idea that to have thoughts, one must be able to attribute propositional attitudes to others, in the sense that one must be able to attribute to others mental representations that play theoretical roles in explaining behavior. Indeed, interpretationism suggests that to be a believer, one must be able to attribute a belief (as such) to another. It is very likely that this level of sophistication of thought does require language. However, we lack a positive argument for why this conception of a concept of belief is required for having belief. Nothing in the triangulation argument speaks to it, nor does interpretationism support such a stringent requirement for having beliefs. If such an argument is to be upheld, much more work needs to be done.

The upshot is that Davidson fails to establish that propositional attitudes require language. Given the strong presumption we have that animals think, and the absence of a good argument to defeat this presumption, we are left with the common sense view that nonlinguistic animals can have propositional attitudes. I am relieved, for had it turned out that nonlinguistic animals could not have propositional attitudes, I cannot imagine how I could persuade Enzo to stop having them.

Part 3: Dennett's liberalism

As mentioned in the outset, my position lies somewhere between Davidson's position that only humans have propositional attitudes, and Dennett's position that anything whose behavior patterns can be described to fit the patterns of

propositional attitude psychology has propositional attitudes. In stark contrast to Davidson, Dennett does think that animals can think. Indeed, all animals have propositional attitudes, according to Dennett, from the lowliest single-celled creature to the most sophisticated of our evolutionary brethren. However, it is clear that Dennett's intentional stance framework casts too wide a net, for his criterion for propositional attitude attribution is too weak. As he puts it:

All there is to being a true believer is being a system whose behavior is reliably predictable via the intentional strategy, and hence all there is to really and truly believing that p (for any proposition p) is being an intentional system for which p occurs in the best (most predictive) interpretation. (Dennett, 1987c p.29)

On his account then, not only do single-celled organisms that move toward food sources have beliefs and desires, but so do thermostats, and even, you might argue, planets: Why is the earth's average orbital velocity around the sun 29.78 km/second? Because it wants to go around the sun once every year at an average radial distance of 93 million miles, and believes that $v = 2\pi r/T$! Almost anything can be the object of the intentional stance. Surely we do not want to attribute propositional attitudes to objects with no internal representational states whatsoever.

Dennett's liberalism pushes us to offer further criteria for propositional attitude attribution. If being a believer is going to be an interesting, even instrumentally useful property of a system, it ought to tell us something about the system itself, not just about how we might describe a system. In other words, it ought to tell us something about the way the world is, something consistent with scientific knowledge, and open to scientific investigation. It is unlikely that there are going to be any scientific laws which apply to all the systems that Dennett admits into his broad umbrella of believers, and so unlikely that scientific progress and

Dennettian interpretationism will walk the same path. So here I am making a methodological point: Our psychology and our scientific investigations should provide mutual constraints. However, if we have good reason to believe that a particular psychological framework will fail to dovetail in any interesting way with the results of scientific investigation, we have reason to doubt the psychology, and reason to amend it. Let us look to the most pertinent science for questions about propositional attitudes: cognitive science. The aim of cognitive science is not only to predict behavior, but to understand the mechanisms underlying it. That is, its central goal is to understand how complex systems give rise to complex cognitive behavior. No cognitive science will come up with psychological laws which apply to dogs, people, and planets. If we are to find lawful generalizations about the causal relations underlying cognition, we need to take an explicitly realist stance, and concentrate on the kinds of systems that have internal representational states that presumably give rise to this behavior, and not on the larger class of phenomena that can be described using propositional attitude talk.

On a realist critique, Dennett's interpretationism is too underconstrained. There must be other criteria we bring to bear upon whether a system has propositional attitudes besides whether describing it as such has predictive value. We might start with the reasonable assumption that 'believer' is a natural kind concept, and recognize further that believers are paradigmatically human. Cognitive science has provided us with an idea of something essential to belief, namely, having internal representations. Thus, when engaged in the project of making propositional attitude attributions, we ought to accept that a minimum criterion for propositional attitude attribution is that a system have internal representational states. This criterion really

is minimal: it rules out inert objects such as planets and falling objects as candidates for intentional attribution, but still admits of single celled organisms and thermostats, as well as complex animals like ourselves. For instance, chemotaxis in single-celled organisms involves intracellular signaling pathways triggered by binding of chemical stimuli to receptors on the cell surface, and these pathways cause local movements of cilia that lead to movement toward the stimulus. Perhaps these states are representational. Thermostats represent the ambient temperature and compare it to the setpoint. They too are representational. So we see that this really is a minimal requirement: the presence of the intracellular messengers or the comparator are sufficient to admit these system to intentional interpretation.

Nonetheless, even though this single realist constraint still seems to admit too much into the realm of believers, the realist, representationalist approach counseled by cognitive science points the way to a promising strategy for distinguishing systems with propositional attitudes from those without. By figuring out what characteristics of internal states are necessary for having propositional attitudes, we might further constrain the class of believers, and thereby both aid the progress of cognitive science and increase our understanding of the psychological phenomena of belief and desire. In the process, we may find that certain creatures that were admitted into the broad menagerie of thinkers according to Dennett's view, are now excluded from the class of creatures with propositional attitudes. Perhaps, in pursuing this strategy, we will find ourselves alone in that category, concurring with Davidson in the end. Or, perhaps we will find that we are joined by some other animals that lack language, but not by all. The final section of this paper pursues the realist strategy.

