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BASIC BELIEFS AND THE PERCEPTUAL LEARNING PROBLEM: A SUBSTANTIAL CHALLENGE FOR MODERATE FOUNDATIONALISM

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ABSTRACT

In recent epistemology many philosophers have adhered to a moderate foundationalism according to which some beliefs do not depend on other beliefs for their justification. Reliance on such 'basic beliefs' pervades both internalist and externalist theories of justification. In this article I argue that the phenomenon of perceptual learning – the fact that certain 'expert' observers are able to form more justified basic beliefs than novice observers – constitutes a challenge for moderate foundationalists. In order to accommodate perceptual learning cases, the moderate foundationalist will have to characterize the 'expertise' of the expert observer in such a way that it cannot be had by novice observers and that it bestows justification on expert basic beliefs independently of any other justification had by the expert. I will argue that the accounts of expert basic beliefs currently present in the literature fail to meet this challenge, as they either result in a too liberal ascription of justification or fail to draw a clear distinction between expert basic beliefs and other spontaneously formed beliefs. Nevertheless, some guidelines for a future solution will be provided.

1. INTRODUCTION

In recent epistemology many philosophers have adhered to a moderate foundationalism in which there is a place of considerable importance for beliefs which do not depend on other beliefs for their justification. The stereotypical example of such privileged beliefs are perceptual beliefs. For example, according to the moderate foundationalist the justification of my visual belief that there is a cup on my desk does not depend on the justification of any other beliefs I have. Contrast this example with a belief which typically *does* depend on the justification of other beliefs. The justification of my belief that the gold prices will go up soon depends on the justification of other beliefs, like the belief that the euro and the dollar are sinking, my belief that sinking currencies incite people to invest in gold and silver, etc. These latter, *non-basic* beliefs, acquire their justification, at least partly, from the justification of the beliefs on which they are based. In contrast, the former *basic* beliefs have to acquire their justification from some other source than belief, such as experience or even the reliability of the perceptual process itself. This moderate foundationalism pervades both externalist (e.g. Lyons 2009; Goldman 2012; Graham 2012) and internalist (e.g.

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Pryor 2000; Huemer 2001; Feldman 2003; Tucker 2013a) theories of justification and as a result the notion of *basic* beliefs has become an essential concept for both internalist and externalist epistemologists.

In this article I argue that the phenomenon of perceptual learning – the fact that certain 'expert' observers are able to form more justified basic beliefs than novice observers – constitutes a problem for this notion of basic belief. Although this phenomenon is universally recognized in the literature on basic beliefs, there has been to my knowledge no explicit account of its epistemological status.[1] Moreover, both the intuitive explanation of perceptual learning and the accounts that are relied on in the literature can be shown to be problematic.

In the first part of the paper (sections 2 and 3), I will illustrate what I call 'the perceptual learning problem' by pointing out the importance of the notion of basic beliefs to both foundationalism and reliabilism, and subsequently demonstrating how perceptual learning constitutes a potential problem for the possibility of basic beliefs. In the second part (sections 4–6), I will discuss three possible solutions to this problem. One could invoke unconscious beliefs, one could devise a response from experientialism or one could defuse the problem by making a rigid distinction between beliefs and implicit mental contents. Each solution will be shown to have its own difficulties. I conclude that the perceptual learning problem constitutes an interesting challenge for moderate foundationalists.

2. FOUNDATIONALISM AND RELIABILISM

One prima facie reason to appeal to the notion of basic belief is that we do not seem to infer all of our beliefs from other beliefs. For example, it does not seem to me that my perceptual belief that there is a cup on my desk is the result of an inference. Therefore, it is phenomenologically apt to say that there are beliefs which do not result from inference. One could even take this one step further by claiming that since I did not infer my belief from any other beliefs, it is thereby not dependent on any other beliefs for justification. As intuition and phenomenology are defeasible guides, one should want stronger arguments before concluding on heavily debated issues such as justification. Two further motivations for maintaining that there are basic beliefs can be found. One stems from a moderate foundationalist response to the regress problem and the other from a process-reliabilist response to the clairvoyance objection.

According to the moderate foundationalist, basic beliefs constitute the foundations of our whole belief system. That is to say, all our non-basic beliefs are in the end justified by our basic beliefs. To see the value of such a position it is enough to imagine that there are no such things as basic beliefs. Suppose all beliefs were non-basic and hence their justification depended upon the justification of other beliefs. This would result in a regress problem, as the justification of each belief would require the justification of other beliefs, which in their turn require justification from other beliefs, and so on. The moderate

1 Descriptions or speculations as to how perceptual learning can come about can be found in the literature, e.g. Lyons (2008) and Cecchi (2014), but these focus primarily on the physical instantiation of perceptual learning, rather than on the epistemological status of expert perceptual beliefs, which will be our point of focus here.

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foundationalist has an intuitive and straightforward response to this regress problem, as she claims that *basic* beliefs are, or can be, "justified in virtue of states of affairs, processes, etc., that confer justification without themselves being justified" (Goldman 2012: 51).[2] Although a major topic of discussion has been what it is exactly that confers justification to these basic beliefs, this issue is only of indirect concern to us here. Instead of focusing on the justification of basic beliefs, I will focus on how one can form a plausible conception of basic beliefs when one takes into account the everyday phenomenon of perceptual learning. As it is obvious that before one can embark on discussions concerning what variety of foundationalism is preferable, one should be certain that the central concepts of foundationalism are in fact tenable, this is a pressing issue.

