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The Scope of the Conceptual

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Concepts are among the most fundamental constructs in cognitive science. Nonetheless, the question “*What is a concept?*” is a notoriously thorny one. In both philosophy and cognitive science, theorists disagree about what concepts are, what types of phenomena they explain, and even about whether or not concepts exist. The complexity of this issue is exacerbated by the fact that it encompasses a number of ongoing disputes. One is about the metaphysics of concepts, or the question of what sort of entity a concept is. Some theorists take concepts to be meaningful mental representations that combine to form whole thoughts (Fodor, 1998; Margolis & Laurence, 2007), while others take concepts to be the meanings themselves, understood as abstract entities that compose to form the propositional contents that thoughts have or express (Peacocke, 1992; Zalta, 2001). A different dispute concerns the structure of lexical concepts (i.e., concepts that correspond to words). Lexical concepts are variously taken to have definitional structure, prototype structure, exemplar structure, theory structure, no structure at all, or some more complex combination of these options (for reviews, see Laurence & Margolis, 1999; Murphy, 2002). A third dispute—the one we will focus on in this chapter—concerns what we will refer to as *the scope of the conceptual*. Assuming that not all representations or meanings are on a par and that not all deserve to be designated as concepts, the question arises as to how the conceptual/nonconceptual distinction should be drawn. As we will see, many different answers have been given to this question. This chapter will provide a critical overview of the main arguments that have guided recent philosophical thinking on these matters.

¹ This chapter was fully collaborative; the order of the authors’ names is arbitrary.

1. Preliminaries

Before we turn to the arguments that will be the focus of our discussion, we should emphasize that there really is no consensus on how to draw the conceptual/nonconceptual distinction or even on the factors that go into deciding how to draw it. And while debates about the conceptual/nonconceptual distinction have generated many interesting and productive ideas, major disagreements in the literature have led different theorists to use the terms “conceptual” and “nonconceptual” in different ways, sometimes talking at cross-purposes and often leaving the meanings of these crucial terms implicit in their discussions. All of these factors have meant that the large philosophical literature on this topic can be confusing for the uninitiated. For this reason, we think it is especially important to begin with a brief discussion of how we propose to frame the dispute.

One ground rule is that we wish to be initially neutral about whether there is even an important distinction to be made here. Different classes of mental states, for example, differ in many ways. But we shouldn’t assume that they should be divided into conceptual v. nonconceptual states—that is, we shouldn’t just assume that there is any distinction between these various states that is fundamental enough to warrant singling out some as conceptual and others as nonconceptual. In much the same spirit, we should also not assume that there is only one fundamentally important distinction to be made. We should be open to the possibility that there may be more than one type of fundamental distinction that needs to be drawn and that the field should adopt a richer nomenclature than a simple conceptual/nonconceptual split to keep track of these various distinctions.

Another matter that shouldn’t be prejudged is whether the conceptual/nonconceptual distinction is about different types of *content* (or meaning) or about different types of representational *states* (Stalnaker, 1998). Debates about the conceptual/nonconceptual distinction are often described as debates about the status of so-called *nonconceptual content* (the implicit assumption being that if there is an important distinction to be made, it has to do with there being two different types of content that mental states can have). But a content-based division isn’t mandatory. Mental states may well divide into two fundamentally different categories without doing

so in virtue of possessing two fundamentally different types of content. Different propositional attitudes (e.g., intentions v. beliefs) are distinguished by differing functional roles, for example, and not by differing types of content.

Since not all differences among mental states are differences of content, but content differences between mental states can be taken as a special kind of state difference, we will adopt the neutral and inclusive terminology that contrasts *conceptual states* with *nonconceptual states*.² On the natural assumption that mental states exist and are the bearers of conceptual and (possibly) nonconceptual content, this way of talking should be harmless enough. Having adopted this terminological convention, we will allow ourselves to move freely from arguments and positions that have been characterized in the literature in terms of nonconceptual *content* to arguments and positions that are characterized in terms of nonconceptual *states*.

Now as we've noted, there aren't many things that all philosophers in these debates agree upon. But one point of consensus is that the constituents of the representations or contents that are involved in paradigmatic belief states should count as concepts. Paradigmatic belief states include the consciously held beliefs of typical adults (typical in the sense that these adults haven't suffered brain damage or abnormalities resulting in cognitive or linguistic impairments). When a typical adult consciously thinks to herself that the left front tire on her car needs air, the components involved in the thought (LEFT, FRONT, TIRE, etc.) are among the things we should take to be concepts.³ Outside of paradigmatic cases like this are the border disputes regarding the scope of the conceptual. Our discussion will focus on two such border disputes. One is about the scope of the conceptual within the human mind:

Are all representational mental states of adult humans composed of concepts, or are some types of representational mental states (esp. perceptual states) nonconceptual?

² This is in lieu of the rather more cumbersome *conceptual states or contents* v. *nonconceptual states or contents*.

³ We adopt the convention of referring to conceptual and nonconceptual states using expressions in smallcaps.

The second is about the scope of the conceptual across different kinds of minds:

Are concepts unique to (normal) adults or do animals and prelinguistic children have concepts as well?

The most direct way to approach these questions would be to start with a firm criterion for what makes a state conceptual or nonconceptual and then consider arguments that purport to establish which types of states fall under which designation and which organisms are the bearers of these states. However, as we have noted, the criteria for what makes a state conceptual or nonconceptual are often only implicit in discussions, and there is no single criterion that is widely agreed upon. Given this, and given the fact that it is the *arguments* for a conceptual/nonconceptual distinction that really drive these disputes, it may be more productive to work backwards, relying on the arguments and using these to illuminate various proposals regarding the nature of the distinction. In any event, this is how we will proceed. We won't be able to cover all of the important arguments that have been put forward or to go into any one argument in much detail. Our primary objective is to give readers an overall sense of the debate and to illustrate that, in many respects, it remains inconclusive.

With these preliminaries out of the way, we will now turn to the arguments that bear on the conceptual/nonconceptual distinction, beginning with arguments that are directed to potentially important differences between perceptual states and belief states.

2. Which Kinds of Mental States are Conceptual?

In this section, we look at the scope of the conceptual as it pertains to adult human beings. Advocates of nonconceptual states argue that perceptual states can't always be assimilated to paradigmatic concept-involving states, such as beliefs, while critics of nonconceptual states contend that they can. We will review five of the most influential arguments that purport to show that some perceptual states are nonconceptual.⁴ In

⁴ While the debate has largely focused on the question of whether perceptual states are nonconceptual and what this might mean, similar issues arise for other types of mental states, particularly those that have their home in modular processes that are inaccessible to conscious thought (Bermudez, 2008).

addition to considering the question of how good these arguments are, we will also examine the (often implicit) conceptual/nonconceptual distinction that the arguments turn on.