Part 4: The middle ground

Dennett and Davidson are both anti-representationalists: they attribute propositional attitudes solely on the basis of outward behavior, while the internal workings of systems are deemed irrelevant to the question of whether propositional attitude attributions are appropriate. I have argued that both their approaches are unsatisfactory, for Davidson's leads to the untenable position that animals don't think, and Dennett's leads to the equally unpalatable one that thermostats do. It seems, then, that availing oneself solely of resources external to the system in question does not provide appropriate constraints on a system for the determination of whether it has propositional attitudes or not. An alternative approach is to look toward internal structure for such a determination: to have propositional attitudes, a system must have certain representational resources. But what would those resources be?

Fodor is perhaps the best example of one who has set out representational criteria for propositional attitudes. For Fodor, having propositional attitudes is possible for a system only if it instantiates a combinatorial representational system that includes a set of primitive semantic elements individuated by their form, and syntactic recursive rules which operate on the elements to form more complex meaningful representations.¹⁵ Fodor calls a system of mental representation answering to these specifications a language of thought (LOT). While Fodor clearly does not think this criterion is sufficient for having propositional attitudes, he does

¹⁵ Alex Byrne has pointed out to me that the LOT is supposed to be a contingent hypothesis. Perhaps in some possible world there are beings with beliefs and desires that lack a language of thought. However, as a matter of fact for things around here, a LOT is required for propositional attitudes.

think it is necessary. Sufficiency may be gained by augmenting the LOT criteria with criteria of complexity and perhaps others besides, but Fodor is not explicit about these.¹⁶ So if we accept the claim that any system with propositional attitudes has a language of thought, we can rule out any system lacking a language of thought as a candidate for having propositional attitudes.

Fodor's account is appealing. For one thing, it promises to pick out more or less the kinds of systems we intuitively think can think. If Fodor is right, we have a LOT, since we have beliefs and desires. Other higher animals are much like us, biologically speaking, and thus it is reasonable to postulate that they too have a language of thought, and thus that they too can have beliefs and desires. For notice, having a language of thought does not entail having language; however, it does provide ample resources for explaining how it is that we humans have natural language. So, on Fodor's story, there is no *prima facie* reason to deny thought to nonlinguistic animals.

On the other end of things, Fodor's theory doesn't afford propositional attitudes to thermostats. We know how thermostats work, and they don't have a complex combinatorial symbolic language. We can take them apart, and nowhere do we find a language of thought. And although it is not clear where on the phylogenetic scale a language of thought emerges, it is likely not present in invertebrates, and possibly not even in many vertebrate species. We might expect the language of thought view to justify us in not attributing propositional attitudes to

¹⁶ If these extra criteria are taken to limit what counts as a language of thought, such as "a language of thought must have at least such and such a representational range" or "a language of thought must be at least so and so complex", then the LOT criterion may be taken to be both necessary and sufficient.

insects and maybe not to frogs, but in granting them to dogs, pigs, and apes.¹⁷ This accords well with common sense.

Suppose we accept Fodor's criterion and mean to find out of some given creature whether it has propositional attitudes by finding out whether it has a LOT. As I will argue, however attractive the LOT view initially, upon closer consideration it becomes increasingly unclear what the view amounts to: In what way thought is to be like language, and what it is we are to look for in the brain when we look for a language of thought? Let me explain.

The analogy between LOT and natural language is supposed to be a substantive one: Viewing thought as language-like is supposed to significantly constrain the types of systems that meet the criterion. But what are these constraints, and just how substantive are they, really?

Before exploring this question in detail, I mention a fundamental disanalogy between language and mental representation, a distinction which itself must constrain further theorizing about the nature of the LOT. In a natural language, there is a distinction to be made between representations and meaningful representations. The syntax of natural language is independent of semantics. Consequently, it is possible for a grammatically correct sentence to be meaningless. The same is not true of mental representations. Let us call the thought analog of a meaningful sentence a contentful thought. All mental representations which can play

¹⁷ Fodor's own writings, it should be noted, do not speak to the question of which animals have an LOT, although he clearly thinks that many must. Indeed, Fodor's theory says nothing about using LOT as an epistemic criterion for determining which systems have propositional attitudes. Nonetheless, if we are realists about LOT, the presence or absence of a LOT could be used to identify creatures with propositional attitudes, at least in principle.

a role in propositional attitudes are contentful, since to be a thought a mental representation must be meaningful to us: we must be able to understand our own thoughts. Consequently, in contrast to the case of spoken language, no dissociation is possible between mental representations that are syntactically correct and those that are meaningful.¹⁸ As we shall see, this disanalogy has important ramifications.