Apart from its importance to foundationalist theories in general, the notion of basic beliefs has also been shown to be useful for a specific variety of externalism, namely process-reliabilism (e.g. Lyons 2009; Goldman 2012). According to process-reliabilism, the justification of a basic belief depends on the reliability of the belief-producing system. All merits of such a view on justification aside, it also encounters some serious difficulties. The most salient counterexamples against such a view can be categorized as 'the clairvoyance cases', two classical formulations of which are provided by BonJour (1985) and Lehrer (1990). BonJour's example describes the case of Norman, who has clairvoyant powers that reliably result in true beliefs. Norman is unaware of his clairvoyant powers and has no evidence for or against his having them. Due to these clairvoyant powers, Norman suddenly comes to believe that the President is in New York. Even though he has no evidence whatsoever for this 'clairvoyant belief', it has been produced by a reliable belief-producing system. Norman's lack of evidence prompts us to hold that his belief that the president is in New York is not justified. This indicates that the justification one has for a certain belief depends on the evidence one has for the belief, rather than the reliability of the belief-producing system.

Lehrer's example is similar to that of BonJour, and features Mr. Truetemp, a man who has, without him knowing so, a device implanted in his brain that causes him to reliably form true beliefs about the exact temperature of his environment. Since Truetemp does not have any evidence for his 'clairvoyant belief' about the temperature, his 'clairvoyant belief' is not justified according to Lehrer.

Lyons (2009) argues that these counter-examples can be accommodated by invoking the distinction between basic and non-basic beliefs, thus providing another motivation for this distinction. According to Lyons, the reliability of the belief-producing system is only necessary and sufficient for the justification of *basic* beliefs. For *non-basic* beliefs however, other factors next to reliability also matter, such as conditional reliability and justification of premise beliefs. If one can show that clairvoyant beliefs are non-basic, this would allow the process-reliabilist to side-step the clairvoyance objection, given that reliability is not sufficient for justification of non-basic beliefs. Lyons does so by arguing that basic beliefs must be produced by a cognitive system which, among other things, "has resulted from learning and innate constraints" (Lyons 2009: 144). As this is not the

2 The classic alternative response is the coherentist response, according to which a belief derives its justification from its coherence with other beliefs. Another alternative is offered by so-called 'anti-luck epistemologies' which propose to sidestep the coherentism-foundationalism debate by focusing on epistemological virtues rather than beliefs. I will not consider coherentism or anti-luck epistemologies in what follows.

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case in the Truetemp and Norman cases, and is the case in typical cases of basic beliefs like perceptual beliefs, this requirement on basic beliefs offers the possibility of countering the clairvoyant cases and hence strengthening the position of process-reliabilism.

Although there have been some debates on the aptness of Lyons' exact definition of basic beliefs (Goldman 2011; Graham 2011; Ghijsen Forthcoming a), Lyons has devised an answer to most criticisms (Lyons 2011) and his position is still one to be taken into account. I will not go any deeper into these discussions on Lyons' definition, but rather assume his position to be a viable response to the clairvoyance cases. This would mean that there are at least three reasons to have a proper conception of basic beliefs: (i) it counters the regress problem and hence plays an essential role in foundationalist epistemology, (ii) it provides a way to respond to the clairvoyance objection and therefore strengthens reliabilist epistemologies and (iii) it accommodates the phenomenology of perceptual beliefs as being non-inferential. This is not to take a stance on the debates concerning the validity of reliabilism or foundationalism, but rather to emphasize that a proper conception of basic beliefs would benefit proponents of either of these popular positions.

However, before such a proper conception of basic beliefs can even get off the ground, there is one issue that needs to be dealt with in more detail. Many proponents of basic beliefs take perceptual learning to be an essential feature of their account (Feldman 2003; Lyons 2009; Markie 2005, Goldman 2012, Tucker 2013a): by means of perceptual learning, one can increase the amount of basic beliefs one is able to have. But no unproblematic account of this phenomenon has been offered as of yet, or so I will argue. The next section briefly introduces the phenomenon, and the following sections discuss several ways in which one might accommodate it.

3. PERCEPTUAL LEARNING

Throughout the article I will assume the following definition of perceptual learning (Cecchi 2014: 70):

> Perceptual learning is defined as the unconscious improvement (or deterioration) in stimulus discrimination resulting from the performance of some perceptual task requiring an intensive practice.

This phenomenon takes a central place in the discussions of basic beliefs, as it is commonly accepted that acquiring a certain expertise can allow you to discriminate certain stimuli better than regular observers. Consider the following example by Lyons (2009: 104):

> Walking through a field, you and I come across a copperhead. I'm a professional herpetologist, and it looks like a copperhead to me, though only like a snake to you. (It also, of course, looks like a snake to me.) Nonetheless, you and I have identical visual experiences.

It seems obvious that a good herpetologist, who has had intensive practice in the perceptual task of recognizing snakes, is able to form the perceptual, and hence basic, belief that there is a copperhead in front of her. Consequently, the herpetologist is immediately justified in holding this belief. It seems equally obvious, that I, who am not at all familiar with snake nomenclature or the visual features of different snakes, am *not* able to form the

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perceptual belief that there is a copperhead in front of me. Examples like these are rife in literature on basic beliefs and perception (Feldman 2003; Lyons 2009; Markie 2005; Siegel 2011; Goldman 2012; Tucker 2013a). Which exact kind of expertise is actually involved in the examples varies, but the general idea remains the same: experts can be immediately justified in certain perceptual beliefs that are not immediately justified for novices.