Argument 1: Cross-species Continuity

The argument from cross-species continuity begins with the supposition that animals can share our perceptual experiences even though they lack the concepts that figure in our beliefs about these experiences and in related beliefs. If this is so, then the concepts aren't themselves required for having the experiences (Dretske, 1995; Peacocke 2001). For example, a dog seeing a mobile phone may be supposed to have a visual experience similar to the one that an ordinary person has when seeing the phone, but it's doubtful that dogs have the concept MOBILE PHONE. Similarly, a bird hearing a guitar may have a similar auditory experience to the one that a human observer would have in the same situation, but birds don't have the concept GUITAR. Supposing this is right, then the concepts MOBILE PHONE and GUITAR aren't necessary for having these experiences. The concepts are required for our having *beliefs* about mobile phones and guitars (e.g., the belief *that someone is talking on a mobile phone* or *that someone is playing a guitar*) but not for the perceptual states that underlie our experiences of these things.

This argument builds on two fairly intuitive claims. One is that animals and humans have relevantly similar perceptual experiences; the other is that animals lack the concepts in question. Of course, it is well known that different species have distinct species-specific perceptual capacities. Dogs can hear frequencies above the normal range of human hearing, bees can see light in the ultraviolet range, sea turtles can sense the Earth's magnetic field, etc. (Hughes, 1999). Nonetheless, all that is needed for the argument is the claim that, at least in some cases, animals that lack the required concepts have relevantly similar perceptual experiences to human beings. This seems plausible enough.⁵ Similarly, given sufficiently sophisticated concepts, such as MOBILE PHONE, the

⁵ From a more critical perspective, one might wonder whether animals have any experiences at all or whether they have different experiences even where they have very similar perceptual capacities as human beings. But such skeptical worries are entirely general in that they apply to other human beings too (e.g., you can wonder whether anyone has the same experiences as you do). General forms of skepticism needn't concern us here.

claim that animals lack these concepts shouldn't be especially controversial.

Does the argument from cross-species continuity establish that perceptual states are nonconceptual? It may seem somewhat surprising, but the answer is *no*. The most that argument shows is that concepts like MOBILE PHONE are not part of these perceptual states (the ones we share with animals), not that these perceptual states are free of concepts altogether. It might be that the perceptual states are composed of simpler concepts, for example, concepts more like SILVER, SHINY, RECTANGULAR, and so on. For all this argument says, there is no reason to suppose that animals that share our perceptual states lack *these* concepts, or that the shared perceptual states aren't composed of such concepts.⁶ This objection illustrates a difficulty that is common to other arguments for nonconceptual states and that amounts to a tempting yet mistaken form of reasoning. We call it the *conceptualization-reconceptualization fallacy*. The fallacy is to suppose that when conceptualization occurs given a prior representational state that the prior state isn't itself conceptual. The reason that this is a fallacy is that the prior state might also be conceptual, so that the conceptualization involved needn't be based on an unconceptualized state, but might instead be a matter of reconceptualization, that is, a move from one type of conceptualized representation to a different conceptualization. In the argument from cross-species continuity, it's assumed that when an adult goes from her perceptual state to the belief that she is seeing a mobile phone, her perceptual state isn't itself conceptual. But the fact that the belief state involves certain concepts not involved in the perception doesn't show that the perceptual state doesn't involve other concepts. Because of the conceptualization-reconceptualization fallacy, the argument from cross-species continuity fails to establish that there are nonconceptual states.

There remains the question of what conception of the conceptual/nonconceptual distinction might be at work in this argument. It is worth noting that nothing in the argument suggests that there must be a special type of content (nonconceptual content) in virtue of which we can distinguish perceptual from conceptual states. A different idea, suggested by a number of philosophers, is that what makes perceptual states nonconceptual is that they involve content "that can be ascribed to a thinker even though

⁶ We discuss the broader worry that animals may not have any concepts at all in section 3 below.

that thinker does not possess the concepts required to specify that content” (Bermudez, 1998, p. 49).⁷ Arguably, this is the conception of the nonconceptual that is at work in the argument from cross-species continuity. Unfortunately, this conception of the nonconceptual isn’t very helpful. Since it only specifies the nonconceptual relative to an unexplained reference to the conceptual, it doesn’t really spell out what it is to be nonconceptual. Rather, this conception seems to depend on some prior conception of the conceptual/nonconceptual distinction.

Argument 2: Fineness of grain

The fineness of grain argument turns on the claim that perceptual states support discriminative capacities that are considerably more fine-grained than our inventory of concepts (see, e.g., Evans, 1982; Peacocke, 1992; Tye 1995; Heck, 2000). For example, we are able to visually discriminate millions of different shades of color, but the number of color concepts is claimed to be far smaller. Sometimes natural language is used to give an approximate estimate on the number of color concepts. If we use English as our guide, the number of basic color terms (“red”, “green”, etc.) is about eleven. Even if we add in more esoteric terms, including those that rely on compound expressions (e.g., “lime green”), the number of color terms is orders of magnitude lower than the number of discriminable colors. When we believe that apples are red or that the sky is blue, arguably we are using representations which impose a conceptualization on the multitude of fine-grained representations employed in visual perception.

Whether this observation tells us that perceptual states are nonconceptual, though, is another matter. It would seem that what we have here is another instance of the conceptualization-reconceptualization fallacy. Just because the belief state allows us to conceptualize a given perceptual experience doesn’t mean that the states that are involved in the experiences aren’t conceptual too. Perhaps the perceptual states just draw upon *different* concepts. So at the very least it isn’t clear that the fineness of grain argument

⁷ This conception of the nonconceptual broadly corresponds to what Alex Byrne (2005) calls *state conceptualism* and Jeff Speaks (2005) calls *relative nonconceptual content*. Byrne and Speaks both distinguish something like this conception from one that is supposed to introduce a genuinely new and distinctive type of content (*content conceptualism* or *absolute nonconceptual content*). Interestingly, both argue that the various different arguments for nonconceptual content cannot be seen as all arguing for the same type of nonconceptual content (state v. content or absolute v. relative).

shows that perceptual states should be deemed nonconceptual.

To get past this objection, the argument needs to be filled out with a substantial conception of the conceptual/nonconceptual distinction. One important suggestion along these lines comes from John McDowell (who is a *critic* of the fineness of grain argument, not an advocate). For McDowell, the main issue has to do with the way that a state is integrated with paradigmatic concept-involving states. “[I]t is essential to conceptual capacities ... that they can be exploited in active thinking, thinking that is open to reflection about its own rational credentials” (McDowell, 1994, p. 47). Explaining precisely what McDowell’s view amounts to is complicated enough to demand a chapter all by itself. But suppose that the representations involved in paradigmatic concept-involving states are indeed open to the sort of reflection he describes. The question then becomes whether the same thing can be said for perceptual states. In order for this to be the case, McDowell requires that the capacities that endow perceptual experiences with their contents “must also be able to be exercised in judgments, and that requires them to be rationally linked into a whole system of concepts and conceptions within which their possessor engages in a continuing activity of adjusting her thinking to experience” (McDowell, 1994, p. 47). He agrees that we do not have ready-made concepts like GREEN and PURPLE for each of the many shades of colors we can experience but argues that the contents of these experiences can be expressed conceptually all the same and that this indicates that they are suitably integrated with the conceptual realm (McDowell, 1994, pp. 56-7):

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.

There are many questions one might raise about this picture of experiences, but we’ll confine ourselves to the question of whether McDowell is right that his demonstrative concepts (THAT SHADE) can be as fine-grained as perceptual experiences.