Now let us turn to the LOT. At first glance, the constraints it imposes look fairly substantive: Elements of a LOT, basic mental representations or concepts, are supposed to be like words in a mental language; they combine according to syntactic rules to form mental sentences. Furthermore, if a mental sentence *p* occurs in one context (call it ‘the belief box’), the thinker believes that *p*; if it occurs in another, (‘the desire box’), the thinker desires that *p*, and so on. Importantly, the sentences which give content to our beliefs and desires must have the same form, in this case ‘*p*’, in order for our different kinds of propositional attitudes to have the same propositional content.

What sort of constraints does such a framework pose? Everyone agrees that whatever a LOT is, it has to be realized in terms of neural activity and neural structure. Since Fodor’s is a realist proposal, perhaps we can use the LOT hypothesis to help us determine which creatures have beliefs and desires, by looking to see whether a given creature’s brain instantiates a LOT. Unfortunately, no one knows how to begin to individuate words or sentences in the LOT in the brain, let alone

¹⁸ Since the rules of a LOT determine what representations are well-formed (i.e. syntactically correct, or grammatical), but their application serves to generate the representations. Thus, all well-formed thoughts are thinkable, and since thinkable thoughts are contentful, the class of syntactically correct mental representations is coextensive with the class of contentful ones.

how to distinguish things in the belief box from things in the desire box, the fear box, the hope box, and so on. Suppose we find similar patterns of neural activity across the brain, or across time. What are we to make of the finding? Are we looking at words or sentences in the LOT? Or just physical regularities not associated with representational states at all? What is the relevant spatial scale for our investigations? How must representations in a mental sentence be temporally related? Clearly, if the LOT hypothesis is to provide any epistemic guidance, it must offer further constraints to enable us to determine whether a system instantiates a LOT.

Happily, the LOT hypothesis does provide further constraints. The LOT, like language, is supposed to have several features that language has, among them productivity and systematicity. These, too, are supposed to constrain which representational systems qualify as LOT systems.

- a) **Productivity:** A representational system is productive if, in principle, an infinite number of complex representations can be generated from a finite store of representational primitives.
- b) **Systematicity:** Let us suppose that the elements of a representational system can be assigned to classes which reflect how they can be appropriately combined. Given that a system has the ability to token complex representations structured out of elements belonging these classes, the system is systematic if it also has the ability to token structurally similar complex representations in which elements of the original representation are replaced by members of the same class, resulting in a novel, well-formed complex representation. In its strictest linguistic formulation, systematicity is equivalent to Evans' Generality Constraint.

Each of these features of a language-like system of representation deserves a little exposition.

Productivity concerns the ability of a finite representational system to generate an infinite number of complex representations. But productivity is cheap.

Even very simple, and very un-language-like systems can be productive, just as long as more complex representations can be constructed out of simpler ones through iteration, reorganization, etc. For instance, from a single primitive element 'a', I can construct an infinite number of more complex representations:

aa
aaa
aaaa

And so on. This system may be language-like in some very attenuated sense, but its expressive power is exceedingly limited. This example shows that productivity is achievable with a single rule of combination and a single symbol. On the other hand, consider a system of spatial representation, which represents three dots spatially arrayed. If each different spatial arrangement of the images counts as a different representation, then this simple imagistic system is productive as well, since it is possible to form an infinite number of arrangements of the three dots. So productivity is not a strong constraint at all, since very impoverished or non-language-like systems can be productive.¹⁹

On the other hand, systematicity is thought to provide a strong constraint on a representational system. Fodor holds it to be a requirement upon a system of representation underlying thought that it be systematic, because, he claims, our thought is systematic. Furthermore, he argues, the systematicity of language is evidence that it is a good model for thought. But in what way is language a good model for thought? Only by being more explicit about this can the LOT hypothesis

¹⁹ It should be noted that this simple system also has a type of systematicity, one which may be different in kind than the systematicity one might expect a language-like system to show.

constrain the class of systems to which we attribute a LOT, answering this question lays bare a deep confusion.

How might the systematicity of language constrain models of thought? One might think, for example, that there is a parallel between the types of systematic transformations possible in language and those in thought, and that mental representations can be broken down into syntactic classes parallel to those syntactic classes identified by surface grammar. So for example, if the sentence 'Enzo loves Pip' is grammatical, so is the transformed sentence, 'Pip loves Enzo'. Similarly, systematicity of thought would require that if we had the capacity to form the complex mental representation with the propositional content 'Enzo loves Pip', we would also be able to form the related representation with content 'Pip loves Enzo'. The reason systematicity is supposed to hold is that both representations have the same constituents; only their structural relations to each other are varied. So far so good.

Let's take another example. Consider the sentence:

(1) Odorless green parrots sleep quietly.

The sentence is grammatical, and it is meaningful. I can also form a belief with the same propositional content that it expresses, the belief that odorless green parrots sleep quietly. Very good. Now, the assumption of structurally parallel systematicity between language and thought should guarantee that transformations allowed in language are likewise possible in the corresponding thought. Let us take a linguistic transformation of (1) that interchanges representational elements of a given syntactic class with another of the same syntactic class. For instance, we can form the grammatical sentence:

(2) Colorless green ideas sleep furiously.