Although these examples are commonplace, it often remains undiscussed how one should think of the mechanism behind perceptual learning from an epistemological point of view. Moreover, the most intuitive reconstruction of the phenomenon seems to be problematic. One is tempted to say that the expert simply acquires some expert knowledge through his perceptual training which the novice typically lacks. For example, after having perceived several copperheads, the herpetologist is likely to know, and hence believe, that 'Copperheads look F', where F is an apt description of the visual features of a copperhead – something like 'copper red and triangular-headed'. The problem is that it is not easy to see how this belief can prompt the herpetologist to form the perceptual belief that there is a copperhead in front of him *without* rendering that perceptual belief non-basic. Therefore, the proponent of the view that expert perceptual beliefs are basic cannot maintain that the perceptual belief that there is a copperhead in front of her is based on the belief that copperheads look F. As Goldman notices: "Presumably, suitable training does not consist in acquiring justified beliefs about the subject matter in question from which the target belief can be inferred, because this would make the target belief indirectly [mediately] rather than directly [immediately] justified" (Goldman 2012: 55). So the question arises, what *does* suitable training consist in and what is the role of 'expertise beliefs' such as 'copperheads look F' in the formation of expert perceptual beliefs?

It is important to note that this is not a minor problem, as the vast majority of our perceptual beliefs are the result of perceptual learning of some sort. Why do I have the perceptual belief that there is a snake in front of me? Why do I have the perceptual belief that there is an ice cream van nearing? In most cases of perceptual beliefs there seems to be some sort of knowledge involved: e.g., the knowledge that snakes look such and such, or the knowledge that ice cream vans emit repetitive tunes. The question is which role this knowledge plays in the formation of these perceptual beliefs. Given the importance of basic beliefs for foundationalist and reliabilist theories of justification, a proper account of perceptual learning is required. Although there are several ways to go about this task, there are to my knowledge no satisfactory solutions offered in the literature.

4. THE RESPONSE FROM CONSCIOUSNESS

One straightforward and intuitive way to deal with the problem is to claim that a belief needs to be conscious in order for it to be the basing ground of another belief. If this were to be the case, the herpetologist's belief that there is a copperhead in front of her is basic unless she consciously tokened the belief that copperheads look F and inferred that there is a copperhead in front of her from that belief. This is not what happens in cases of perceptual beliefs, as these beliefs are typically defined as *cognitively spontaneous*, i.e. as arising without conscious inference (BonJour 1985; Feldman 2003; Lyons 2009; Goldman 2012). If cognitive spontaneity is indeed sufficient for basicality, then there is

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no problem with the expertise beliefs being unconsciously involved in the formation of expert perceptual beliefs. Although Goldman does not explicitly offer an account of perceptual learning, he does suggest that this is in fact what is going on in cases of expert perceptual beliefs: "Since all the information processing that occurs in the experts cognitive system is assumed here to be unconscious, we do not violate the requirement that the belief be formed spontaneously or non-inferentially; so it remains a candidate for being immediately justified" (Goldman 2012: 61).

However, it has been argued that the step from the spontaneity of beliefs to their basicality is not legitimate, as spontaneity might be a necessary, but certainly not a sufficient, condition for being basic (Lyons 2009: 132). On this view it is possible that a spontaneous belief is inferentially based on an unconscious belief. As a result, the spontaneous belief depends upon this unconscious belief for justification and no longer qualifies for immediate justification. Hence the mere unconsciousness of belief-production is not sufficient to safeguard that the resulting belief is formed non-inferentially, and, therefore, the mere unconsciousness of belief-production will not help to explain how perceptual learning takes place.

In order to see the intuitive plausibility of this objection to the response from consciousness, consider the following case:

> Jerry desperately wants to be a herpetologist, and hence writes down whatever he comes to know about snakes in a little booklet, the content of which he learns by heart. Walking around town, Jerry notices the sentence 'Copperheads are copper red and have triangular heads' sprayed on a graffiti wall. Even though he does not know who sprayed the sentence there, or why it was sprayed there, Jerry writes the sentence down in his booklet. By the time Jerry learned by heart that copperheads look F (i.e. copper red and triangular-headed), he actually sees one and spontaneously forms the belief that there is a copperhead in front of him.

It seems obvious that Jerry is not justified in believing that the snake in front of him is a copperhead. Moreover, the reason why Jerry is not justified seems to be clear: his belief that copperheads look F is not justified. Had he acquired the belief 'copperheads look F' from reading *The New Encyclopedia of Snakes*, rather than from trusting random graffiti art, his belief would have been justified. However, in this case, Jerry's belief that copperheads look F is unjustified. We can conclude that the justification of his belief that there is a copperhead in front of him depends upon his justification for the belief 'copperheads look F'. As this case suggests that Jerry's belief that there is a copperhead in front of him, although spontaneous, is not immediately justified, Goldman's suggestion that spontaneity is sufficient for basicality must be rejected. Consequently, we require a different account of the herpetologist's expert basic belief that there is a copperhead in front of her. We cannot hold that the belief results from an unconscious inference from the belief that copperheads look F, for this would render it non-basic and hence 'mediately' justified.