Sean Kelly (2001) argues that they are not, based on considerations that pertain to the context-sensitivity of perceptual experience. Kelly notes that an object with uniform color can be experienced differently under different conditions. For example, a uniformly white wall will look different in places where the wall is in shadow than in places where it is illuminated by direct sunlight. The problem for McDowell's claim is that the concepts associated with the different experiences (THIS COLOR and THAT COLOR) would pick out the very same property and hence should make exactly the same contribution to experience. But then they could not explain the experiential difference associated with seeing the same color under different lighting conditions. As Kelly puts it, "the phrase 'that color' is unable to distinguish between that color as presented in the sun and that same color as presented in the shade. Because the relevant [experiential] difference is not a difference in color, no color term could make such a distinction" (Kelly, 2001, p. 607).

McDowell's suggestion regarding the conceptual/nonconceptual distinction isn't the only one that proponents of the fineness of grain argument may wish draw upon. Starting with the same considerations we began with—the huge number of discriminable colors—Michael Tye remarks that, "human memory isn't up to the task of storing a different schema for each of these different shades" (Tye, 1995, p. 66). And even if it were, the point remains that for most observers, the specific shades that they are capable of teasing apart don't correspond to stored color schema.⁸ Part of what Tye has in mind seems to be that concepts are stored, reusable mental representations. This is not enough, however, as there is a sense in which even the most fine-grained perceptual representations are stored and reusable as well. After all, our perceptual experiences have a representational basis, and that basis can be reactivated given the same overall external conditions. What seems to distinguish concepts for Tye is that we can *reliably use these stored representations for purposes of reidentification*. "I cannot see something as red₂₉ [a maximally determinate shade of red] or recognize that specific shade as such; if I go into a paint store and look at a chart of reds, I cannot pick out red₂₉" (Tye, 1995, p.

⁸ There is a sense in which we can think about fine-grained differences of color, viz., by introducing the somewhat technical terms "red₂₇", "red₂₈", etc. But the point remains that we have no concepts that correspond to these distinctions that can be directly and reliably applied to our experiences in the context of making perceptual identifications.

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One question we should ask about Tye's criterion is whether it is significant enough to warrant a distinction between the conceptual and the nonconceptual. Is fine-grainedness versus coarse-grainedness really a *fundamental* division amongst representations? Perhaps we can simply acknowledge that some concepts are more fine-grained than others, and leave it at that. Just as important is the question of how close the link is between coarse-grained representation and reidentifiability and between fine-grained representation and the lack of it. Certainly it seems as though coarse-grained representations can also fail with respect to reidentifiability. Indeed, it is arguable that concepts like RED fail the reidentification criterion depending on the environmental circumstances. Employing a variant on Kelly's argument, we might note that the same color looks different depending on the surrounding colors—a phenomenon known as *color contrast*. For example, given the choice of the labels "red" and "purple", the same colored circle may be deemed "purple" against a red background and "red" against a purple background.⁹ So RED and PURPLE raise their own re-identification problem, even though they are coarse-grained and are supposed to be clear candidates for falling on the concept side of the conceptual/nonconceptual divide.

Stepping back from the difficulties associated with McDowell's and Tye's views, we can see that there is no single way of drawing the conceptual/nonconceptual distinction that is at stake in the fineness of grain argument. McDowell draws the distinction in terms of a certain type of integration with paradigmatically conceptual states. Tye, on the other hand, draws the distinction in terms of stored representations which can reliably be used for purposes of reidentification. And interestingly, both of these ways of drawing the conceptual/nonconceptual distinction appear to differ from the ways of drawing the distinction that we encountered earlier (i.e., taking conceptual and nonconceptual states to involve fundamentally different types of content, or to be a matter of states that are attributable in the absence of conceptual representations).

Argument 3. The Richness of Experience

The *richness of experience argument* is based on a phenomenon that is closely related to

⁹ For an example, see <<http://web.me.com/ericmargolis/Supplement/scope.html>>.

the one that is at issue in the fineness of grain argument, and the two arguments are often used in conjunction with one another. The richness of experience argument focuses on the fact that perceptual states manage to take in an enormous amount of detail (see, e.g., Dretske 1981; DeBellis, 1995; Carruthers, 2000; Peacocke, 2001). Imagine walking down a city street. You might see dozens of people bustling about, the buildings in the background, the cars parked on the side of the road, the blinking lights, the billboards, etc. The point is that the visual experience seems to simultaneously incorporate all of the determinate colors, shapes, textures, positions (etc.) of these things, in stark contrast with the belief that you are walking down a bustling street, which abstracts from all of these details. Proponents of the argument suggest that perceptual states are so detailed that their content must exceed the resources of conceptual system. The radical disparity between perceptual representations and paradigmatic concept-involving states in this respect is thought to argue for their being of fundamentally different kinds—perceptual states are *nonconceptual*.

One way to develop and refine the argument is to consider in more detail what how the perceptual states differ from paradigmatic conceptual states. Christopher Peacocke, for example, has argued that the content that such perceptual states have is different in kind than the type of content associated with belief states. Peacocke introduces the idea of *scenario content* in characterizing the content associated with perceptual states. According to Peacocke (1992) such perceptual states have *scenario content*, which specifies how the space around a perceiver is filled in from a particular perspective. Scenario contents are given in terms of a representation of a filled space from a perceiver's perspective, where the space is represented as oriented around the perceiver by three spatial axes centered in a point of origin (e.g., in the perceiver's chest or head). For each point in the space, which is a certain distance and direction from the origin determined by the axes of orientation, the representation will specify "whether there is a surface there, and if so, what texture, hue, saturation, and brightness it has at that point, together with its degree of solidity" (1992, 63). This gives the flavor of Peacocke's scenario contents, which he goes on to specify in greater detail.¹⁰ Notice that perceptual

¹⁰ We are simplifying Peacocke's account in a number of ways here, among them that Peacocke goes on to suggest that there are other forms of nonconceptual content apart from scenario content.

contents, on such an account, would differ from belief contents in terms of the semantic frames that underlie their composition. So perhaps we can say that while conceptual contents are associated with propositional semantic frames (e.g., a simple subject-predicate frame), nonconceptual contents are associated with non-propositional semantic frames such as those that scenario contents give us.¹¹

The emphasis on propositional versus non-propositional semantic frames gives us one way to draw the conceptual/nonconceptual distinction, but there are reasons to question whether perceptual states are really so different from beliefs in this regard. For example, Jeff Speaks (2005) suggests that perceptual states can still be characterized in terms of propositional contents. We just have to allow that the proposition will be complicated in ways that reflect the details given in perception. “If we think of the content of a given experience as a Russellian proposition, it will be a very complicated proposition indeed, which represents many objects as having a great many properties. But there is nothing implausible in the thought that the contents of perception are very complex” (Speaks 2005, p. 356). In examining the case of visual sensation, Mohan Matthen (2005) has also noted that while there are differences between visual sensations and clear-cut vehicles of propositional contents (e.g., sentences), visual sensations nonetheless have combinatorial structure that makes them suitable for expressing propositional contents. Moreover, he defends what he calls the *sensory classification thesis*, according to which sensations encode messages that particular individuals have various properties and are to be assigned to specific classes. None of this is to deny that perceptual experiences encompass more detail than beliefs. What remains in dispute, however, is whether this fact calls out for a new type of content—and with it a significant distinction between the conceptual and the nonconceptual—or whether the same type of content that works for beliefs is suitable for perceptual states as well.