(2) is a grammatical transformation of (1), with substitutions of some words in (1) with other words from the same grammatical category. People reliably judge (2) to be grammatically correct. That (2) is grammatical attests to the systematicity of English grammar. That (2) is meaningless is irrelevant to the question of systematicity, since grammatically and meaningfulness come apart in natural language. However, problems arise if thought is supposed to parallel language. For a belief with (2) as its content is impossible, for the belief would be contentless. We cannot form any propositional attitude with the content 'Colorless green ideas sleep furiously': we cannot entertain the thought that colorless green ideas sleep furiously, believe that colorless green ideas sleep furiously, or hope that colorless green ideas sleep furiously. But if so, we have to give up our starting assumption that transformations in thought parallel systematic transformations in language. Either thought is not systematic, or if it is, the systematicity of language is no guide to the systematicity of thought.

Perhaps we can still salvage a useful parallel between thought and language with respect to systematicity. For perhaps language-like systematicity can be preserved if we give up the idea that the syntactic categories that our concepts fall under parallel those of the grammar of natural languages. Since not every grammatically correct sentence is one that can be meaningfully thought (i.e. understood), there must be syntactic constraints on thought that cut more finely than do syntactic categories of language. So, in the example above, 'colorless' and 'odorless' would not be in the same syntactic class; neither would 'idea' and 'parrot'.

However, even more fine-grained distinctions would have to be made to ensure that all and only the transformations allowed by the systematicity of language are possible in a system of mental representation. It looks like all these distinctions will have to be based on fine-grained semantic constraints: what is it that makes 'green' unsuitable for modifying 'idea'? Something about the meaning of the two words – perhaps that 'idea' refers to an abstract object, and that 'green' is a color, and that abstract objects cannot be colored. It is clear that the project of refining syntactic categories so that all systematic interchanging within categories yielded meaningful sentences depends crucially on the semantics of the individual symbols, and so we find again that the syntax and semantics of thought are inseparable, whereas in natural language they are separable. So if we insist on preserving language-like systematicity for thought, in other important ways we draw attention to other ways that thought is not like language. In making the analogy between language and thought, the closer we hew to one constraint, the farther we stray from another.

Finally, my hunch is that to preserve a language-like systematicity of thought, the number of syntactic categories resulting from a complete classification of mental representations would be enormous, and the plethora of syntactic rules governing the transformations of those syntactic categories would be so specialized that the system would have little resemblance to that of natural language, so using language as a metaphor for thought would be uninformative. At the limit, each syntactic category might have only a single member. If that were the case, then the syntactic rules governing the construction of well-formed sentences in the LOT would apply just in case some semantic condition is met, and the differentiation between syntax and semantics would be completely obliterated, as would any meaningful parallel between

language and thought. In this extreme case the LOT hypothesis would seem to be compatible with virtually any causal representational system, be it a classical computer, a connectionist network, etc. If this is language of thought, it provides essentially no constraint on the range of systems that would count as having a language of thought, nor would it be a useful guide in empirical studies.

This is the point we have reached: If the LOT is to be a substantive hypothesis it must place significant constraints on a representational system. We might think that such constraints might emerge from taking seriously the analogy between thought and language. However, early on we are faced with a dilemma: One horn is that thought isn't systematic in the way language is; the other horn allows us to preserve systematicity of thought at the price of merging syntax and semantics. Both horns lead to the conclusion that language isn't much like thought. Furthermore, whether or not one attempts to preserve parallel systematicity between thought and language, the analogy is so weakened that having a LOT poses almost no constraint on which systems are systems that instantiate a LOT.

Upon consideration, the claim that thought isn't like language isn't surprising, and the reason goes back to fundamental disanalogy discussed earlier. In thought, the separability of form and meaning no longer makes sense: well-formedness and meaningfulness are inseparable. So thought is not really language-like, and the metaphor of a language of thought is not one that we can milk for much enlightenment as to the nature of thought. When it comes to what to look for in order to determine if a certain creature has beliefs or desires, we are no better off than before we looked to a language of thought to constrain our decision. Regardless of what science might tell us about the nature of a creature's brain states, the

information will not enable us to judge whether the creature has a LOT, and consequently the language metaphor does not aid us in distinguishing systems with propositional attitudes from ones without. This is a poor result if a primary virtue of a realist position on propositional attitudes is to make use of what science can tell us.

In what follows, I will suggest different criteria for what it takes to enjoy propositional attitudes. I will avail myself of external criteria, like Dennett and Davidson do, as well as internal ones, like Fodor. Although when all is done I still won't be able to say which animals have propositional attitudes and which ones don't, I will have laid out criteria, which, if we can determine if they hold of a creature, will allow us to determine whether or not it has beliefs and desires.

Let us begin with what is required in terms of representations.

