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The Nonconceptual in Concept Acquisition

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ABSTRACT: The objective of this paper is to discuss the nature of nonconceptual, as opposed to conceptual, states and their content, by exploring the suggestion that the distinction between the conceptual and the nonconceptual be mapped onto the distinction between the linguistic and the nonlinguistic. This approach gives special relevance to our intuitions about the cognitive relationship between small children and adults, especially regarding the acquisition of concepts, in the course of normal cognitive development. Assuming that there is a developmental challenge to be met, the paper considers both the conceptualist and nonconceptualist strategies used to meet it; and concludes that conceptualism is a more satisfying option.

Keywords: abstraction, attention, concept acquisition, innate abilities, language, nonconceptual content, perception, recognition.

1. Introduction

The contemporary debate over the existence and nature of nonconceptual, as opposed to conceptual, content is best viewed as a discussion regarding two types of intentional (i.e., contentful) states. In this sense, questions about the existence and nature of nonconceptual content become questions about the existence and nature of nonconceptual intentional states: that is, whether there are states to the effect that concepts do not enter constitutively into the characterization of their content. Thus understood, nothing precludes from the beginning the possibility of subjects for whom possession of some conceptual states and abilities is a precondition for their possession of nonconceptual intentional states. However, because of the developmental considerations that will emerge shortly, an important strand in the contemporary debate over the existence and nature of nonconceptual, as opposed to conceptual, content has focused on the possibility of subjects who lack all conceptual abilities. For if a subject *S* can be in an intentional state *I*, in spite of her lack of conceptual abilities, then concepts cannot enter constitutively into the characterization of *I*.

Now, conceptual abilities are often characterized as the abilities typically exercised in judgement or belief.¹ So, given a distinction between belief and perceptual experience,² questions about the existence and nature of nonconceptual intentional states soon lead to the question about the nature of perceptual states, where the latter are intentional states that do not entail the exercise of conceptual abilities (assuming the subject in question has those abilities). The result of this way of looking at the prob-

¹ Cf. McDowell 1996; and Peacocke 2001a, p. 243.

² Cf. Evans 1982, pp. 122-9; and McDowell 1996, pp. 60-3.



lem is a view of such subjects as cognitively split: perceptual and doxastic states (and abilities, if particular states are exercises of abilities) are constitutively different, as the latter do, but the former do not, constitutively require concepts for the characterization of their content. Therefore, this split might be seen as an obstacle to a unified conception of cognition.³

At this point, a slight change of tack might be useful. Our intuitions about the existence of nonconceptual perceptual states are related to our intuitions about the cognitive relationship between nonhuman animals and children, on the one hand, and adult human beings, on the other. That is, we attribute perceptual states to nonhuman animals and children, in spite of not attributing conceptual abilities, and therefore beliefs, to them. But what is the relevant difference between animals or children, on the one hand, and adult humans, on the other? An intuitively salient difference concerns the fact that, unlike animals or children, adult humans have linguistic abilities. So, when considering the existence and nature of nonconceptual intentional states, we might help our enquiry by mapping the nonconceptual/conceptual divide onto the nonlinguistic/linguistic divide.⁴ Thus, the question about the nature of nonconceptual intentional states becomes the question about the nature of the perceptual states of nonlinguistic creatures. The relevance of this approach for the general question with which we began is that it holds the promise of illuminating the nature of perceptual states in general, including those of linguistic creatures (i.e., adult human beings who hold beliefs about the world and possess conceptual abilities). As the ultimate objective is to understand the nature of nonconceptual, as opposed to conceptual, states, this detour via the consideration of the perceptual states of nonlinguistic creatures might therefore prove to be crucial.

Now, concentrating on the cognitive relationship between small children and adults brings to the fore the nature of concept acquisition as part of normal human development. It is this aspect of the discussion about the nature of nonconceptual states that will be the focus of this paper. Thus, in the next section the intuition that an account of the cognition of nonlinguistic creatures (in particular, of the process of concept acquisition) produces a *prima facie* challenge for conceptualism will be brought into sharper focus. Then, in sections three and four a possible nonconceptualist way of meeting the challenge will be presented. Subsequently, a critique of the

³ Although a good amount of the contemporary literature on nonconceptual content focuses on the differences between belief and perception in the way suggested above, other intentional states, such as emotions, should not be considered irrelevant. Insofar as it is not only our behavioural responses, but also our perceptual states, that are emotionally-laden, the nature of emotions is connected to the question about the nature of the conceptual/nonconceptual divide. This paper does not explore this connection, but rather concentrates on an aspect of the contemporary discussion that will be introduced next.

⁴ Cf. McDowell 1996; and Bermúdez 1998 for an acceptance of this mapping. However, Crane 2001, pp. 150-5 is critical of it. The introduction of this mapping is very intuitive, and that is why it features prominently in the literature. It is not an objective of this paper to argue for such mapping, accepted by authors from both the conceptualist and nonconceptualist camps. Rather, the paper considers opposing accounts of concept acquisition, once the mapping is accepted.

nonconceptualist strategy will be offered in sections five and six. Finally, the paper will close by relating the conclusions obtained to a general empiricist view of cognition.