Let’s turn now briefly to the question of what conception of the conceptual/nonconceptual distinction is at stake in the argument from richness of experience. Arguably, it is a version of one we mentioned earlier, namely, the idea that

¹¹ There is a great deal more that might be said about the possible relations between conceptual contents and scenario contents in terms of the types of semantic frames that they use, and this is related to further complications owing to the fact that not all theories of propositions take propositions to be structured. However, we lack the space to go into these issues further.

nonconceptual states differ from conceptual states in virtue of the fact that nonconceptual states possess a fundamentally different type of content. Earlier we argued that this conception is not the one at stake in the cross-species continuity argument. However, since scenario content is taken to be fundamentally unlike standard propositional content, and since it inherently specifies so much perceptual detail (filling in the space around a perceiver), this conception does seem to be a good fit for the richness of experience argument as we have interpreted it.

Argument 4: Contradictory Contents

The *argument from contradictory contents* turns on a specific perceptual phenomenon that has been studied by psychologists. The phenomenon, known as *the waterfall illusion* or *the motion aftereffect illusion*, occurs when you stare at a scene that contains motion in one direction and then shift your attention to a motionless object. The result is that the object appears to be moving in the opposite direction of the original motion and, at the same time, appears to remain still. Tim Crane (1988) has argued that this effect amounts to a visual experience that is inherently contradictory. Importantly, it's not that the object appears to move but that you know, contrary to appearances, that it isn't moving. Rather, both the movement and the lack of movement are intrinsic to the experience; the very same object *looks* as if it is moving and not moving.¹²

Crane goes on to argue that the waterfall illusion establishes the existence of nonconceptual states. His strategy is to specify a principle that concepts are supposed to adhere to but that apparently doesn't hold up in cases where the illusion occurs. Here is the principle (Crane, 1988, p. 144):

F and *G* are different concepts if it is possible for a subject to rationally judge, of an object *a*, that *a is F* and that *a is not-G*.

Crane's point is that, against the background of this view of concepts, motion aftereffect can't be a matter of how one employs the concept MOTION (or some related concept). If

¹² Examples of the illusion are available online. See, e.g.: www.michaelbach.de/ot/mot_adapt/index.html.

the state that underlies the illusion were conceptual, then there would be a prohibition on predicating of an object that it is in motion and not in motion. But the illusion seems to do just this. Crane is clearly motivated by the Fregean tradition in semantics. This tradition emphasizes that concepts should be individuated in a way that takes into account more than their referents in order to explain the varying cognitive significance of co-referential concepts. If all that mattered to conceptual identity were reference, then it would be a straightforward contradiction to think *that water quenches thirst* and at the same time to think *that H₂O does not quench thirst*. Instead, Fregeans distinguish these thoughts by claiming that their constituent concepts—WATER and H₂O—are themselves distinct. Though these concepts have the same referent, they present that referent in differing ways.¹³

What should we make of the argument from contradictory contents? We don't share Crane's sense about how the illusion that the argument relies on is best described. Our own sense is that in these experiences there is no single thing that appears to both move and not move. Rather objects appear to flow or expand or become distorted within their boundaries. In other words, the object as a whole remains stable but certain of its features appear to be in motion. On this way of looking at the matter, it's simply not true that the object appears to be moving and not moving in the same respect, and so there is no contradiction; it may well be that there are different distinct representations involved in representing the objects movement (within itself) and its lack of movement (as a unit). And if that is so, then the argument from contradictory contents does not give us reason to suppose that the perceptual representations fail to satisfy Crane's principle or that they are nonconceptual.

Crane is explicit about the principle he takes to mark the conceptual/nonconceptual divide. Nonetheless, there are questions about how his way of drawing the distinction maps on to the various characterizations we've already encountered. His explicit account

¹³ Fregeans take these modes of presentations to be, or to be part of, distinct senses, which are themselves abstract objects. However, it's worth noting that the basic constraint—that concepts that differ in terms of mode of presentation are distinct—can also be endorsed by theorists who reject the Fregean ontology and maintain that concepts are mental representations. The difference is that on the mental representation view, when two concepts have different modes of presentation, the modes of presentation are taken to be realized as properties of mental representations and consequently to be in the head (Fodor, 1998; Margolis & Laurence, 2007).

could be seen as aligned with several different versions of those that we've already encountered. For example, since the principle is closely tied to a Fregean conception of content, one might understand the division here in terms of fundamentally different types of content. Alternatively, one might see principle as showing that one can possess nonconceptual states in the absence of concepts (in accord with the second way of drawing the conceptual/nonconceptual distinction introduced in the discussion of the argument from cross-species continuity). Another alternative would be to see it in terms of an appropriate type of conceptual integration, along the lines suggested by McDowell above. However, it is also possible to see Crane's distinction as a new alternative, distinct from all the above suggestions.

Argument 5: Discursive vs. Iconic

In arguing that perceptual representations are nonconceptual Jerry Fodor offers several different ways of characterizing the conceptual/nonconceptual distinction that he takes to be more or less equivalent (Fodor, 2007, 2008). For example, he suggests that only conceptual representations involve *representing as* and thus only conceptual representations invariably distinguish between different ways of representing the same thing. He also suggests that that only conceptual representations impose principles of individuation on what they represent.¹⁴ But Fodor's primary characterization of the distinction is in terms of the contrast between what he calls *discursive* and *iconic* forms of representation. According to Fodor, the key difference between these two forms of representation concerns how a representation's various parts relate to the whole. Discursive representations are taken to have a canonical decomposition. This means that there is a correct way to subdivide a representation into its representational parts—not every way of dividing the representation into parts yields a division into parts that combine to produce the semantics of the whole. Natural language sentences are paradigmatic discursive representations. In “Sue put the book on the shelf”, some subdivisions constitute canonical parts of the sentence (e.g., “Sue”, “the book”, “on the

¹⁴ Fodor explicates this notion by remarking that while it makes sense to ask which things, or how many things, a representation with explicit quantifiers picks out, it doesn't make sense to ask the same question given a perceptual representational system that lacks this apparatus (Fodor, 2007, p. 110).

shelf”), however, other subdivisions do not (e.g., “Sue put the”, “book on”). In contrast, iconic representations for Fodor do not have canonical decompositions—any part of an iconic representation is on equal standing with any other part. For example, photographs, which are paradigmatic iconic representations for Fodor, can be cut into parts in any number of ways, and each part will depict a part of the scene that the photograph as a whole depicts. Here is Fodor’s principle governing the decomposition of iconic representations: “if P is a picture of X, the parts of P are pictures of parts of X” (2007, 108). Of course, the issue for us isn’t about sentences and photographs. But Fodor’s claim is that concept-involving states such as beliefs are discursive (like sentences), whereas perceptual states are iconic (like photographs) and hence nonconceptual.

We should note that it is by no means clear that Fodor’s different ways of characterizing the conceptual/nonconceptual distinction are equivalent. Consider, for example, a simple conventional system of representation that uses dots to represent individual people. In that case, the representation in figure 1 could be used to represent six people.