Uncontroversially, to have propositional attitudes, a system must be able to represent things as being a certain way, as well as represent a goal state: the way that system wants them to be. This rules out planets as candidates for propositional attitudes, since they lack representational abilities entirely.²⁰ However, thermostats represent their environment as being, say, 54 degrees, and have goal states, such as the environment being 65 degrees, so this still leaves thermostats in the running. Even so, thermostats have very simple representational abilities: they cannot represent a state of affairs, except in the very thinnest sense: they can represent the state of affairs insofar as it is concerned with temperature. We might want more for a system with beliefs and desires.

²⁰ Planets may contain smaller systems with representational abilities, but those systems' representations are not accessible to the planet.

The next criterion addresses this issue. The representations must be *structured for the system*.²¹ Being structured is a relational property that holds between a system and one of its proper parts, a representation. For a representation to be structured for a system, it must be composed of stored meaningful representational elements that can be tokened in various combinations. These elements must be able to be tokened at different times as part of different complex representations, and they must contribute their meaning to the meaning of the whole of which they are a part. One test of whether a representation is structured for a system is whether the system can decompose or segment the representation into elements which it can identify with stored representations. A thermostat lacks this feature, because its representational states are singular, standing for a single variable. However, even more complex mechanical systems, like televisions, lack this characteristic. Consider the raster display on a CRT screen. While the picture on the screen might depict a complicated state of affairs for the viewer, the representation for the TV is unstructured: The television does not possess a stock of stored images, by reference to which it can decompose the picture on the screen. With the television screen, it is the viewer that segments the raster display into people, cars, buildings, and so on; the viewer does this on the basis of his own stored representations. Unlike a TV, however, a computer stores and manipulates structures: it can display this manuscript on the left of the screen, on the right, it can copy it to another place, compare it to another document, etc. Does the computer have beliefs and desires?

²¹ It is in virtue of its structure, in part, that the representations are representations of states of affairs. For the world is structured, and to represent the world in the way necessary, the representation has to be correspondingly structured.

No, because there is a further criterion to which we must appeal to decide whether a representation is structured for a system. The elements of the representations must be *meaningful for the system*: the system must be causally embedded in the world in such a way that its representational elements refer to things in the world. For the television, the plausible elements to identify as the ones out of which an image is composed is the individual pixel, but individual pixels are not vehicles of content: they have no meaning for the system. Furthermore, the content of a picture is not a function of the content of its pixels. So likewise we might argue that while it might be said that computers can be programmed to represent states of affairs, both current and goal, the representations of the world that the computer has are not representations *for* the computer: they are not meaningfully linked to the world in the way that would be necessary for the computer to act and interact with the items it represents. We may interpret the computer's representations to refer to various objects in the environment, such as projectiles and neurons, for instance; but these representations do not have meanings *for* the computer: the computer's representations of such things have not been appropriately derived by encounters or interactions with these things in the world. We can view the intentionality of the computer's representations as derived, not intrinsic (Searle, 1992). However, it is not in principle impossible for a machine to have propositional attitudes, if the machine is causally embedded in the world in the right way. This may happen soon. Embodied computation is acknowledged to be an important area of research, and computers that can perceive, act, and learn on the basis of their experience may be in a position to form representations which are

causally connected with the external world so as to render them meaningful to the system (Clark, 1997, 2001; Sterelny, 2003).

Structured, meaningful representations are not yet enough to posit in order to mark off systems with propositional attitudes. To further constrain the class of systems with propositional attitudes I appeal to the notion of *decoupled representations* (Sterelny, 2003). Having decoupled representations is a further necessary criterion for having propositional attitudes, and importantly, having decoupled representations is not dependent on having language. Decoupled representations are representations that are neither stimulus-bound nor response-entailing; they track aspects of the external environment, but do not have the (biological) function of directing specific behaviors.²² Having representations that are decoupled from responses endows an agent with a flexibility of behavior and sensitivity to contextual information that is lacking in systems without internal representations, or with internal representations that are hard-wired to their responses. Whether or not a system has decoupled representations may not be immediately evident, but it is something that is in principle determinable. For example, the complex behavior of the Sphex wasp might make it seem like a good candidate for having decoupled representations, but by perturbing the environment relevant to its behavior, and noting the inflexibility of the wasp's behavior in the face of the changing conditions, we can determine that the representations driving those behaviors are not decoupled (Dennett, 1984). It is only to systems with decoupled representations that we can ascribe propositional attitudes

²² Sterelny restricts his discussion of decoupled representations to evolved biological systems, and relies upon a notion of biological function introduced by Millikan (Millikan, 1984). However, I see no *prima facie* reason to think that in principle no nonbiological system could have propositional attitudes; it is clear that a different or expanded notion of proper function will be needed to account for such cases. I leave that for another time.

in more than an instrumentalist mode. This criterion further reduces the set of systems apt for propositional attitude attribution. Both single-celled organisms and thermostats are ruled out by this criterion, for in single-celled organisms the receptor-cell-signalling-locomotor cascade has evolved for finding food, and is not decoupled, and the thermostat is designed expressly for controlling temperature; the representation of ambient temperature does not enter flexibly into other thermostat behaviors. Whether or not the computer has decoupled representations is unclear; computers are typically not very flexible in the ways they use information, suggesting that currently computer representations are not decoupled, but embodied computers may one day form representations which are sufficiently autonomous to be considered decoupled, neither stimulus bound nor response-entailing. There is no apparent reason to deny that these computers might one day have beliefs, desires, hopes and fears.