2. *A challenge to conceptualism*

The debate over the nature of the content of perception arises quite naturally in an epistemological setting. Taking as the starting point the fact that we hold determinate beliefs about the world, and the fact that we are rational beings, we are naturally led to consider the following question: what accounts for the rational status of our empirical beliefs? One initially plausible answer is that perceptual experience accounts for the rationality of our empirical beliefs.⁵ But how does the rationality-conferring relation between perception and belief work? It would appear that the following two requirements must be met: one, given that a rational relation is an inferential relation, the relata must be propositions, for only propositions can be inferentially related; two, the constituents of such propositions must be the believer's own concepts, for only then will the relation in question provide the believer's own reasons. It follows, therefore, that the content of perceptual experience is (indeed, must be) conceptual. Hereafter, this thesis will be referred to as conceptualism.⁶

An immediate worry that springs to mind about this conclusion is that it is highly counterintuitive, for two main reasons. The first reason stems from a phenomenological intuition, to the effect that the content of perceptual experience is more fine-grained than the concepts possessed by any given subject. Most of the recent discussion of the phenomenological objection has focused on the availability to subjects of demonstrative concepts or (short-lived) recognitional conceptual abilities, such as those linguistically expressed by "that F" or "that", suitably exploiting the presence of a sample.⁷

The second reason stems from the challenge posed by the case of nonhuman animals and small children. The basic intuition is that nonhuman animals and small children perceive the world, even if they lack both beliefs about the world, and the corresponding conceptual capacities typically exercised in belief (the constituents of the propositional content of belief). But how does this basic intuition undermine the conceptual nature of adult human perceptual experience? The link is provided by the fact

⁵ *Pace* Davidson, for whom perception causally accounts for the intentionality of empirical beliefs, whereas their rationality must be differently explained in terms of inferential relations with further beliefs. Cf. Davidson 1986.

⁶ Cf. McDowell 1996; and Brewer 1999, and 2005 for an argument along these lines.

⁷ Starting with Evans 1982, some of the crucial stages of the debate can be found in McDowell 1996, and 1998; Peacocke 1998, and 2001a; Kelly 2001; and Brewer 2005. Luntley 2003 offers a defence of the nonconceptual content of perception significantly different from other nonconceptualists, such as Peacocke. Peacocke argues that nonconceptual perceptual experiences stand in explanatory and rational relations to judgement, whereas the notion of nonconceptual content advocated by Luntley "does not introduce a level of content in virtue of which our possession of conceptual content in general has to be explained. The point is simply to get the phenomenology of perception right." (p. 421)

that both nonhuman animals and small children lack the appropriate linguistic abilities, together with the acceptance of a constitutive link between language and concepts.⁸ From here, it is argued either that nonlinguistic creatures do not perceptually experience the world (given that, as established by the argument from the rationality of belief, perceptual experiences are conceptual); or, in accordance with the basic intuition above, it is more plausibly held that the content of perceptual experience in general is (partly) nonconceptual.⁹

It is this challenge to conceptualism that will be the focus of the paper. The reason is not only the crucial support it provides for nonconceptualism: according to Peacocke, “the most fundamental reason [for nonconceptual representational content] lies in the need to describe correctly the overlap between human perception and that of some of the nonlinguistic animals” (2001b, pp. 613-4). But also because it maps the divide between the conceptual and the nonconceptual onto a distinction where our clearer intuitions might be helpful, viz. the linguistic versus the nonlinguistic. The rest of this section will explore further how the nonconceptualist’s conclusion helps to explain the overlap, and relatedly, exactly what the challenge to conceptualism amounts to.

One suggestion might be that the nonconceptualist conclusion explains the overlap by relating the cognitive differences between nonhuman animals and small children, on the one hand, and adult humans, on the other, not to their common perceptual abilities, but to other higher-level abilities. This is the line apparently taken by Schantz, who moves from the idea that “perceptual experience is not itself a form of recognizing, identifying, or classifying”, and the conceptual nature of recognition and identification, to arguing that “these [perceptual] experiences require no conceptualization,” whether they be the experiences of animals and children, or adult human experiences (2001, p. 174).¹⁰ The problem with this way of explaining the overlap is that it implausibly entails that neither nonhuman animals nor small children do such things as recognizing or identifying (eg, their carers), given their lack of concepts.

Alternatively, it could be argued that the relevant cognitive differences cannot be captured in terms of perception versus recognition, but rather in terms of perception versus description, where description essentially involves higher-level linguistic abilities. The basic idea can be stated succinctly as follows: “the essential contrast between the vision (for example) of *S* [an adult human being] and *B* [a nonlinguistic brute] is that *S* can describe things *S* and *B* can both see” (Collins 1998, p. 377). Or, as it is sometimes put, only adult humans have the ability to articulate their perceptual reasons linguistically, but linguistic humans and nonlinguistic animals can enjoy the same

⁸ Bermúdez’ Priority Principle reads as follows: “Conceptual abilities are constitutively linked with linguistic abilities in such a way that conceptual abilities cannot be possessed by nonlinguistic creatures.” (1998, p. 42)

⁹ “Partly” because the explanation of the challenge might only require that part of the content of human perception be nonconceptual. For a general discussion of this point, compare the differences between Peacocke 1992, on the one hand, and Peacocke 2001a and Bermúdez 1998, on the other.

¹⁰ Cf. Dretske 1995, pp. 8-22, for a related distinction between epistemic and non-epistemic seeing.

perceptual experiences (in appropriate circumstances). The problem here is that perception in nonlinguistic creatures appears to be assimilated to perception in linguistic beings who simply lack the right words for what they see, whereas the challenge posed to conceptualism by the case of nonlinguistic creatures was supposed to be a genuinely distinct challenge.