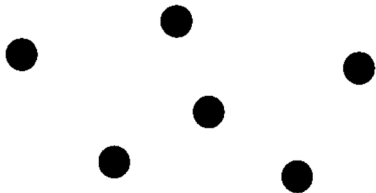


Figure 1. Representation-as without canonical decomposition.

Notice that this representation represents people as people (representation-as) and allows us to count the number of people represented (individuation). Nonetheless, the representation doesn’t have a canonical decomposition. The whole can be decomposed by grouping the dots any way you like or by treating them individually. However you do it, each part will represent part of what the whole represents. It is also unclear how the various ways of marking the conceptual/nonconceptual distinction that Fodor suggests

maps onto the candidates that we have encountered above. Arguably, Fodor's suggestions are each distinct from one another and from the other suggestions discussed above.

In any case, we'll focus on the core distinction that seems to matter most to Fodor, namely, the claim that conceptual representations contrast with perceptual representations in that only the former have canonical decompositions. Why think that perceptual representations are iconic in this way? Fodor's argument turns on his account of a familiar type of situation involving conceptualization. Imagine that you are engrossed in a project and a clock begins chiming in the background. After a few chimes, you might wonder what time it is and only then start to attend to the number of chimes. If you are quick enough, however, you might be able to count the chimes that you weren't initially paying attention to: 1-2-3-.... Fodor suggests that the likely psychological analysis of what's going on is that, in counting the chimes, you manage to conceptualize an iconic representation and that the reason you can count the chimes you weren't originally attending to is because the iconic representation is briefly held in a special memory system. "Within the critical interval you can conceptualize ... the chimes more or less at will. After that, the trace decays and you've lost your chance." (Fodor, 2008, p. 188).

Unfortunately, Fodor's argument falls afoul of the conceptualization-reconceptualization fallacy. Just because in counting the chimes one conceptualizes what one hears doesn't mean that auditory experience is itself devoid of concepts. It could still represent things in terms of its own set of concepts. In that case, it would be as discursive as the belief that follows it.

A second argument that Fodor gives for thinking that perceptual representations don't have canonical decompositions appeals to experiments by George Sperling (1960). Sperling's subjects saw three rows of letters simultaneously appear on a screen for a brief period followed by an auditory cue indicating which one of the rows to report (e.g., a high tone to signal the top row, a medium tone the middle row, etc). It turns out that under these conditions people can report all of the letters from any one of the rows even though they can't report all of the letters in the matrix and don't know in advance which row they will be queried about. Fodor suggests that, "it is the cost of conceptualizing information in this memory, rather than the number of items that the memory is able to

register, that bounds the subject's performance" (Fodor, 2007, p. 113). However, one might equally claim that it is the cost of *reconceptualizing* information that is already conceptual that bounds the subject's performance—another example of the conceptualization-reconceptualization fallacy. Fodor also remarks that "Sperling's 'partial report' effect is not found when the items to be recalled are cued by category ('Report the numbers but ignore the letters'). This strongly suggests that representation ... is indeed preconceptual" (Fodor, 2008, p. 189). This inference also commits the conceptualization-reconceptualization fallacy. At best, one can infer that the initial representation is not conceptualized *in terms of letters and numbers*, not that it is not conceptualized at all. Further, none of the considerations Fodor mentions provides any reason to believe that perceptual representations fail to have canonical decompositions or that every part of a perceptual representation is a representation of a part of what's represented.

Fodor's primary way of drawing the conceptual/nonconceptual distinction is also squarely at odds with Peacocke's characterization of perceptual representation, which we encountered in the discussion of the richness of experience argument. Consider Peacocke's scenario contents. One part of such a representation is the representation of the horizontal axis of orientation. This part, however, is not a representation of a part of the space that is represented. Likewise, consider a portion of the content corresponding to a portion of filled space but independent of the axes of orientation and the rest of the filled space. This portion does not represent any particular part of the space since the axes of orientation are required to locate the portion of the space represented. Peacocke's scenarios aren't iconic representations in Fodor's sense of this term. Much the same could be said regarding the Matthen's alternative conceptual account, which treats perceptual representations as discursive in Fodor's sense. The fundamental problem for Fodor, we suspect, is that he is working with an outdated conception of how visual perception works. There is no stage, not even an early stage, at which vision relies on representations that are akin to unanalyzed photographs (Matthen, 2005).

3. Who Has Concepts?

So far we have only looked at the issue of how to distinguish the conceptual from the nonconceptual within the minds of ordinary adult human beings. We now turn to the contrast between the minds of these paradigmatic concept users and beings whose status as concept users has been questioned, namely, animals and prelinguistic children. Much of the philosophical literature on this issue focuses on the claim that infants and animals lack genuine thought and isn't explicitly framed in terms of the claim that they have only nonconceptual states. In some cases what seems to be at stake is whether infants and animals represent the world at all, while in others it is whether they are confined to representing the world using mental states that are significantly different from the conceptually articulated states that adults enjoy. Given the ill-defined nature of nonconceptual states, we have no qualms in identifying the latter issue with the issue of whether the mental states of infants and animals are exclusively nonconceptual. In this section, we will review five influential arguments that philosophers have given to argue that they are and hence that infants and animals fall outside the scope of the conceptual. Again, in addition to considering the question of how good these arguments are, we will also examine the conceptions of the conceptual/nonconceptual distinction that the arguments seem to turn on.¹⁵

Argument 1: Limited to Current Perceptions

Michael Dummett (1993a, 1993b) argues that nonhuman animals are not capable of full-fledged conceptual thought but only a diminished form of thought, which he calls *proto-thought*. According to Dummett, animals are stuck in the here-and-now in that they are unable to detach themselves from their immediate perceived situation. The kind of thinking that this leaves them with is, at best, one in which they rely on “spatial images superimposed on [current] spatial perceptions” (Dummett, 1993b, p. 123). In contrast, because of their linguistic abilities, human beings can remove themselves from the moment and can rise above the confined world of perceptions. Dummett gives the example of a man walking home only to find himself arriving at the solution to a

¹⁵ Some of these arguments are directed to the claim that natural language is required for possessing beliefs and other propositional attitudes. But since the arguments are generally understood to apply equally to the claim that natural language is required for concepts, we'll often let claims about the requirements for belief possession stand in for claims about the requirement for concept possession.

mathematics problem that he had been working on earlier in the day. The man's immediate perceptions are of the road, the houses, etc., and have little to do with the solution that pops into his head.