What counts as a decoupled representation is perhaps not entirely well-defined. It remains to be seen whether there are instances of biological systems with decoupled representations that seem obviously to lack propositional attitudes. Significantly, however, concepts constitute one class of entity that fits the notion of a decoupled representation very well. At a minimum, systems with propositional attitudes have concepts, one class of (and possibly coextensive with) decoupled representations; tokening of concepts is part of the internal state referred to by propositional attitude attribution. It is worth noting that Sterelny's characterization of decoupled representations makes no reference to language, and the identification of concepts as a kind of decoupled representation begins to indicate a framework in which concepts can be seen to be nonlinguistic entities. As I understand it, according to

Fodor's LOT hypothesis, many words in the LOT are supposed to be decoupled, but for a representation to be decoupled one need make no claims about whether that representation is language-like, image-like, or something entirely different. Decoupling refers to the role a representation plays in a system, and not the nature or structure of the representation itself.

I raise a major problem with the notion of a decoupled representation that will have occurred to the attentive reader. That is, if we are fundamentally physical, deterministic systems, then what causes the tokening of a particular representation at a given time is purely a factor of our preceding physical states (which includes other representations tokened) and environmental impingements. If every tokening of a representation is just the result of causal necessity, what sense can be made of a representation being decoupled? It might be argued that there is no real difference between a stimulus-bound representation and one which we picturesquely say is decoupled, or under endogenous control, since both are just effects of a causal chain, and the length or complexity of the chain does not alter this fundamental fact. This is a worry, yet I think a principled answer must be available to shore up the equally intuitive notion that between these two representational states there is a difference worth marking.

I think it is the length and complexity of the causal chain to which we must look for an answer, and that the answer will come in degrees: a representation may be more or less stimulus bound, and less or more decoupled. The calculus might look something like this. Identify a representation (how to do this is anyone's guess, but we are proceeding under the realist assumption that there is an internal representation, or a representational state, that is nomologically connected to an

object or objects in the world such that it can be said to be a representation of that thing or those things, and that we can individuate it from all the rest of the stuff going on in the brain). Of that representation we map out the following:

On the stimulus (causal) side: What factors contribute to (vary counterfactually with) the tokening of that representation, purely external ones or internal ones also? If there are internal ones, do any of them play the role of representations? How many other combinations of internal and external factors would lead to the tokening of that representation?

On the effect (response) side: Does tokening of this representation lead directly to a single action, or does it combine widely with other representations and contextual factors to play a role in causing a wide variety of actions? The further removed the tokening of a representation is from that object which it represents, the greater the number of internal causal factors that contribute to the tokening of a representation, and the greater the number of actions it could potentially lead to, the more “decoupled” that representation is.

One might wonder whether we are in any better a position to determine whether a system has decoupled representations than are to determine whether it instantiates a language of thought by looking at the brain. I believe that we are. Determining whether something instantiates a LOT requires individuating representations, and to do this we must be able to identify representations in their entirety. According to the LOT, representations are individuated by their form, and a slight variation in the form of a representation may be an entirely different representation. Needless to say, neuroscience has no idea of how to individuate entire representations. What neuroscience can do is identify some parts of a representation (neurons which reliably fire in the course of performing a particular task), it can test hypotheses about what the representation is a representation of, and it can see whether those same parts are active whenever that representation is used, in circumstances in which the representation is stimulus-bound, and in circumstances in which it isn't. In addition, our basic knowledge of neural processing pathways

gives us a rough idea of how close to the periphery or to the execution of action a representation is; the closer it is to either, the more likely that it is stimulus-bound or response-entailing.

Ultimately, to be absolutely certain about decoupled representations we would want to have a grip on the entire representation. However, even with partial information we could make informed bets, whereas partial information about a representation doesn't enable one to tell much about whether it functions as a word or sentence in the LOT. We know already from building simple computational systems that something can have a LOT without having decoupled representations. However, it may be the case that all systems with decoupled representations are systems which have discrete representational elements which combine to form complex meaningful representations according to generative rules; that they are productive, that they obey systematicity, etc. In other words, it may be that all decoupled representations are also representations in a LOT. This is an empirical question. Nonetheless, when reverse-engineering a system it is easier to decide whether it has decoupled representations than it is to decide whether it instantiates an LOT. Thus, in terms of being a useful criterion for propositional attitude attribution, decoupled representations are superior to the LOT hypothesis.