So, what is the challenge to conceptualism? As shown by the previous discussion, the following three ingredients must be combined: one, the difference between perceptual experience and belief; two, the existence of recognitional abilities in perceptual experience; and three, the peculiarities of the divide between linguistic and nonlinguistic creatures. The combination goes as follows: given that empirical belief or judgement consists in the exercise of certain conceptual abilities, and those empirical concepts are acquired through perception, then the content of perception is not (cannot be) conceptual (in particular, regarding those concepts typically exercised in empirical belief or judgement). Furthermore, given the constitutive link between language and concepts, it must be plausibly assumed that the acquisition of concepts goes hand in hand with the acquisition of language. Therefore, there must be an explanation of the overlap between prelinguistic children and linguistic adults, and the related conceptual abilities possessed by the latter, suitably sensitive to the fact that those abilities are acquired from an early age through perception. In other words, the overlap in perception is a developmental overlap; and the genuinely distinct challenge to conceptualism, a developmental challenge.¹¹

For the remainder of this paper, it will be assumed that the developmental challenge is a genuine challenge that the conceptualist cannot afford to shrug off: as a genuine challenge, it must be met. Now, despite appearances to the contrary, acceptance of the challenge does not undermine conceptualism. Rather, according to the main thesis of this paper, it is the nonconceptualist who is unable to meet the challenge (or at least, the nonconceptualist who is the direct target of the arguments below). To this purpose, most of this paper will be devoted to articulating a plausible nonconceptualist way of meeting the challenge (sections three and four). The last part of this paper will state the reasons why it fails to meet the developmental challenge (sections five and six).

3. A nonconceptual account of concept acquisition

The developmental challenge to conceptualism is made plausible by a general constraint on the acquisition of human cognitive abilities, including the conceptual abilities adult human beings typically exercise in empirical belief —namely, the Acquisition

¹¹ According to McDowell, his conception of experience as an actualization of conceptual abilities is not threatened by the acquisition of concepts in perceptual experience: “Why should the idea of experience as an actualization of conceptual capacities be threatened by the thought that some of the conceptual capacities in question are initiated in and by the very experiences in which they are actualized?” (2001, p. 182). The answer lies in the developmental overlap: i.e., normal cognitive maturation from childhood to adulthood involves the acquisition of certain abilities through perception. So, perceptual experience cannot include the concepts thereby acquired.

Constraint. Bermúdez states it as follows: “If a given cognitive ability is psychologically real, then there must be an explanation of how it is possible for an individual in the normal course of human development to acquire that cognitive capacity” (1998, p. 19). Typically, then, developmental explanations will have the following form: given a time coordinate t , and a set of cognitive abilities at that time S_t , there must be a temporally prior set of abilities S_{t-n} from which S_t is acquired as part of the normal course of human development.

In the case of empirical concepts, they are normally acquired through a process of learning from perceptual experience. Therefore, the developmental challenge is about the learning of empirical concepts through perception. To be sure, the Acquisition Constraint does not rule out innate cognitive capacities, for “every individual has [a] set of cognitive capacities that it possesses at birth” (Bermúdez 1998, p. 19). It does rule, however, that all cognitive abilities not included in the innate set be learnt on the basis of (the normal development of) temporally prior cognitive abilities, which might not themselves be innate, although must ultimately be (developmentally) based on innate abilities.

Now, in accordance with the Acquisition Constraint, the learning of conceptual abilities (such as the abilities typically exercised by adult human beings in empirical belief) requires “nonconceptual recognitional abilities” (Bermúdez 1998, p. 182). Given that the relevant abilities to be explained in this manner are empirical concepts, their acquisition must be related to perceptual experience. Therefore, nonconceptual recognitional abilities must be related to perceptual experience. How is this relation obtained? Simply because nonconceptual recognitional abilities involve “perceived resemblances between items,” in turn supported by “an unanalyzable feeling of familiarity” (Bermúdez 1998, pp. 182-3).

What we have here is a developmental account of recognitional abilities as belonging to two different levels, conceptual and nonconceptual. The core idea is that conceptual recognitional abilities are different to, and ontogenetically developed from, nonconceptual recognitional abilities. All that the level of nonconceptual recognitional abilities involves is basic (unanalyzable)¹² perception of similarities between items, something temporally prior to the learning of conceptual recognitional abilities. Given the constitutive link between conceptual abilities and language, what the conceptual level adds to the nonconceptual level, as part of the normal process of individual development, is language. Hereafter, this way of meeting the developmental challenge will be referred to as *the nonconceptual account of concept acquisition*.

So far, the account of concept acquisition provided by the nonconceptualist is incomplete, for it needs supplementing with a developmentally sound account of the connection between the conceptual and the nonconceptual levels. Given the mapping of the conceptual onto the linguistic, it must be a developmentally sound account of the acquisition of language by prelinguistic children. To this end, the next section

¹² And, as suggested by the idea of unanalyzability, possibly innate. This aspect of the nonconceptual account of concept acquisition will be taken up later in the paper.

turns to a central strand in the account of concept acquisition provided by classical empiricists¹³ —namely, abstractionism.

4. *Abstraction in concept acquisition*

According to Locke, general names and ideas require a special mental operation — abstraction. It is an operation of the mind “whereby ideas taken from particular beings become general representatives of all of the same kind; and their names general names, applicable to whatever exists conformable to such abstract ideas” (*Essay* II.xi.9). But how does abstraction work exactly? The following aspects of Locke’s account merit special consideration.