In order to safeguard the basicality of the expert perceptual belief, it might be worth investigating a way to account for perceptual learning without relying on the beliefs the expert in question entertains. Perhaps, then, instead of there being a difference in *beliefs* between the herpetologist and the novice, there already is a difference manifest in their respective experiences of the snake in front of them. Goldman recognizes this possibility when he claims that "[t]he relevant process might be a more extended one, not *from experience to belief* but *from receptor stimulation (to experience) to belief*" (Goldman

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2012: 62 original emphasis). If the relevant difference between the expert and the novice is one in experience rather than beliefs, then it is also unlikely that the epistemological difference depends on the justification of certain beliefs. These observations make what I will call the response from experience sound very promising.

5. THE RESPONSE FROM EXPERIENCE

Earlier, I illustrated the phenomenon of perceptual learning with Lyons' herpetologist case. Although he explicitly mentions that the herpetologist and the novice have the exact same visual experiences (2009: 104), it does not seem implausible to claim that the herpetologist actually has a different experience of the copperhead than the novice. One can imagine that the herpetologist, due to her training, pays more attention to certain features of the snake than a regular observer. The head of a copperhead is 'sharper' than that of the cottonmouth, which is more rounded. Perhaps the herpetologist experiences the head of the snake in front of her as 'sharp', whereas the novice experiences it as rounded, or at least not as distinctively sharp. The herpetologist might even be unaware of the fact that he pays attention to these features, although it is likely to affect his experience of the snake.[3] With this scenario in mind it seems likely that the ability to recognize certain kinds of snakes comes with a difference in the experience of these kinds of snakes.

Similar claims have been made in philosophy of perception. For example, Siegel argues that changes in recognitional dispositions come with phenomenological differences (2011: 100–2). If this is the case, it is worthwhile to investigate whether it is this difference in experience, rather than a difference in beliefs, that explains the difference in justification between the novice and the expert. When considering this option, one must bear in mind the current dialectics; if we want the expert perceptual belief to be immediately justified, the distinctive factor of the expert's experience must grant this difference in justification *without relying on other beliefs for justification*. This imposes a considerable constraint on the aspects of the experience that can play this distinctive role. For example, we assumed that the herpetologist sees the copperhead as having a 'sharp' head. The natural way of spelling the case out further would be to state that the herpetologist then infers that it concerns a copperhead on the basis of this content and her knowledge on copperheads and their features. Clearly, this way of spelling things out is of no use for us here, as on this view the expert perceptual belief 'this is a copperhead' is still dependent on the belief that copperheads have sharp heads. Suppose that a perceiver is not justified in believing that copperheads have sharp heads. This would certainly interfere with her justification for her belief that there is a copperhead in front of her, based on the perception of a snake with a sharp head. It is unclear how the representation of the sharp-headed snake could justify her perceptual belief *without relying on another belief*, and hence without rendering the belief non-basic.

One way to circumvent the problem of this initial response from experience is by claiming that the experience has the same content as the corresponding perceptual belief. So the

3 Something of the like is suggested in Nanay (2010). More generally, it has been established that the role of attention essential to perceptual learning Cecchi (2014: 15–17) and ultimately it should be taken up in any full-blown account of perceptual learning. However, for simplicity, I will not consider this issue here.

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herpetologist has an experience with the content 'copperhead', and is thereby immediately justified in holding the perceptual belief 'this is a copperhead'.[4] As the novice has an experience with the content 'snake' or perhaps even 'sharp-headed snake', she would at most be mediately justified in perceptual beliefs with these contents. In order to make this reply viable, the respondent from experience should make it plausible that (i) experiences can have natural kind properties such as 'copperhead' as their content and that (ii) if someone has an experience with content X, she is immediately justified in believing that X. In what follows I will focus on the plausibility of (ii) and leave (i) undiscussed. There are two main reasons for this focus: firstly, the contents of experience have been a subject of rich discussions which are independent from perceptual learning cases,[5] whereas perceptual learning cases have been central in recent discussions on (ii).[6] Secondly, any challenge for the plausibility of (ii) is a challenge for the initial response from experience mentioned above. For if it is implausible that an experience with the content 'copperhead' immediately justifies a belief with the content 'copperhead', it seems even more implausible that an experience with content 'sharp-headed snake' *would* immediately justify a belief with the content 'copperhead'. So any argument against (ii) will also offer an extra argument against the initial response from experience.

The main problem with the claim that an experience with content X offers immediate justification for the belief that X, is that it is conceivable that one has the experience of X for the wrong reasons. Up till now we have assumed that what is distinctive about the herpetologist's experience, whether this is the content 'copperhead' or 'sharp-headed snake', is due to her recognitional capacities. But as has been noted in recent discussions on experience and justification, we can equally imagine someone having similar experiences for the wrong reasons, such as wishful thinking or unjustified beliefs (Markie 2005, 2013; Siegel 2012; Ghijsen Forthcoming b; Lyons Forthcoming). In such cases, the distinctive experience would not justify the corresponding belief. Suppose for example that Jerry continues to spot copperheads based on his unjustified belief that copperheads look F. Moreover, Jerry's eagerness causes him to wrongly experience G-looking snakes as F-looking too. After a while, both F-looking and G-looking snakes look F to Jerry, that is: they both look like copperheads to Jerry. Now suppose once again that Jerry sees a copperhead. Consequently, he has an experience with the content 'copperhead' – just like the herpetologist would have. Is he thereby immediately justified in believing that there is a copperhead in front of him? Evidently not.