This view of what it takes to be decoupled allows for degrees of decoupling, and it might be asked whether this results in the uncomfortable position of having to admit of having degrees of propositional attitude (not just variations in the number or complexity of beliefs, but variation in the degree to which something is a belief). That would be one way to go, certainly: we could say that my dog has representational states that are almost as belief-like as mine, but still fall short of

hitting the mark. However, it is difficult to reconcile this picture with the functional role that propositional attitudes are supposed to play in generating and explaining behavior. Does an almost-propositional-attitude play a lesser explanatory role in our folk theory? Do almost-beliefs combine with almost-desires to generate almost-actions? To avoid this outcome, we might instead hold that there is a decoupling threshold that must be reached in order for a representation to be a part of a propositional attitude. We would then owe an account of what that threshold is, and why it marks off representations with belief content, for example, from non-belief-like representations. These difficulties may prompt us to look elsewhere for a means of marking off believers from nonbelievers, and thus I offer a final, albeit problematic, criterion.

The final criterion I'd like to suggest is most troubling, and I cannot give an adequate characterization of what it amounts to. I have argued that necessary conditions for having propositional attitudes include having structured, decoupled representations, and that concepts satisfy these criteria. However, as I noted in earlier chapters, concepts are widely held to be "employed in thought" by the thinker; they are available at the level of the organism. Here all I can do is point to "availability to the system" as a further criterion that might be applied. Whether this will end up being a constraint upon the functional organization, the complexity, or the architecture of a system, or a requirement of consciousness, or even a claim about self-knowledge (access to one's own thoughts, not self-consciousness), I cannot now say.

The foregoing was a brief characterization of the *internal* requirements on a system with propositional attitudes. The form that these internal representations will take is an open, and I take it, an empirical, question. What other criteria can we bring to bear?

As Dennett and Davidson show us, external criteria can be fruitfully brought to bear on this question. Dennett's work demonstrates that behavior, writ large, fits too easily into the framework of folk psychology to be useful in determining which systems have propositional attitudes (although absence of behavior that can be so interpreted is certainly good reason to deny a creature propositional attitudes). However, the capacity for certain *types* of behavior can be good evidence for the presence of decoupled representations, and thus, indirectly, for propositional attitudes. In particular, two types of capacities stand out as particularly salient: the ability to plan, and the ability to communicate. While neither strikes me as necessary for propositional attitude attribution, both seem to be good indications that the cognitive complexity required for propositional attitudes is in place.

The ability to plan entails an ability to represent a goal state, and involves the ability to form representations in the absence of eliciting stimuli. Because the sequence of actions required in planning are temporally distant from the goal state, and because plans are typically context-sensitive, planning is indicative of decoupled representations. The strategic stalking of prey, and the forward-thinking circling behavior of herding dogs are two illustrations of this ability in the animal world. Neither requires spoken language.

There are other examples of actions which are more like problem-solving than planning, but also require detached representations, since the actions required

to achieve the goal state are not the ones that are most straightforwardly elicited in that context. That is, achieving the goal requires active inhibition of a prepotent response. For example, crows can fashion tools to enable them to hook a food item that is too far down a hole for them to grab with their beaks; if faced with a piece of food hanging from a string, they can figure out to pull the string up in steps, rather than flying at the food. Octupi, if given a glass jar with a fish in it, quickly determine that they cannot get at the fish through the glass, following the line of sight. They solve this difficult problem, holding the jar and twisting the lid to remove it, successfully reaching the fish. All these behaviors are evidence of flexible cognitive processing using decoupled representations. In other cases, like the SpheX wasp mentioned earlier, what look like planning behaviors turn out, on investigation, not to be.

The ability to communicate may also be a reliable sign that an organism has the requisite cognitive complexity to have propositional attitudes. For example, vervet monkeys can signal to other vervets if there is a predator in the area, with different calls specialized for snakes, cats, and eagles. The fact that they make appropriate calls, and respond differentially to the calls, with actions appropriate for each type of predator, suggests that they possess decoupled representations. For example, the representation of the predator is decoupled from the presence of the predator, which suggests that the representation mediating their behavior is conceptual. Of course, it is possible that the response of the monkeys is hardwired to the auditory features of the call, but this is implausible since it has been shown that the differential responses to these calls are learned, not innate. In addition, macaque monkeys call to alert others when they find food, and their calls are somewhat food-

specific. They are occasionally known to use calls in a deceptive manner, and if deception is detected by the group, they are punished. This suggests that these calls perform a socially-recognized communicative function (Hauser, 1992).

Now for a personal anecdote: my dog Enzo communicates a range of things to me. One of the most striking is that he “sings” for his supper. Regardless of the context, the place, the people, etc., in the early evening he approaches me and complains, first quietly, then loudly, if I forget to give him his dinner. That may be driven by mere hunger. However, he continues to complain loudly if what I give him does not include a more palatable foodstuff than plain kibble. He never acts this way if I remember to give him his special food without prompting. He is immediately satisfied by my adding something to his food, but complains persistently if I only pretend to. He continues to complain until I put something unusual and tasty in his bowl, or until I make clear that nothing more is coming. He clearly has a representation of what is in his food bowl, whether it be nothing, plain kibble, or kibble with something extra. It is also clear that he wants, even expects, something finer than plain kibble for dinner, and will not be satisfied until the world complies with his goal state, or until he determines that his singing will come to naught. The way he noses around in the bowl in expectation of the finer stuff is unmistakable, and his unwillingness to eat the kibble when he determines that it is plain displays his disdain for it. Interestingly, once there is even a little bit of good stuff in the bowl, he happily eats the whole bowl of food, suggesting that there is a condition he recognizes as being met. It is significant, also, that the desired object is not in his proximate sensory surroundings: it is not special food, or even food at all, triggering a reflexive response. Enzo sings in a wide variety of circumstances, at home, on the

road, etc., although only at a time that is plausibly dinner time. My hunch is that Enzo has some concept of what he wants or expects (or is entitled to?) for dinner, a representation which is not controlled by external stimuli, but under his own control. Of course, more evidence that his representation is decoupled would be welcome: could he use that representation for purposes other than urging me to feed him? Would his desire for special food manifest itself differently to different people, if they responded differently to him? I have as yet no answer to this question.