First, abstraction is a mental operation; that is, the mind works on particular mental items or ideas “separating from them the circumstances of time and place, and any other ideas that may determine them to this or that particular existence” (*Essay* III.iii.6). Second, the operation is a complex process, where the mind leaves out “that which is peculiar to each [particular idea], and retain[s] only what is common to them all” (*Essay* III.iii.7). Third, this dual process involves appreciation of “agreements” or “resemblance” between ideas (*Essay* III.iii.7). Fourth, generality in language is a matter of “words... being made the signs of general ideas” (*Essay* III.iii.6), which suggests that generality in non-verbal thought is prior to, and independent of, generality in language.¹⁴

There is a striking parallelism between the nonconceptual account of concept acquisition sketched in the last section and Locke’s theory of abstraction. For, according to the latter, there are two levels of ideas, particular and general, to the effect that taking appreciation of relations of resemblance as basic (i.e., taking it as basic that particular ideas can be perceived as similar), it is possible to acquire general ideas (and names). The move to the level of general ideas is a matter of abstraction, understood as a dual process of leaving out and retaining, at the level of particular ideas. Could the connection between both levels of recognitional abilities in the nonconceptual account of concept acquisition sketched in section three also be a matter of abstraction?

Returning a positive answer to this question requires a distinction between Locke’s textual account and what might be termed Locke’s basic theory of abstraction. Locke thought of abstraction as an operation on particular mental items, or images, to obtain other, less than fully determinate, particular mental images. However, in a recent commentary on Locke, Mackie has suggested that abandoning Locke’s problematic conception of ideas as mental images, and the accompanying conception of abstraction as an operation on mental images, does not involve renouncing the basics of Locke’s theory of abstraction. Freed of the imagistic component, abstraction should be understood as a process of selective attention. In Mackie’s own words, abstraction “consists in paying selective attention to one feature in a complex particular object of

¹³ But not only by them. As argued by Ayers, “the notion of abstraction was common property in seventeenth-century philosophy” (1991, p. 242).

¹⁴ Cf. Ayers 1991, pp. 253–5, for a similar point.

experience and ignoring the other features which are in fact occurring along with it, and in associating verbal expressions (or other signs) with the selected feature in such a way that one is ready to apply them to other objects that are like this one with respect to this one feature” (Mackie 1976, p. 112).¹⁵

The idea of selective attention is certainly not alien to Locke’s text. Thus, Locke described the process of acquiring the general idea *man*, as “leav[ing] out of the complex idea... of Peter and James, Mary and Jane, that which is peculiar to each, and retain[ing] only what is common to them all” (*Essay* III.iii.7). But, according to Mackie, all his basic theory of abstraction requires is something along the following lines: “Having paid attention to the various features in which human beings you have met or learned about resemble one another, and especially to the sub-set of these in which they differ from non-humans, and having associated the term ‘human being’ with these features... you know what it is for something to be a human being” (Mackie 1976, p. 113). Here, abstract ideas involve a dual process of leaving out and retaining, based on the perceived resemblance of qualities of one’s experience. In other words, freed of the imagistic component, Locke’s basic theory of abstraction turns into a “set of instructions” for the acquisition (learning) of general concepts, “literally described... in terms of selective attention, the acquisition of capacities for recognizing, and the joint use of a number of such capacities” (Mackie 1976, p. 113).¹⁶

Locke’s basic theory of abstraction is, then, an account of the learning of concepts, in two steps: first, the process of selective attention to features of one’s complex experience perceived as similar (and retained in memory); second, the association of a verbal expression (name) to the selected feature. All the first step requires is a set of perceptual recognitional abilities, that is, the abilities to perceive similarities in features of the world, plus the ability to focus on them. The second step adds language to the first step. Insofar as these are independent steps, it is possible for the first step to be present without the second, for instance in beings lacking the appropriate linguistic

¹⁵ It is an interesting exegetical point that Berkeley’s critique of Locke on abstraction (a critique later applauded by Hume) does not touch what has been called here Locke’s basic theory of abstraction: i.e., the idea of selective attention. Indeed Berkeley’s account of generality, presented as an alternative to Locke’s, includes the notion of selective attention. As Berkeley himself wrote in the second edition of the *Principles*: “And here it must be acknowledged that a man may consider a figure merely as triangular, without attending to the particular qualities of the angles, or relations of the sides. So far he may abstract: but this will never prove, that he can frame an abstract general inconsistent idea of a triangle” (*Principles*, Introduction §16). In other words, Berkeley’s account of generality requires abstraction, understood as selective attention. The latter is further glossed thus: “all that is perceived is not considered” (*Principles*, Introduction §16). Cf. Mackie 1976, p. 120; Ayers 1991, pp. 250-2; and Dancy 1998, pp. 33-4 for discussion of this and related issues. Dancy 1998, p. 33 attributes to Berkeley a theory of generality as selective attention, but differs from Mackie (and Ayers) in that he does not attribute it to Locke. For the purposes of this paper, all that is required is that Mackie has put forward a *prima facie* plausible case for attributing to Locke a theory of generality as selective attention.

¹⁶ The connection between abstraction and the ability to recognize similarities in experience is explicitly made by Locke thus: “Such precise, naked appearances in the mind [abstract ideas] ... the understanding lays up (which names commonly annexed to them) as the standards to rank real existences into sorts, as they agree with these patterns, and to denominate them accordingly” (*Essay* II.xi.9).

abilities.¹⁷ Altogether, both steps offer a developmental explanation of how prior perceptual recognitional abilities lead to the acquisition of concepts.¹⁸

As noted earlier, this bears a striking parallelism with the nonconceptual account of concept acquisition sketched in section three. Mapping the distinction between nonconceptual and conceptual recognitional abilities onto the distinction between nonlinguistic and linguistic abilities, Locke's basic theory of abstraction provides a way of understanding the developmental connection between the two levels distinguished in the nonconceptual account of concept acquisition. The prior nonconceptual level involves recognitional abilities consisting in the perception of similarities between features of experience, to the effect that when one such feature is selected, the ground is prepared for a higher-level ability to be acquired by suitably endowed (i.e., linguistic) beings. Conceptual recognitional abilities are both different from, and based on, nonconceptual recognitional abilities. The developmental overlap is accounted for by the existence of these perceptual recognitional abilities, for they are possessed both by prelinguistic children and linguistic adults.