One of the striking features of Dummett's discussion is that he offers absolutely no evidence to back up his views about what animals can and can't do. The impression he leaves is that his pronouncements are based entirely on casual personal observations. But it should go without saying that casual observations aren't to be trusted, partly because they are unsystematic and partly because they are likely to simply reflect the theorist's biases. And, perhaps unsurprisingly, the scientific study of animal psychology doesn't support Dummett's claims at all. Among other things, most animals represent abstract, nonperceptual information such as information about time, remember information from the past, and bring this to bear on decision making about activities like foraging (Gallistel, 1990). Many animals, including birds and fish, can also represent other abstract properties, such as the approximate number of entities in a collection (Brannon, 2005). Similarly, many species—even bees (Giurfa et al., 2001)—have abstract general representations of sameness and difference, which generalize both across and within sense modalities. Animals are also far more sophisticated than Dummett's remarks suggest in terms of the types of information processing that they are capable of. For example, recent work indicates that apes are capable of inferences by exclusion (Call 2006), elephants are capable of means-ends reasoning (Irie-Sugimoto et al. 2008) and that rats are capable of reasoning about causal constraints (Beckers et al. 2006). Even insects appear capable of very sophisticated cognitive processing. In evaluating potential new nest sites, for example, ants (*Temnothorax albipennis*) compute complex algorithms weighing a wide range of factors (including floor size, headroom, entrance size, darkness level, hygiene of cavity, and the proximity of hostile ant groups) (Franks et al. 2005). A particularly vivid example of animals planning beyond the here-and-now is provided by recent studies of Western Scrub Jays caching behavior (Raby et al., 2007). Each morning for six days they were alternately confined to one of two compartments, one of which had no food provided, while the other had food provided. Following this period, when the birds were given the opportunity during the evening to cache food in either of the two compartments, they cached significantly more food in the compartment where no food

had been available, showing that they had learned that this compartment would have no food in the morning and that they were planning in advance for this contingency.¹⁶

Dummett's way of marking the conceptual/nonconceptual distinction (or as he puts it, the distinction between genuine thought and proto-thought) does not obviously reduce to any of the previous conceptions we've considered. We have argued that his distinction can't do the work that Dummett wants it to do in providing a way of distinguishing humans from other animals; scientific studies of the sort that we have pointed to demonstrate that adult language using humans are not unique in satisfying Dummett's criteria for genuine thought. Nonetheless, the distinction might still be salvageable if we see it as distinguishing between humans plus a few nonhuman animals species on the one hand and other nonhuman animal species on the other hand. This could be a viable position in the end, but on the face of it, Dummett's way of drawing the conceptual/nonconceptual distinction isn't particularly promising even if we abandon the idea that humans are alone in possessing genuine thought. The problem is that the distinction fails to establish a natural way of dividing up species given that humans, elephants, rats, scrubjays, and honeybees all end up on the same side of the divide.

Argument 2: The Opacity Argument

Donald Davidson is perhaps the most famous among contemporary philosophers for denying that animals are capable of conceptual thought. It's unclear if his claim is that animals have only "as if" representation (which isn't to be construed realistically), or if it's that animals are capable of genuine forms of mental representation but that their minds are exclusively nonconceptual. For the purposes of this chapter, we'll read him in the latter way.

One of Davidson's arguments turns on the fine-grained character of mental state attributions. In explaining people's behavior, we readily distinguish between thoughts and concepts that are co-extensive. For example, we distinguish between the thought that PAUL WANTS TO EAT THE APPLE THAT HE IS HOLDING from the thought that PAUL WANTS TO

¹⁶ In a related experiment, the birds were given only one type of food per compartment, and the birds preferentially cached food of a different type in these compartments, again showing planning — this time planning to enable them to have multiple types of food in both compartments.

EAT THE NEAREST APPLE WITH A WORM IN IT (even if the apple he is holding is the nearest one with a worm). Davidson suggests that we can only make sense of this distinction because ultimately we can interpret people's speech and not just their behavior. The problem for animals is that they don't have speech. Davidson illustrates the point by asking us to consider a dog that apparently knows that its master is home. But if the dog's master is also the president of the bank, can we say one way or another whether the dog knows that the president of the bank is home? According to Davidson, "We have no idea how to settle, or make sense of, these questions" (Davidson, 1975, p.163).

Davidson's epistemological framing of the argument is unfortunate, since, even when dealing with fellow human beings, there is no way to guarantee that we are right about what they are thinking or even that they have thoughts. But putting aside Davidson's epistemological spin on this argument, we can read Davidson as appealing to one of the criteria for conceptual capacities that we have already come across—Fodor's proposal that only concepts involve representing-as. For Davidson, the claim is that only humans are capable of representing-as, and hence that only humans are capable of conceptual thought.

The main difficulty with this argument is Davidson's claim that language is necessary for representing-as. Granted, without language it's unlikely that anyone would be able to think of an individual as a bank president, but BANK PRESIDENT is a particularly sophisticated concept and hence an unfair example. On the other hand, it's quite plausible that animals can represent the same individual in different ways—ways that matter to their own needs and interests. For example, sheep are known to be able to discriminate individual sheep by their faces and have been shown to retain knowledge of up to fifty photographed sheep faces for well over a year (Kendrick et al., 2001). Given that sheep, like us, are not able to recognize individuals in all possible circumstances, it is overwhelmingly likely that they will sometimes represent a given sheep as a specific individual, other times as another individual, and yet other times as simply another (unknown) sheep in the distance. Baboons are also known to represent individuals and are capable of representing conspecifics in terms of their place in both kinship and dominance hierarchies (Bergman et al., 2003). So a given baboon might represent the same individual as a specific individual, or as standing in a particular kinship relation to

another baboon, or as standing in a particular dominance relation to another baboon.¹⁷ Arguably, much of the evidence discussed in the previous section is applicable here as well. For example, the compartment with no food in the morning is presumably represented *as* a compartment lacking food in the morning by the jays—that is, after all, why they stock it with food when given the opportunity. But they must have other ways of representing this same compartment, since they represented the compartment when they first encountered it, prior to knowing that it would lack food in the mornings. Much the same could be said for the bees representing a stimulus as the same as another stimulus vs. representing it in terms of its perceptual features.

We've seen that the best way to make sense of Davidson's opacity argument is that it invites us to draw the conceptual/nonconceptual distinction in terms of the notion of representing-as, and in this way there is a connection between the opacity argument and one of Fodor's several suggestions regarding regarding the nature of iconic states. But Davidson's way of marking the conceptual/nonconceptual distinction in terms of representing-as is not new, since it is the same as one of Fodor's several suggestions. Davidson fails to show that humans are unique in satisfying this standard of conceptuality. And, as with Dummett's criterion, Davidson's standard does not seem to provide a principled way of drawing the distinction when it comes to animal species, again clustering humans together with sheep, jays, and bees.

Argument 3: The Argument from Holism

The next argument, also due to Donald Davidson, turns on the claim that conceptual content requires a rich inferential network. Davidson asks us to consider a dog that has chased a cat up a tree and that is sitting at the base of the tree and looking up. There is a natural inclination to say that the dog believes that the cat is in the tree, but Davidson suggests that there are grounds for questioning whether the dog can have the concepts that such a belief requires (for example, TREE or CAT). As Davidson puts it, the problem is that having the concept TREE requires having endlessly many general beliefs about

¹⁷ In ignoring the possibility of simpler, more plausible examples that would demonstrate conceptuality, Davidson's argument relies on something akin to the conceptualization fallacy, though it does not commit this particular fallacy. As we will see in a moment, the same point applies the next argument as well, the argument from holism.

trees, for example, that trees grow, that they need water, that they are combustible, and so on. “It seems to me that no matter where we start, we very soon come to beliefs such that we have no idea at all how to tell whether a dog has them, and yet such that, without them, our confident first attribution looks shaky” (Davidson, 1982, p. 98).