Enzo doesn't have language, and neither do monkeys. The ability to communicate is not a linguistic ability. There is no sense in which these animals have language: their vocalizations are not productive or systematic, for instance. Nonetheless, communication requires symbolic ability. It may be that having symbolic abilities may be required of any system that is a candidate for propositional attitudes, but this leaves a large class of nonlinguistic animals in the running. If these symbolic abilities are displayed in communication, we can relatively easily determine that a system has them.

So far I have claimed that decoupled representations are necessary for propositional attitudes, and have suggested that the planning and communicative behavior of nonlinguistic animals is good evidence for these representations. However, I want to stress that neither of these behaviors is necessary for the presence of decoupled representations. Communication isn't required, as long as the system has evolved decoupled representations in response to other pressures. Octopi, for example, are solitary creatures, and so it is unlikely that they have had enough social interaction to develop communicative strategies. Nonetheless, they display remarkably flexible problem-solving skills. They development of a capacity

for decoupled representations, was probably driven by other complex demands of their evolutionary environment.²³ The close link between communication and decoupled representations is probably a function of the evolutionary pressures on social species: those that developed more sophisticated means of communication and coordination with others of the species were probably more evolutionary successful than their less communicative brethren; insofar as decoupled representations subserve communication, these pressures therefore drove the evolution of the flexible cognitive capacities necessary for decoupled representation.

We can see here links with the external approaches of Dennett and Davidson. It is behavior that provides us with defeasible evidence for the internal complexity of a system. Indeed, apart from the fragmentary but fascinating window provided on the neural bases of representation by modern neuroscience, behavior is the only way we have of assessing the cognitive capacities of a system.²⁴ Dennett erred in thinking that behavior provided the necessary and sufficient conditions for propositional attitudes – it provides neither. However, both he and Davidson were correct in thinking that behavior was important evidence to lean on in determinations of propositional attitudes. Davidson erred in thinking that language-based communication was a necessary condition and the evidential criterion for having propositional attitudes. He would have gotten closer to the truth had he asserted that communication, not language, was essential. However, even then he

²³ It is of course possible that octopi evolved from other animals that were more social, and that the communicative abilities of their ancestors resulted in brains with certain complex representational abilities. I know of no research that speaks to this question.

²⁴ And neuroscientific investigation of representations is invariably linked to behavior. Correlating neural activity to behavior is essential to identifying the content of neural representations.

would have been wrong, for communication is not the only potential driving force behind decoupled representations; other complex problem domains may suffice. In general, however, social interaction places complex enough demands on a system that it could drive the evolution of decoupled representations, so were we to place bets upon which creatures had such representational abilities, we would be wise to place them on social over solitary species. However, in contrast to what Dennett and Davidson believe, there is no behavioral criterion for thought: behavior tells us where in the world of complex systems it would be smart to look for propositional attitudes, but ultimately it is the representational abilities of a system that determines whether or not it can think.

I wish to close by reiterating that my goal here has been to show that nonlinguistic creatures can have propositional attitudes, and that the requirements for propositional attitudes involve neither language, nor, on the face of it, a LOT, conceived of in the Fodorian sense. I have argued that in order to have propositional attitudes, animals must have concepts, mental representations that are neither stimulus bound nor response-entailing. The concepts must be combinable to form structured representations that serve to represent actual or possible states of affairs. That, and an appropriate attitudinal component, is sufficient for an animal to have propositional attitudes. Whether these requirements themselves entail that a system instantiate a LOT, in the Fodorian sense, is an open question.

By maintaining that nonlinguistic animals have propositional attitudes, I merely underline an important continuity between language-using and nonlanguage-using species. I leave open the question of what the range of propositional attitudes

is that nonlinguistic creatures can enjoy. It is reasonable to think that the range of decoupled representations a nonlinguistic animal can have is limited, and thus that the range of propositions they can represent is similarly limited. Somewhat abstract properties such as 'kind to strangers' may be beyond their ken, and many inferential transitions may be unavailable to them (see Bermúdez, 2003, chapters 7-9).

Bermúdez (2003) has begun a detailed analysis of the limits of nonlinguistic representation; further pursuit of this issue is a worthwhile and challenging project.

Regardless of what the limitations on propositional representation are, it is clear that many nonhuman animals can form a range of beliefs, desires, and expectations about the world.

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