One can object that the premises of this case are unlikely to hold and I admit that the current case requires some imagination on what F-looking and G-looking snakes actually look like. In order to overcome these difficulties we can pick a natural kind with well-known visual features: gold. Markie introduces the case of an eager prospector, who due to wishful thinking, rather than expertise, experiences a piece of gold as a piece of gold (2005: 356–7). Even though the content of his experience reflects reality and is roughly identical to the

4 Such an approach is suggested in (Tucker 2013b: 12–13) and I read Siegel to endorse the former claim (2011: 99–116), but not the latter (2012).

5 Proponents of the rich view required here include McDowell (1998), Peacocke (2003) and Siegel (2006), opponents of such a view include McGinn (1982), Millar (2000) and Price (2005, 2009).

6 Current discussions on principle (ii) and its varieties originate in Pryor (2000) and Huemer (2001). See Tucker (2013a) for a comprehensive collection of papers on the varieties of (ii) and their flaws and assets.

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content of the belief: 'This is a piece of gold!', the eager prospector's experience does not seem to immediately justify this belief. As Markie himself concludes: "Yet, certainly, my wishful thinking should not gain my perceptual belief the same positive epistemic status of defeasible justification as your [i.e. the expert's] learned identification skills" (2005: 357). The morale of these examples is that one can have an experience with content X, without being immediately justified in believing that X, and hence (ii) is false. Although debates on whether cases like the eager prospector succeed in fully refuting (ii) are ongoing, it can safely be stated that no reply to these cases is uncontroversial. Therefore, these cases pose a challenge for the respondent from experience.

As it seems that the distinctive experience of the expert will not suffice to explain the epistemological difference between the expert and the novice, another distinctive feature of the expert has to be found: What is it that the novice lacks and the expert necessarily has, which only grants the latter immediate justification for her expert perceptual beliefs? The obvious response to this question is that the novice lacks the recognitional skills that come with being an expert. This is illustrated by Jerry's tendency to recognize G-looking snakes as F-looking snakes. Presumably, the expert only experiences F-looking snakes as F and similarly experiences G-looking snakes as G. Moreover, this skill distinguishes the expert from Jerry: her experiences and her consequent judgments are reliable, whereas Jerry's are not. However, the epistemological work in such an account is done – at least partly – by the skill of the expert and hence not by the contents of her experience alone, as the same experience without the skill does not suffice for justification, or so cases like the eager prospector suggest. This brings us to a different response to the perceptual learning problem, which focuses on the skills of the expert rather than on her beliefs or her experiences. What is distinctive about the herpetologist is that she can reliably tell apart copperheads from non-copperheads.[7] The final response which I will discuss here focuses on the reliability of the belief-producing processes. Let us now investigate whether such a response to the perceptual learning problem can be made plausible.

6. PROCESSES AND IMPLICIT CONTENT

Some belief-producing processes can work according to a certain content without this content being explicitly tokened anywhere in the system within which the process takes place. Take for example the reasoning processes of young children. Even though these processes take place within a belief-system that does not have the explicit content 'modus ponens is a valid form of argument', their reasoning processes produce outputs for given inputs *according* to the content 'modus ponens is a valid form of argument'.[8] For example, if a child believes that if it is raining, the ground is wet, and it believes that it rains, then it will also believe that the ground is wet. Moreover, the child does not require justification for the use of modus ponens in order to be justified in beliefs like 'the ground is wet because it is raining'. By working according to the content of modus ponens, this process has modus

7 One could of course hold that a distinctive experience of copperheads is required on top of this reliable recognition skill, but the success of such an account would still depend on the success of the response from implicit content (see section 6).

8 Cf. Dennett's example of a chess computer that works according to the command 'get the queen out early', without this command being explicitly tokened anywhere the system (1981: 107).

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ponens as its *implicit* content rather than as an explicit content, such as the belief that it is raining. From this example it seems that the notion of implicit content allows for the involvement of relatively high-level contents in belief-production, without making the justification of the resulting belief dependent on the involved content. If the expertise belief could be accommodated in this way, we could evade the problems of the previous responses.

Cases of recognitional capacities involving implicit contents have been investigated in cognitive science. Research has shown that subjects can reliably judge whether a given string of symbols is grammatically well-formed, *without* knowing by which criterion they perform this judgment. That is to say, even though these subjects have explicit 'judgmental knowledge', they lack explicit 'structural knowledge', i.e. knowledge about what exactly makes a string of symbols grammatically well-formed (Dienes and Scott 2005; Fu *et al.*, 2008). One might recognize this phenomenon as the feeling that 'something is wrong' when entering a familiar room, or reading an incorrect sentence in one's mother tongue, without being able to point out which mistake has been made. Similarly the subjects can tell that some grammatical rule has been disobeyed, but they are unable to articulate the rule itself. This suggests that their belief-producing systems have something like 'if a string disobeys rule X, it is ungrammatical' as an implicit content, without having rule X explicitly tokened in the systems. If the recognitional capacities of experts were to match this pattern, a response to the perceptual learning problem could be devised.

The steps to be taken in devising such a response are the following: Firstly, the distinctive features of implicit content must be established. Secondly, it must be shown that these features make it plausible that the justification of beliefs cannot depend on the justification of the implicit contents involved in their production process.[9] For if beliefs could depend on the justification of implicit contents in such a manner, the involvement of implicit beliefs in belief-production would render the target beliefs non-basic and therefore the implicitness of contents will not safeguard basicality. Finally, it must be shown that the structural knowledge of the expert can be implicit in the relevant way.