We will put aside Davidson epistemological way of framing of this argument, as we did for the previous argument. The essence of the argument from holism is that that conceptual content is determined by a representation’s role in inference and that representations have to be embedded in rich inferential networks to have any conceptual content at all. Since Davidson’s dog isn’t able to draw appropriate inferences that connect TREE to GROWTH, WATER, etc., it can’t have the concept TREE. And the suggestion is that this failure generalizes. The dog presumably doesn’t have any networks of inferences rich enough to most ordinary concepts.

Davidson’s holism argument is undermined by two serious difficulties. First, one can call into question Davidson’s view that conceptual content is determined holistically and is a matter of conceptual role. Other theories of conceptual content have been proposed, and their proponents might even see it as an advantage of these alternatives that they don’t imply that animals are incapable of having concepts (see, e.g., the different theories in Stich & Warfield, 1994). But even if conceptual content were holistic in the way that Davidson claims, his conclusion wouldn’t follow. Dogs may not have our concept TREE, but this doesn’t mean that they don’t have any concepts at all. The dog in Davidson’s example might very well have a way of representing the tree, where the representation is embedded in a pattern of inferences that is appropriate to the dog’s own mental life—maybe not the role that goes with the English word “tree” but a role that works just fine for the dog (Graham, 1998; Carruthers, 1992). Indeed, as Graham (1998) notes, most of us are hardly experts regarding most of our concepts. Western tree experts and people living in small-scale societies have far richer inferential networks regarding trees than most of us do (Atran and Medin, 2008).

Davidson’s way of drawing the conceptual/nonconceptual distinction in the argument from holism is reminiscent of the inferential integration criterion discussed in connection with McDowell’s response to the fineness of grain argument. In light of the objection regarding the possibility of animal concepts being embedded in inferential

networks of their own, this way of drawing the conceptual/nonconceptual distinction seems unprincipled. To all appearances, the type of inferential integration that dogs' representations of trees have differs only in degree, not in kind, from the type of integration that our representations of trees have, much as the inferential integration of ordinary people's representations of trees differs in degree, not in kind, from that of tree experts' representations of trees.

Argument 4: Detection, Reasoning, and Kantian Spontaneity

Both Robert Brandom (1994, 2000) and John McDowell (1994) develop an argument that is related to the previous argument from Davidson but that raises the bar on what is required for having concepts even higher (see also Haugeland, 1998; Davidson, 2001). The heart of their argument is that conceptual thought requires more than a capacity for detection. It requires the ability to appreciate the reasons that would justify a given concept's application and use, and this, in turn, is inherently a social practice that is dependent on natural language. Animals do not have concepts, according to McDowell, because "a mere animal does not weigh reasons and decide what to do" (McDowell, 1994, p. 115). Animals crucially lack "Kantian spontaneity, the freedom that consists in potentially reflective responsiveness to putative norms of reason" (McDowell, 1994, p. 182). Brandom puts much the same point in blunter terms. As he sees it, animals (and infants) may have representational abilities, but these should be likened to the representational abilities of thermostats (Brandom, 2000, p. 162; italics in original):

What is the difference between a parrot or a thermostat that represents a light as being red or a room as being cold by exercising its reliable differential responsive disposition to utter the noise "That's red" or to turn on the furnace, on the one hand, and a knower who does so by applying the concepts *red* and *cold*, on the other? What is the knower able to *do* that the parrot and the thermostat cannot. After all, they may respond differentially to *just* the same range of stimuli. The knower is able to *use* the differentially elicited response in *inference*. The knower has the practical know-how to situate that response in a network of inferential

relations—to tell what follows from something being red or cold, what would be evidence for it, what would be incompatible with it, and so on. For the knower, taking something to be red or cold is making a move in the game of giving and asking for reasons—a move that can justify other moves, be justified still by other moves, and that closes off or precludes still further moves.

On any account that takes concepts seriously—any account that doesn't just treat concepts as a useful fiction or a manner of speaking—thermostats don't have concepts. If animals are cognitively no better off than thermostats, then it would be quite reasonable to suppose that they too shouldn't be placed in the category of beings who possess concepts. However, the analogy is deeply misleading. The main problem is that it suggests that animals are merely responding to environmental features and aren't able to recruit this information in subsequent processing that serves their purposes. But on the contrary, the evidence suggests that there is an enormous amount of internal processing that goes on even in a bird's brain and that, often enough, this involves a complex integration of information before settling on an appropriate course of action. We saw earlier that Western Scrub Jays plan for the future. This sort of planning involves learning about and representing such environmental contingencies as when and where food will be available and using this information to adopt an appropriate caching strategy. Other experiments show these same birds to be capable of learning the rate of decay of foods of different types and of combining this information with information about when and where foods of different types were cached (Clayton et al., 2003). In this way, Western Scrub Jays can retrieve high valued food items when these items have yet to decay, but not waste effort retrieving them when they have already decayed. If the birds were mere detectors, one would expect them to be limited to recovering a previously stored item upon recognizing a cue for a cache, or avoiding a decaying item by directly perceiving a telling odor. But the situation is actually far more complicated. The birds are capable of figuring out which stored items are best to recover given how much time has passed and given the decay rate of the items they have cached. They aren't simply reacting to an environmental stimulus.

Brandom and McDowell would probably object that the birds still aren't reasoning in the relevant sense. They can't "play the game" of giving and asking for reasons. Though a bird might be sensitive to whether something is a cricket (a tasty food item) and have cognitive processes capable of drawing inferences about when and where it is to be located and even use all of this to plan for the future, the bird still isn't in a position to appreciate the reasons that are needed to justify applying the concept CRICKET. The bird can't mull over the many implications that follow from something's being a cricket and consider the reasons that other birds might offer in an avian debate over cricket-centered norms.

At this point, though, it seems fair to ask why any of this really matters. As with the argument from holism, it's one thing to require that a concept have an inferential role and another thing to require that for animals to have any concepts at all that these must be same inferential roles as can be found in language-using adults. There is also room to question whether Brandom and McDowell's standard for possessing concepts is so high that it excludes large number of adults. As Hilary Kornblith (2002) points out, not everyone is as disposed as Brandom and McDowell apparently are to reflect on their own and other people's reasons for how a word is to be used. In different cultures and historical periods, this would be considered to be unseemly behavior. And yet it would be bizarre to conclude that these people don't have concepts because they have effectively removed themselves from the game of reason giving. These objections point to a general worry about McDowell's and Brandom's criteria for singling out concept users as they do. It's always possible to pick a standard that elevates one group as the true concept users and that diminishes all other organisms. Given the historical viewpoint that human beings are inherently special and animals inherently inferior, it's a trivial matter to harp on something that we can do that they can't.¹⁸ But the distinction still has to be well-motivated. Otherwise the conceptual/nonconceptual distinction amounts to little more than a vehicle for dignifying an ad hoc difference between humans and animals.

¹⁸ For example, one could require that concept users be able to read French, or play chess, or appreciate a good philosophical argument. These too set (some of) us apart from animals but they clearly involve arbitrary standards.