For the remainder of this paper, it will be assumed that abstractionism, understood as a process of selective attention, is a possible way of developing the nonconceptual answer to the developmental challenge. So, if conceptualism is to be vindicated, this nonconceptualist account of concept acquisition must be criticised. But before moving on to the critical stage, the nonconceptualist's notion of selective attention must be clarified further, in the context provided by recent work on the nature of attention.

Some authors have linked attention to what happens at the subpersonal level of information-processing, thereby conceiving of attention as a nonconscious process.¹⁹ This is not the way in which the nonconceptualist account of concept acquisition sketched above exploits the notion of selective attention. Of course, the existence of nonconscious information-processing when attending to features of one's experience is not denied. The problem is, rather, that subpersonal information-processing cannot be what selective attention consists in, if the nonconceptualist account is to be a plausible account of concept *learning*. As an account of concept learning, it must explain how it is possible for any subject, from her own perspective and with the resources appropriate to that perspective, to acquire the relevant ability. Now, if concept learning required selective attention, understood as subpersonal information-processing, it would require the resources proper to the information-processing theorist. But it is quite possible for subjects to acquire conceptual abilities (i.e., learn a language) without delving into the theory of information-processing. Therefore, the requirement derived from viewing selective attention as a nonconscious subpersonal process is too strong. Hence, the process of selective attention exploited by the nonconceptual ac-

¹⁷ Locke defended that "brutes abstract not [...], since they have no use of words, or any other general signs" (*Essay* II.xi.10). But this affects only the second step of the two-step account presented in the main text.

¹⁸ On the developmental aspect of Locke's basic theory of abstraction, cf. *Essay* III.iii.7-8.

¹⁹ Cf. Campbell 1997; and Eilan 1998.

count of concept acquisition sketched above must occur at the conscious personal level.

5. *Innate recognitional abilities in concept acquisition*

The core of the nonconceptual account of concept acquisition sketched above is the existence of distinct levels of recognitional abilities, nonconceptual *versus* conceptual, where the former level is developmentally more basic than the latter. All that the nonconceptual level of recognitional abilities involves is the perception of similarities between features of the world. The conceptual level adds language to the prior nonconceptual level, on the basis of a process of selective attention to features of one's experience. Therefore, empirical concept learning consists in the association of a verbal expression (name) with a selected feature of one's experience, provided by the basic ability to perceive similarities in the world. It is this duality of basic recognitional abilities and empirical concepts that will be the focus of the present section, with special emphasis on the nature of basic recognitional abilities and their role in concept learning.

As already mentioned, the nonconceptual account of concept acquisition supports a set of instructions for the acquisition of concepts by a novice, along the following lines: "Have you noticed the similarity between this piece of paper, a piece of chalk, and milk? Call it 'whiteness'." And also: "Have you noticed what is common to Peter and James, Mary and Jane, once their individual peculiarities are left out? Call it 'man'." As suggested by Mackie, all that is required for understanding the instructions, and therefore acquiring the relevant concept, are perceptual recognitional capacities plus selective attention. Thus, in the nonconceptual account of concept acquisition, there is a duality of learnt concept (eg, *whiteness*, or *man*), and the explanation of how such a concept is learnt (eg, the ability to attend to the perceived similarity between paper, chalk and milk; or the ability to attend to the perceived common feature in Peter, James, Mary and Jane). In other words, there is a duality of learnt concept and the abilities required for concept learning. The recognitional abilities required in the learning process are, therefore, *basic* recognitional abilities; i.e., basic in relation to the learnt concept.

One way in which the basic nature of these recognitional abilities could be stressed would be to suggest that they are innate, unlearned, abilities. That is, some creatures have, as part of their innate cognitive endowment, the abilities to perceive and attend to resemblances between items of their experience (eg, in the cases of paper, chalk and milk; or Peter, James, Mary and Jane), perhaps underwritten by "an unanalyzable feeling of familiarity." In this case, what the novice must do is simply associate names with the resemblances given in her perceptual experience, where appreciation of resemblance is not a skill she must first learn.²⁰

²⁰ The dispute whether the resemblances are already in nature prior to their being perceived, or are the result of the act of perception, is not central: in either case, the resemblances are presented to the suitably endowed subject, and she simply directs her attention to them.

This conception of perceptual recognitional abilities as innate is not alien to the contemporary discussion of the relationship between the cognitive abilities of nonlinguistic creatures *vis-à-vis* those of linguistic adult human beings. Thus, Bermúdez has recently claimed that “categorization is grounded in perceived similarity” (2003, p. 94), and that “a sensitivity to environmental regularities [is] a basic part of the innate endowment of any creature capable of learning” (2003, p. 146), where regularity presumably requires similarity (a regular event/feature is one that turns up again, where items are relevantly similar to each other).

In terms of the developmental picture introduced by the Acquisition Constraint in section three above, what is being said is that the conceptual abilities of adult human beings develop directly from the innate set of abilities an individual has at birth. For all that is required for the acquisition of concepts by typical adults is the addition of language to their innate set of perceptual-cum-attentional recognitional abilities. The question to be addressed then, is whether this is a plausible conception of the recognitional abilities that constitute the (developmentally) basic level of the nonconceptual account of concept acquisition.