Once these steps are undertaken successfully, the response from implicit content can be devised as follows: Expertise beliefs are not involved in the production of expert perceptual beliefs. Rather, the system that produces the expert perceptual belief operates according to an implicit content which is semantically similar to the expertise belief. For example, the herpetologist has the implicit content 'If a snake looks F, it is a copperhead' operating in her perceptual belief-producing system. As beliefs cannot depend on implicit contents for justification, the expert perceptual belief 'this is a copperhead' remains basic and is immediately justified. Note that the defendant of this response can remain silent on the controversial issue of the content of experience, as the content of the experience plays no justificationary role. Rather, the justification is bestowed by the functioning of the perceptual system. This would offer the respondent from implicit content a strategic advantage over the respondent from experience. But let us investigate whether the necessary

9 A common remark on this step is that since the cognizer never explicitly tokened the content, the content cannot be justified in the first place. So the question as to whether it is justified or not is ill-posed. However, this remark neglects the important distinction between evidential justification and propositional justification. The latter can be had by a cognizer for a proposition, without this proposition ever being entertained by the cognizer. I might have justification for the proposition that Russia is larger than Madagascar, even though I never formed a corresponding belief. The question then is: do we require propositional justification for the implicit contents in our cognitive systems?

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steps for a response from implicit content can be undertaken, before concluding on its possible advantages.

The preparatory step is to identify the characteristic features of implicit contents. There are two main characteristics of implicit content that I would like to consider here: automaticity and subpersonality. Both of these features play an important role in the literature on implicit content (e.g. Henderson and Horgan 2000, 2011; Lyons 2013), and as we shall see they make for an apt characterization of the phenomenon. In order for the response from implicit content to work however, it has to be demonstrated that these features distinguish implicit contents from explicit contents: it should be impossible for explicit contents to have both these features and impossible for implicit contents to *not* have these features. I shall take beliefs to be examples of explicitly tokened contents. Note that if one were to disagree with this assumption, the response from implicitness would be immediately impaired, for if beliefs can be implicit then implicitness of the involved contents will obviously not safeguard the basicality of the resulting belief. The second and the third step will be taken per feature. First I will investigate automaticity, then subpersonality.

6.1. *Automaticity*

Firstly, implicit contents are often said to be accommodated 'automatically' (Henderson and Horgan 2000: 516; Lyons 2013: 545). This is to say that cognitive systems act according to these contents whether we want them to or not. In the cognitive experiments discussed above, it appears that subjects will produce strings of symbols according to the grammatical rules which they implicitly hold to be correct, even when asked to produce strings randomly (Dienes and Scott 2005; Fu *et al.* 2008). The subject has no control over the application of these contents; they are automatically embedded in the functioning of her cognitive systems. In order to illustrate that the same holds for the contents involved in perceptual learning, we can imagine that we convince the professional herpetologist that she is about to enter 'fake snake country', where everything that looks like a snake is actually a cleverly disguised piece of rope and subsequently we present her with a copperhead. Even though the herpetologist will not believe that there is a copperhead in front of her, as she has counterevidence to the fact that F-looking things are snakes at all, the snake will still look like a copperhead to her, as her visual system automatically works according to the content that copperheads look F.[10] Her visual system still works according to the content 'if it looks F, it's a copperhead' even when she has good reasons to believe that nothing in the area is a copperhead, as copperheads are snakes. The herpetologist does not have voluntary control over the implicit content that operates in her visual system.

Be that as it may, it is not clear that the same does not hold for unconsciously processed beliefs. Suppose that the first time Jerry identifies a copperhead, his father points out to him that he is not justified in his belief that this is a copperhead, as one should not believe herpetological claims written in graffiti. We assumed that Jerry spontaneously identified the snake as a copperhead the first time and I think it is equally plausible that Jerry will still feel that copperheads look like copperheads for a while after this first time.

10 This thought experiment is similar to a thought experiment used by Siegel in order to argue that the presence of sortal properties in perceptual experience is not reducible to the belief that there is a sortal property instantiated (Siegel 2011: 104–5). Because the dialectics are essentially different there I chose to use an adaptation of the experiment instead of reproducing it.

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Even though he stops believing that they actually *are* copperheads. As a result, I see no obvious reason to hold that implicit contents are necessarily more 'automatic' than unconscious beliefs and consequently I see no reason to claim that automaticity distinguishes implicit content from explicit content.

This is not to say that there are no such reasons. Another side-effect of automaticity discovered in cognitive experiments is that one remains equally reliable in applying the implicit content when one is not paying attention (Jacoby 1991). Judging whether this is also the case for the contents involved in perceptual learning is something that cannot be decided by imagining cases like fake snake country or Jerry the wannabe herpetologist.[11] Therefore, I leave it to the respondent from implicit content to add such arguments.

6.2. *Subpersonality*

Secondly, implicit contents are taken to be 'subpersonal' (Lyons 2009: 58–9 and 141–2).[12] This is to say that the cognizer does not regularly hold these contents as beliefs, in fact she is likely to never become aware of their presence or she might even deny them. It is not a content of the cognizer, but rather of the system in which it operates. As a result the content itself cannot be used as an input for another system of the cognizer, such as the conscious reasoning system, for the implicit content is only present in as far as it contributes to the output of its system (Lyons 2013: 541).[13] That this can be an apt description of the contents involved in perceptual learning is illustrated by the cognitive experiments on grammaticality. However, the question here is whether it will serve as a distinctive feature: is an implicit content necessarily subpersonal and a belief necessarily not?