There is also another problem with the significance that that McDowell and Brandom both attach to natural language when they insist that it is needed for giving and appreciating the reasons that are essential to concept possession. The problem, which McDowell himself notes, is that a radical disconnection between the minds of infants and adult humans introduces a significant challenge for explaining how infants ever become concept users (McDowell, 1994, p. 125). After all, if infants are utterly incapable of true thought, how can they learn to see the world in terms of the required norms of reason? McDowell's answer is that language acquisition bridges this gap (McDowell, 1994, p. 125):

This transformation risks looking mysterious. But we can take it in our stride if in our conception of the *Bildung* that is a central element in the normal maturation of human beings, we give pride of place to the learning of language. In being initiated into a language, a human being is introduced into something that already embodies putatively rational linkages between concepts, putatively constitutive of the space of reasons, before she comes on the scene. This is a picture of initiation into the space of reasons as an already going concern; there is no problem about how something describable in those terms could emancipate a human individual from a merely animal mode of living into being a full-fledged subject, open to the world.

The problem with this answer is that the noises, marks, and gestures in which language is expressed don't in themselves exhibit rational linkages. They have to be *interpreted*. And to interpret these noises, etc., it's not simply a matter of being surrounded by language. Houseplants are surrounded by language, but they don't learn English. They lack the needed cognitive machinery. But what kind of machinery are we talking about? If McDowell is right that linguistic competence is itself dependent on an appreciation of the space of reasons, then children will require cognitive capacities for appreciating reasons in order to learn language itself. So McDowell's explanation does little or nothing to relieve the mystery of how a being with a "mere animal mode of living" can

be transformed via exposure to natural language. If the infant is incapable of appreciating reasons, it remains mysterious how it grasps the rational linkages embodied in language, which it must grasp in order to learn the language.

Argument 5: The Metacognitive Argument

The final argument we'll discuss is again owing to Donald Davidson and is perhaps the most famous argument against animals having conceptual thought. In Davidson's original formulation of the argument, it begins with the claim that having a belief requires having the concept of a belief. Davidson adds that having the concept requires possession of a natural language. It follows, then, that to have a belief—any belief at all—requires facility with natural language (Davidson, 1975).¹⁹

While the overall structure of the argument is reasonably clear, the motivations behind the premises are considerably less clear. Why think that having a belief requires having the concept of a belief? Davidson's says little more than that the two are connected because having a belief requires the possibility of recognizing that the belief could be wrong. Presumably the idea is that beliefs, by their nature, are subject to correction and that to correct a false belief requires representing that the belief is false. In other words, for Davidson, correcting a false belief requires having *a belief about a belief*, and this in turn implicates the concept of a belief, as well as concepts of truth and falsity. The link to language is also largely implicit, but Davidson seems to think that concepts of truth and falsity are dependent on language. They “can emerge”, he says, “only in the context of interpretation” (Davidson, 1975, p. 170).²⁰ In a later related discussion, Davidson (1982) inserts one significant embellishment to this basic argument. He introduces the idea that the ability to be surprised is an indication of the ability to have beliefs about beliefs and hence to have any beliefs at all. “Surprise requires that I be

¹⁹ When we include Davidson's view that concepts are metaphysically dependent on thoughts, the implication for concept possession is that you can't have any concept at all without having the concept of a belief.

²⁰ For a related argument that beliefs about belief require language, see Bermudez (2003). Bermudez's argument turns on the claim that a belief about beliefs requires a vehicle in which it occurs. According to Bermudez, the only vehicle that could do the job is a linguistic one—hence the need for natural language. We lack the space to discuss this argument in any detail, but we'd suggest that Bermudez greatly underestimates the explanatory advantages of appealing to an internal system of representation for the vehicles of thought, that is, to something akin to Mentalese as opposed to English.

aware of a contrast between what I did believe and what I come to believe. Such awareness, however, is a belief about a belief..." (Davidson, 1982, p. 104).

Davidson's metacognitive argument raises some rather complex issues, but we'll mention just a few potential lines of response. First, it is not clear that having a belief requires the concept of a belief. In general having an X doesn't require having a concept of X—you can have a pancreas without the concept of a pancreas, you can have a language-processing module without the concept of a language-processing module, etc. Davidson's principal argument that things are different when it comes to beliefs rests on a particular picture of belief revision, namely, that an agent must recognize that his belief is false in order to correct a false belief. But it is doubtful that this is the only way to correct a false belief. A far more natural model would simply appeal to the first-order causal organization of our belief-fixation mechanisms. For example, we see no reason why these mechanisms couldn't be structured in such a way that a conflict between a perceived event and an occurrent belief directly results in a disposition to update the belief. You think that the tennis racket is in the car but when you look for it there you don't see it. This, all by itself, causes you to no longer think that the racket is in the car. You don't have to think to yourself, as it were, MY PRIOR BELIEF THAT THE TENNIS RACQUET IS IN THE CAR IS FALSE. You just have to cease to believe that the racket is in the car and, as a result, entertain other places where it might be found. A similar response applies to Davidson's remarks about surprise. Sometimes surprise might occur as a result of a highly reflective process. But it might also occur as a result of an entirely first-order process. In that case, when one registers information that conflicts with a preexisting belief, there is a disposition to undergo a certain affective response that is linked with the processes of belief revision.²¹ We should also point out that Davidson's claim that the concept of a belief requires language can also be challenged on empirical grounds. Recent research on infants as young as 13-months-old shows that infants can form beliefs about beliefs well before they have mastered a natural language (Onishi & Baillargeon, 2005; Surian, Caldi, & Sperber 2007).

²¹ It is somewhat ironic that Davidson places so much weight on the ability to be surprised, since psychologists now routinely use surprise as a tool for determining how prelinguistic children (and even animals, such as monkeys) represent the world (see, e.g., Baillargeon, 2004; Hauser, MacNeilage, & Ware, 1996).

The characterization of the conceptual/nonconceptual distinction that is implicit in Davidson's metacognitive argument is a complex one involving a capacity for belief about beliefs, a concept of belief, and concepts of truth and falsity. This criterion is obviously distinct from all the other ways of marking the conceptual/nonconceptual distinction that we've discussed. It also stands out in that it has little motivation beyond the argument that Davidson cites on its behalf (the metacognitive argument), and, consequently, its plausibility turns entirely on the status of that argument. Given the difficulties that the metacognitive argument faces, Davidson's criterion does not seem to be well-motivated.

4. Conclusion

We have reviewed ten arguments for nonconceptual states—five that delve inside adult human minds and five that are meant to suggest a contrast between the cognitive lives of adults, on the one hand, and animals and infants on the other. The philosophers who are associated with these arguments have identified numerous phenomena of interest. However, all of these arguments face serious objections and, as we have seen, there are almost as many different ways of drawing the conceptual/nonconceptual distinction as there are arguments for nonconceptual states. While much of value has come from this debate, the fact that there seem to be so many distinct and nonequivalent ways of dividing the class of representations into two subclasses highlights the question of why we should privilege any one of these distinctions as marking the conceptual/nonconceptual distinction. In addressing this question, we believe that philosophers should pay substantially more attention to the explanatory benefits of varying ways of demarcating the conceptual from the nonconceptual and to the relevant bodies of science that bear on the distinction (including developmental psychology and animal psychology). Ultimately, how we draw the distinction between the conceptual and the nonconceptual is a matter of the explanatory benefits of the classificatory scheme, and this ought to be informed by what our best science tells us about our own minds and about the minds of infants and animals.

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