Let us assume that a given novice has two different perceptual-cum-attentional recognitional abilities regarding different features of her experience: the ability perceptually to attend to F *versus* the ability perceptually to attend to G. According to the nonconceptual account of concept acquisition, concept acquisition is a matter of learning the association between perceptual-cum-attentional abilities and names, in accordance with the instructions given to the novice; for instance, the association between the ability perceptually to attend to the similarity between milk, chalk and a piece of paper and the word “whiteness”. Thus, all our novice has to do is attach different names to her two different perceptual-cum-attentional abilities in order to acquire the relevant concept, F *versus* G.

The problem here is that the crucial aspect in the explanation of concept acquisition has been taken for granted —namely, how does the novice know what similarity in her experience she must associate with the name “F”, *before* acquiring the concept? How does she knowingly pick up such similarity? These questions do not arise in the nonconceptual account of concept acquisition. The novice does not know, and does not have to know. For there is no question of a *cognitive achievement* here. The only achievement is the association between perceptual-cum-attentional abilities and words —i.e., associating to the ability the word given in the instructions. But in that case, something crucial about concept acquisition has been missed: acquiring a concept (learning a language) is not simply a matter of correct tagging, but also a matter of learning perceptually to attend to the different features of one’s experience. Therefore, perceptual-cum-attentional abilities cannot be the innate set of abilities that explain what concept is learnt, and how; they themselves must be learnt.

This difficulty with the nonconceptual account of concept acquisition is reminiscent of the difficulty Wittgenstein focuses on when discussing the possibility that one may learn a language by means of ostensive definition alone (*PI* §§28–36). Examples of ostensive definitions are “the definition of the number two, “That is called ‘two’ ” —

pointing to two nuts" (§28); or "That is called 'sepia'" pointing to a coloured object (§30). According to Wittgenstein, although ostensive definitions are often successfully used to teach the meaning of the words "two" or "sepia", they only work "when the overall role of the word in the language is clear" (§30) —i.e., that the word is a numeral, or a colour-word, respectively. But what the latter means is that "one has already to know (or be able to do) something" (§30) in order to understand the ostensive definition, and therefore learn the meaning of the word. That is, ostensive definitions require further prior abilities. Therefore, an explanation of language learning as a matter of ostensive definition alone would be taking for granted, without explaining, a crucial aspect of language learning.

As Wittgenstein notes, it is tempting to think that such a prior set of abilities is not learnt, because all that is required for learning the meaning of a word by ostensive definition alone is attention to "what the person giving the explanation is pointing to" (§33), where this attentional ability does not have to be learnt. After all, it might be thought, one simply has the ability to point, or attend, to the colour of something, as opposed to its shape, when giving the ostensive definition "That is called 'sepia'." Similarly, the novice is simply able to know or guess correctly what is being pointed to, and what she must concentrate her attention on. All this ability consists in is her having "what may be called 'characteristic experiences' of" attending to the colour; that is, processes that "recur in all cases" where she attends to the colour, as opposed to the shape (§35). Of course, "because we cannot specify any *one* bodily action which we call pointing to the" colour, we think of the process as "*spiritual*" ("mental, intellectual", according to the translator's addition) (§36); where it is tempting to gloss the distinction between the host of bodily actions of pointing and the underlying (purely) mental attentional ability in terms of learnt *versus* unlearnt abilities. In other words, one learns to attend to something bodily (by pointing to it with one's finger, by staring at it, and so on), but one simply has the unlearnt ability to attend to it in one's mind. Furthermore, it is the latter unlearnt ability that explains the former.

According to Wittgenstein's reply, there is no such explanatory relation, because there is no purely mental attentional ability as distinct from the bodily actions of pointing with one's finger, staring, and so on. It is part of a mythical conception of the mental exposed by Wittgenstein that attention is a matter of what happens in a non-bodily realm. In fact, attending to an object's colour, as opposed to the shape, "depend[s] on the circumstances—that is, on what happen[s] before and after the pointing" (§35). But, of course, one has to learn how to behave in the right circumstances: i.e., that in this context attending means this (eg, "putting your hand up to keep the outline from view"), and in that context that (eg, "staring at the object and trying to remember where you saw that colour before", §33).

In short, Wittgenstein's conclusion is that learning a language requires a set of learnt abilities, including the ability to attend to a given feature F of one's experience, as opposed to (say) G. And this means trouble for the nonconceptual account of concept acquisition sketched above, according to which empirical concept learning requires a prior innate set of perceptual-cum-attentional abilities.

6. Meeting the developmental challenge

The criticism of the two-level nonconceptual account of concept acquisition developed in the previous section can be summarized as follows: the developmentally basic level cannot consist in the possession of innate recognitional (perceptual-cum-attentional) abilities, as the recognitional abilities required for concept acquisition must be learnt. Now, there might be a way to reinstate the nonconceptual account of concept acquisition, compatible with acknowledging the previous criticism. For the core of the nonconceptual account is the existence of two levels of recognitional abilities, nonconceptual *versus* conceptual, where the former are developmentally more basic than the latter. And this core could be preserved from the Wittgensteinian criticism seen above by relaxing the demand that the nonconceptual recognitional abilities at the basic level be innate, conceiving them instead as prior but learnt abilities. There would still be a duality of basic recognitional abilities and empirical concepts, but it would not be subject to the attack deployed in the last section.