As we have seen, beliefs can be tokened unconsciously. But even when we token them unconsciously, they tend to be accessible to our consciousness. Suppose Jerry is asked why he believes the snake is a copperhead the first time he sees one. He is likely to access his unconscious belief that 'copperheads look F' and say that this snake looks F and copperheads look F too. This constitutes an obvious difference with the grammaticality cases. But let us consider an intermediate case:

> George has been living in Charleston all his life, a place where copperheads are part of the regular fauna. He takes no interest in herpetology or snake nomenclature, but living where he lives, he has repeatedly encountered various kinds of snakes – among which the copperhead. Although George does not know the names of these snakes, he is able to recognize them as being from a certain kind. Seeing a copperhead, he can immediately say whether or not this snake is of the same kind of snake as the one he saw yesterday. Although his belief-producing systems function according to contents like 'this kind of snake has a sharp head', he does not actively form such beliefs.

Supposing that George can reliably pick out snakes as being of 'the kind he saw yesterday', it seems reasonable to say that he is immediately justified in holding the belief 'this snake is of the same kind as the one I saw yesterday', just like the herpetologist is immediately

11 Moreover, the intuitions I have illustrated by these cases can still be overridden by actual cognitive research, in such a case I would happily grant the viability of this response.

12 Although Lyons does not characterize these subpersonal contents as implicit here, he explicitly does so in Lyons (2013: 543).

13 Dretske uses the same criterion to distinguish between mental and non-mental representations (1995: 19–20).

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justified in her belief that this snake is a copperhead. Moreover, I consider it to be quite imaginable that George *can* access the implicit content relevant for his recognitional capacities in the sense that he can become aware of it and can use this content as the input of his conscious reasoning system. Suppose we ask George how he knows that this snake is of the same kind as the one he saw yesterday. He could very well respond: 'It's copper red and has the same kind of head', even though he had never really thought about it. Or suppose we ask George, would you say the heads of the copper red snakes that live around here are rounded or sharp? It is not unlikely that he could answer correctly. Now it is open to the respondent from implicit content to state that in that case, George *did* have an explicit content about this kind of snake. It just happens to be the case that, unlike the herpetologist and the explicit content 'copperheads look F', George never accessed this explicit content. As I see it however, we have no independent reason to believe that this is the case, but I will not press this issue any further here. We can conclude for now that George's case does not necessarily make the response from implicit content incoherent.

The third step was to investigate whether the 'subpersonal' contents can in fact be inferential bases. The problem case for the respondent from implicit content would be one where the justification of a certain belief *does* depend on the justification of an implicit content. Can we imagine a case where a belief is dependent upon a subpersonal content for justification in the same way as it is often dependent on other beliefs? One can imagine cases of cognitive bias, where the implicit content of the biased system is inaccessible to the cognizer. For example, suppose I tend to form my judgments of people according to racist criteria. My judgment-system works according to the content 'all people of race X are lazy'. However, I am convinced of being an open-minded and unprejudiced person, and cannot access this content. Surely, I am nonetheless unjustified in my judgments of people of race X and it seems to be the case that this lack of justification is due to the racist implicit content at work in my judging system, even though this content is subpersonal in the sense that we have outlined. That is to say, I do not hold this content as a belief, nor will I ever use it in my conscious reasoning processes. The most attractive account of this situation for the respondent from implicit content is to attribute the content's effect on justification to its effect on the reliability of the judgment system, rather than its lack of justification. My judgment system will certainly become unreliable when operating on the content 'all people of race X are lazy'. The respondent could claim that it is only in virtue of this impairment of the reliability of the belief-producing process that the racist content affects the justification of the resulting beliefs. As a result implicit contents could still confer justification to the target belief without being justified by contributing to the reliability of the belief-producing process. Hence the implicit content 'copperheads look F' can still be involved in the perceptual belief-producing system of the herpetologist, without rendering her perceptual beliefs non-basic.[14]

So it seems that what is required to fully refute the response from implicit content is a case of a subpersonal content which affects the justification of certain beliefs *over and*

14 Spelled out in this way, the response from implicit content might seem to be susceptible to standard clairvoyant cases. Recall from section 2 however, that the response to these objections from basic beliefs relies on the condition that basic beliefs are produced by a cognitive system which, among other things, "has resulted from learning and innate constraints" (Lyons 2009: 144). As clairvoyant cases typically violate this condition and implicitness seems to be independent of the issue, the response from basic beliefs can still go through if it is formulated in terms of implicit content.

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above its effects on the reliability of the belief-producing system. I will not attempt to construct such a case here as this also concerns the debate on reliabilism as a whole, but it must be noted that this move towards reliabilism is enough to discourage certain moderate foundationalists from choosing the response from implicit content. As I noted in the introduction, moderate foundationalism and the basicality of expert perceptual beliefs are theses that pervade both internalist and externalist theories of justification. Internalist defenders of the theses are unlikely to find a response that commits them to reliabilism attractive.