However, it is not clear that this amendment will serve to defend the nonconceptual account of concept acquisition, either. This amended version is still a developmental explanation of concept acquisition as requiring *full-blown* (now learnt) recognitional abilities. That is, it is still an account distinguishing two different sets of full-blown recognitional abilities, nonconceptual *versus* conceptual.²¹ But one of the points made in the last section was that concept acquisition is not a matter of (mere) linguistic tagging, but also a matter of the acquisition of the appropriate perceptual-cum-attentional abilities by suitably endowed learning subjects. Ultimately, the reason why the prior attentional abilities on which Wittgenstein focuses must be learnt, is that concept acquisition and the possession of perceptual-cum-attentional recognitional abilities regarding given features of one's experience are not two separate abilities. Acquiring the concept F is acquiring a certain recognitional ability regarding a given feature F of one's experience. Therefore, a plausible account of concept acquisition cannot treat them as separate full-blown recognitional abilities, where one developmentally explains the other.

Now, the emerging picture might look objectionable. The nonconceptual account of concept acquisition looked developmentally sound, insofar as it met the demands of the Acquisition Constraint (certain recognitional abilities are temporally prior to the acquisition of empirical concepts). However, the emerging picture appears to foul the Acquisition Constraint, insofar as perceptual-cum-attentional abilities are not prior to the possession of empirical concepts, and therefore it appears to fall developmentally short. Nonetheless, as argued above, the developmental challenge is a genuine challenge; therefore, any plausible account of concept acquisition must be developmentally sound. So, how does the denial of prior (learnt or innate) full-blown recognitional abilities in concept acquisition square with the developmental challenge?

²¹ For a defence of full-blown recognitional abilities prior to language, cf. Locke: "For a child knows... certainly before it can speak the difference between the ideas of sweet and bitter (i.e. that sweet is not bitter)" (*Essay* I.ii.15).

The crux lies in the phrase “full-blown”. The main target of the argument presented in this paper has been the idea that there are full-blown perceptual-cum-attentional recognitional abilities regarding feature F, *before* the empirical concept F is acquired. The emerging picture is, therefore, compatible with the existence of *inchoate* perceptual-cum-attentional abilities; that is, with the beginning of an ability perceptually to attend to features of one’s experience. The crucial idea is that an inchoate ability is not simply a fallible ability (for concept-possessing subjects still make mistakes regarding features of their experience), but rather one not suitably integrated with other related abilities (by the standards provided by typical concept-possessing subjects). In other words, conceptual abilities are suitably (though fallibly) integrated with one another, while inchoate abilities are not. Insofar as it makes sense to think of suitable integration as gradually obtained, it makes sense to talk of inchoate abilities as part of a developmentally sound account of concept acquisition.

Thus, an account of concept acquisition based on the related notions of an inchoate ability and suitable integration would provide a conceptualist alternative to the nonconceptualist (abstractionist) account of concept acquisition developed in sections three and four. However, the notions of an inchoate ability and of suitable integration introduced in the last paragraph might be thought to be too metaphorical to constitute the basis of an alternative to the nonconceptualist answer to the developmental challenge. Therefore, the rest of this section will be devoted to spelling out the intuitively appealing character of this conceptualist alternative.

To begin, consider such practical abilities as swimming or riding a bicycle. No one would be considered to be able to swim or to ride a bicycle who could not swim or ride a bicycle on different occasions (other things being equal, such as no motor impairment present). In general, no one would be considered to possess a motor ability unless she could exercise it in suitable environments at arbitrarily chosen times (other things being equal, as above).²² Nonetheless, in the process of acquiring the relevant motor ability, a subject might be able to perform appropriately on certain occasions, but not others. It is clear that such a subject would not yet possess the relevant motor ability. But it is equally clear that she would not be in the same situation as someone who failed to perform adequately on all occasions. The subject who performs adequately on some, but not all, occasions, has begun to acquire a motor ability. She has an inchoate ability, which is not a (lesser) full-blown ability, but rather the early stages of a yet-to-be-acquired full-blown ability.

Now, there is a significant parallelism between motor skills and empirical concepts—namely, that *qua* abilities, both motor skills and empirical concepts must be exercised appropriately (other things being equal), if a subject is to count as possessing them. As a result, no subject would count as having learnt an empirical concept unless she performed appropriately on different occasions (other things being equal). But the

²² Cases of sporting achievement are perhaps an exception: an athlete might be said to have the ability to run one hundred metres under ten seconds, even if she only manages to exercise that ability once per season, as opposed to any time she competes. In this case, the relationship between possessing the ability and exercising it would need to be relaxed a little.

learning process allows for intermediate stages, as children's slow progress (including occasional setbacks) towards correctly distinguishing colours, shapes, or other aspects of their perceived environment clearly illustrates. Then, insofar as the notion of an inchoate ability is intuitively fit to describe the process of acquiring motor abilities, it must also be intuitively fit to describe the developmental stages of concept learning.

Consider further how possessing certain abilities involves possessing some others. Thus, in the case of motor skills, it would not be possible for a subject to be able to run one hundred metres under ten seconds, without being able to walk (although it would be quite possible for a subject to be able to walk, without being able to swim or ride a bicycle). Similarly, in the case of empirical concepts, it would not be possible for a subject to possess the concept red (or that of any other specific colour), without possessing the concept of a colour; or the concept square (or that of any other specific shape), without the concept of a shape. There are, however, some interesting differences between both types of cases, which will help clarify the notion of suitable integration exploited above.

In the former case, the dependence between different abilities means that the subject must first master one ability (eg, walking), before moving on to acquiring the other (eg, running one hundred metres under ten seconds), through possibly other intermediate stages involving perhaps other abilities. Here, learning involves a *serial* process. But the case of empirical concepts is significantly different. It simply does not seem right to suggest that a subject must first acquire the concept of a colour (or the concept of a shape), and then acquire the concept red or that of any other specific colour (or shape). Acquiring the concept of a colour is a matter of acquiring a certain recognitional ability regarding a certain feature of the perceived environment; and the ability to recognize colour as such and distinguish it from (say) shape differs from the abilities to recognize red or some other specific colour; but insofar as the perceived environment is presented to one as being red, or some other specific colour, a subject who did not possess, however inchoately, some of the latter abilities, could not have acquired the former ability. The suggestion is not that the reverse order of acquisition must be the right one; that is, that the abilities to recognize specific colours must pre-date the ability to recognize colour as such and distinguish it from (say) shape. As Wittgenstein's critique of ostensive definitions has made clear, possessing a concept like *sepia* requires some grasp, however incipient, of what a colour is.²³ Rather, the suggestion is that empirical concept learning is not a serial, but rather a *holistic* affair, insofar as learning some concepts goes hand in hand with learning some others.

Viewing empirical concept learning as a holistic affair may seem to imply that a subject could not learn any concept without learning all others. But given that typical subjects learn some concepts but not others, there must be something wrong with an account of empirical concept learning that entails such a false consequence. In fact,

²³ Similarly, Sellars has argued that possessing the concept of a specific colour, like green, involves knowing that appearances might change under different lighting conditions. That is, it involves having a grasp of the perceived environment to the effect that it contains colours. Cf. Sellars 1997, §19.

there is nothing in the previous paragraph to entail this false view of concept learning. What has been defended is that a typical concept learner will develop different abilities simultaneously; and that her progress with one ability will be constitutive of her acquisition of some other abilities. As she makes progress, her inchoate recognitional abilities will become progressively better integrated with one another. Eventually, they will become suitably integrated: that is, integrated to the standards that are common in typical concept-possessing subjects. It is then that the learner will count as possessing the relevant empirical concept (though fallibly so, as mistakes do occur).

In short, the proposal defended here is that empirical concept learning should be viewed as a gradual move from inchoate towards suitably integrated abilities. Thus understood, empirical concept learning does not involve unexplained prior (innate or not) full-blown nonconceptual (recognitional-cum-attentional) abilities, as in the account presented in sections three and four. However, the proposal defended here can serve to characterize the cognitive differences between small children and adult human beings, as well as the cognitive development from childhood to adulthood. Therefore, insofar as the conceptualist proposal defended here is not only developmentally sound, but also explanatorily more satisfying than the nonconceptualist account above, it ought to be preferred as an answer to the developmental challenge regarding concept acquisition.²⁴

7. Concluding remarks: a respectable empiricism

A common version of empiricism in epistemology is the thesis that the uninterpreted sensations given in perception provide a subject's reasons for empirical belief, which therefore entails the existence of rational relations across the boundary of the conceptual—that is, the nonconceptual content of perception justifies the conceptual content of belief.²⁵ According to the conceptualist, it is wrong to accept rational relations across the boundary of the conceptual, for unless perception constitutively incorporates the perspective of the subject of the belief to be justified, it cannot provide the subject's *own* reasons for belief. In view of the tight connection between rationality and concepts (concepts are the constituents of that which stands in deductive and other types of inferential relations; i.e., propositions), the subject's own perspective must be thoroughly conceptual.

²⁴ The direct target of the arguments presented in this paper has been the abstractionist account of concept acquisition, as presented above. Abstractionism is one possible way in which the nonconceptualist might choose to develop her intuitions regarding concept learning. However, there might be other ways for the nonconceptualist to develop her intuitions. Now, if in doing so the nonconceptualist is to avoid the gist of the critique presented in this paper, then she must avoid the duality of prior (unexplained) recognitional abilities and empirical concepts. The problem is that abandoning such a duality appears to be tantamount to abandoning the nonconceptualist project.

²⁵ This is not the only version of empiricism in epistemology. According to one popular version, there is a separation between causal and rational relations, to the effect that perception causes, but does not provide reasons for, empirical beliefs. Another more radical possibility is the replacement of all rational relations with causal relations (cf. Quine 1969).

The conclusion of this paper can be stated as follows: a structurally analogous form of empiricism, which involves crossing the boundary of the conceptual, is also a faulty explanation of the psychology of empirical belief; for it cannot provide a sound developmental explanation of the acquisition of the constituents of empirical belief. What is meant by “empiricism” in this developmental context is that typical concept acquisition (i.e., concept learning in the course of normal human maturation from childhood) involves a move from a nonconceptual level of prior (innate or not) full-blown recognitional abilities, the abilities perceptually to attend to features of the perceived environment. Entering the conceptual level is then conceived as a matter of applying a linguistic tag to the prior recognitional abilities.

This latter-day form of empiricism is faulty, because of the endorsed duality of prior (i.e., basic, unexplained) nonconceptual recognitional abilities and empirical concepts. In particular, because it seeks to explain the acquisition of concepts in terms of such basic nonconceptual recognitional abilities. But in doing so, it reveals a mistaken understanding of concepts and concept acquisition. For concept acquisition is not simply a question of linguistic tagging, but rather a matter of learning to recognize certain perceptual features of one’s experience.

Now, the downfall of this form of empiricism does not entail the abandonment of a developmental view of the connection between empirical concepts and perceptual abilities. Therefore, it does not entail the abandonment of empiricism *simpliciter*: i.e., the view that empirical concepts must be suitably related to, and originate in, perceptual abilities. But it does entail that the connection with perception must involve inchoate, rather than full-blown nonconceptual, recognitional abilities. And it also entails that perceptual states are not nonconceptual states. Therefore, conceptualism has been vindicated.²⁶

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