6.3. *Evaluating implicitness*

As it stands now, a response from implicit content seems to result in a commitment to reliabilism. Nevertheless, this response seems to be the least problematic of the responses discussed here, in the sense that it can explain how expert perceptual beliefs like 'this is a copperhead' can be immediately justified, without rendering less attractive candidates, like Jerry's copperhead-belief or the eager prospector's gold-belief, immediately justified too. Relying on the grammaticality cases, one can argue that the contents involved in immediate recognitional capacities can be inaccessible to the cognizer and therefore cannot be the inferential base of the resulting belief. Because recognitional capacities tend to result in the acquisition of explicit expertise beliefs which are semantically similar to these implicit contents, it is easy to misinterpret these expertise beliefs as involved in the production of expert perceptual beliefs, rather than their implicit counterparts. In order to maintain coherence, the respondent from implicit content will have claim that any accessed mental content is in fact explicit. Rendering this claim plausible is the respondent's main challenge.

For now, instances of implicit expertise contents can be indistinguishable from cases of unconscious inference. The only reliable way to distinguish between implicit contents and unconscious beliefs is to check their accessibility, but as experts typically have accessible contents which are semantically similar to the implicit contents that purportedly allow for the justificationary difference, it is impracticable to determine whether the content actually involved in the belief-production is implicit or not. Bearing in mind that unconscious inference produces non-basic beliefs (cf. supra), this indistinguishability puts strain on the moderate foundationalist claim that expert perceptual beliefs are actually basic. To say the least, the opponent of moderate foundationalism concerning expert perceptual beliefs, like 'this is a copperhead', is free to claim that such beliefs can only result from unconscious inference, as the respondent from implicit content has no solid ground in order to argue for the contrary. Hence the perceptual learning problem is still not entirely solved by the response from implicit content. What is required to make the response entirely plausible, is cases of natural kind recognition *without* explicit contents that semantically reflect the implicit contents at work in the perceptual systems of the expert.

Something of the like is suggested by the famous chicken-sexer cases: chicken-sexers allegedly were able to reliably tell male from female chicks, without having any knowledge as to which criterion they use when making the distinction.[15] Like the subjects in the

15 See Pritchard (2006: 68) for a concise description and discussion on the chicken-sexer case as it is commonly used in epistemology.

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grammaticality experiments, the chicken-sexers were said to lack accessible structural knowledge but nevertheless had accessible judgment knowledge. However, one should be careful in using these cases, as it is not certain that the way they appear in epistemological literature is true to reality. In fact, examples of chicken-sexers who do not know which criteria they are using are hard to find. Although Pritchard is correct in pointing out that the mere imaginability of the cases raises important issues in debates concerning internalism and externalism in epistemology (Pritchard 2006: 68), what is required to settle matters here is their actual possibility; the moderate foundationalist who endorses the basicality of expert perceptual beliefs like 'this is a copperhead', has to claim that contents concerning natural kinds can be accommodated implicitly in the perceptual systems of human cognizers, in order for the response from implicit content to work. This is a claim about the actual cognitive capacities of human beings, so it needs to be backed up by actual cases. If this does not seem to be possible, the response from implicit content cannot explain how a herpetologist can be immediately justified in believing that she is presented with a copperhead rather than a cottonmouth. Therefore, it is up to the respondents from implicit content to argue that such contents *can* be accommodated implicitly. For now, the matter is underdetermined: it might be the case that experts have the relevant implicit contents tokened in their perceptual systems or it might be the case that their judgments result from unconscious inference. Both scenarios are indistinguishable but significantly different from an epistemological point of view.

7. CONCLUSION

The main goal of this paper was to address a deficit in the contemporary debates about basic beliefs and immediate justification and to evaluate some possible solutions to this deficit. Even though perceptual learning cases are abundant in the literature, a proper epistemological account of the phenomenon is lacking. Moreover, it seems that devising such a proper account is by no means self-evident. The intuition is that the expertise belief is somehow involved in the production of the expert perceptual belief. Applied to the example we have been considering here: it seems that the belief that copperheads look F is somehow involved in the production of the herpetologist's perceptual belief that there is a copperhead in front of her. How can we account for this *without* rendering the expert perceptual belief non-basic? I have proposed several answers which each came with their own drawbacks.

The first way out discussed here was claiming that the expertise belief was unconsciously tokened in the belief-production of the expert perceptual belief. However, as we have seen there are cases of unconscious inference and hence the expert perceptual belief would still turn out to be non-basic on this account. The second way out relied on the experiential difference between the expert and the novice. In order to defend the moderate foundationalism considered here, this response results in a commitment to a 'rich' view on experiential content and comes with the challenge of countering 'wishful thinking cases', where the correct experiential content does not seem to grant immediate justification.

The final response directed us towards a deeper epistemological issue: what distinguishes explicit contents, like beliefs, from implicit mental contents? A suggestion of how this delineation could go about has been offered: implicit contents are subpersonal and beliefs are not. Such a delineation comes with a limitation and a challenge: the

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response from implicit content as it was outlined here is only accessible from a reliabilist framework and no independent reason for the inaccessibility of implicit content has been offered. Although it is not incoherent to claim that any accessible content is explicit, cases like George's at least suggest some sort of accessibility to implicit contents. It is up to the respondent from implicit content to argue such suggestions away. Moreover, the respondent from implicit content needs to make it plausible that expert beliefs concerning natural kinds tend to be implicitly involved in the production of expert perceptual beliefs, rather than explicitly and unconsciously tokened. So although the last response might be the least problematic for now, it is not problem-free. Hence, the perceptual learning problem is not fully solved and open for alternative solutions.[16]

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