

The Epistemological Role of the Body: A Lesson from Neuropsychology

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1

We contend that the distinction between the space of reasons and the space of causes – that is, the distinction between that which is often taken to be epistemically relevant and that which is not, or the distinction between spontaneity and passivity – fails to consider the body qua body and consequently masks its central epistemological role. The first thesis is ontological, the second epistemological. Although, we say something about the former, our main interest lies with the latter.

In regards to the body, partisans of the aforementioned cause-reason dichotomy have a choice: they can either situate the body in the space of causes or in the space of reasons. The first taxonomical arrangement robs the body of its intentionality, meaning, and significance. The second dictates that the body must either be endowed with representational content or, more likely, subsumed under the category of the mental. The cause-reason dichotomy allows for no middle grounds: the body is either a part of the world or a part of the mind. In no case, the body is considered in its own right. The purpose of the essay is to provide the reader with a *reductio ad absurdum* argument against this dichotomy. The objective, thus, summarizes as follows: since neither of the alternatives that the cause-reason dichotomy dictates are acceptable, the distinction must be rethought, and perhaps even abandoned.

The argument unfolds in two steps. First, we examine the behavior of patients suffering from visual agnosia and second, we show that the visuo-motor capabilities of these patients suggest that the body occupies a place which is neither that of reasons nor that of causes. The body, as it will be shown, cannot be assimilated to the space of reasons, for although the bodily behavior of agnosic patients is bestowed with intelligence, it cannot

be adequately captured by propositional attitudes.¹ Nor can the body be assimilated to the space of causes: although it is physical, it is normative; and although it is natural, it cannot be naturalized. If the present attempt to mark out a third space, a space which lies in between that of reasons and that of causes, is successful, then the notion of justification must be rethought. Justifications can no longer ignore the workings of the body, for they are neither purely causal, hence irrelevant to epistemological matters, nor are they purely propositional, hence adequately captured by beliefs or other propositional attitudes. The body therefore occupies a space which lies between that of causes and reasons, and epistemology, we claim, should take stock of this

2

Evidence for the existence of an in between space is found in studies and reports of patients who suffer from a disorder known as visual agnosia.² Accordingly, patients with this condition are unable to visually recognize simple everyday objects, despite exhibiting a variety of perceptual, linguistic, and intellectual abilities.³ Although the visual ability that makes possible object

¹By ‘adequately’ we mean that propositional attitudes play a constitutive role in the behavior of agnostic patients. Accordingly, a propositional attitude of the form ‘ W believes q ’ adequately captures the behavior of W only if W does ϕ in virtue of believing q

²With the exception of Bay [1953] and Bender and Feldman [1972], most neuroscientists and psychologists hold that visual agnosia cannot be explained *away* as a visual deficit. Accordingly, visual agnosia is considered to be the disorder which is the result of damage done to the ventral stream. This damage, nonetheless, leaves the primary visual cortex unaffected, and although, agnostic patients fail to recognize objects, this is not because they cannot ‘see.’ That is to say, the loss of recognitional capacity is not the result of cortical blindness. Support for this can be found in Ettliger [1956]. Farah [2004:2-3] cites numerous neuroscientists who support the claim that visual agnosia is not due to a visual deficit. She additionally notes that the attempt to explain away agnosia was motivated by a particular theory of vision, which holds that object recognition occurs in two stages which are undifferentiated: that of ‘seeing the object’ and that of ‘associating general knowledge with the visual percept’(3). If perception is understood in this light, then failure to recognize objects can occur either because of an impairment in vision or a deficiency in general knowledge. Since then, however, alternative physiological, neurological or functional accounts of vision have taken precedence. Now visual agnosia seems implausible to be explained away as a visual impairment. For a more detailed account see Farah [2004:introduction], and Bauer and Demery [2003].

³Farah [1999:181] provides a more systematic definition: visual agnosia is ‘the impairment of visual object recognition in people who possess sufficiently preserved visual fields, acuity and other elementary forms of visual ability to enable object recognition, and in whom the object recognition impairment cannot be attributed to...loss of knowledge about objects...[The] impairment is one of visual recognition rather than naming, and is therefore

recognition is present, object recognition fails to take place. The agnosic patient, for instance, can navigate space, avoid obstacles, hold pencils, and pick-up objects. Yet, s/he is unable to recognize an object, match or group together similar objects, describe basic features of objects – size, shape, or orientation – or even copy (that is, draw) basic visual stimuli.⁴

A number of cases of visual agnosia have been recorded and they all attest to these deficiencies.⁵ For instance, Benson and Greenberg [1969] report that their patient had sufficient visual abilities to identify colors, notice changes in the intensity of light, and even point out the direction in which objects were moving. Nonetheless, when asked to reproduce a simple shape, he consistently failed.⁶ Two of such attempts are shown in figure 1.

Similar phenomena are described elsewhere. Reporting on patient Mr S., Efron [1968:156] writes: ‘Mr S. can point with his finger to an object which is held before him. He can do this efficiently only if the object is moved before his eyes.’ As soon as the object is stationary, the patient is at a loss: ‘he does not appear to know what object he has been asked to look at; his eyes randomly scan the entire room and he appears to be “searching.”’ Landis et al. [1982:52] report a similar case. Their patient could recognize simple geometric figures only if he was allowed to trace them and only ‘if the point of departure for tracing was unimportant (e.g., circle, triangle).’ The patient could also read aloud slowly. ‘This “reading,”’ they write, ‘was accomplished by rapid tracing of letters, parts of letters or words with his left hand alone or with both hands...[When] movements of the fingers could

manifest on naming and non-verbal tasks alike.’

⁴The medical literature, following Lissauer, [1890] divides visual agnosia into two types: ‘apperceptive’ or ‘associative’ agnosia. In this essay, the use of the distinction is purely heuristic, and nothing depends on whether the distinction stands or falls. In fact, the documented study of H.J.A. might be used as evidence for arguing that the distinction is insufficient to cover all cases of visual agnosia (see Riddoch and Humphreys [1987]). Setting aside this complication, apperceptive agnosia can be described as the disorder in which failure of visual recognition occurs due to an impairment of visual perception which is nonetheless not an elementary (or low-level) visual deficit. In other words, the impairment of vision is not sufficient for failure in visual recognition. On the contrary, associative agnosia is the condition under which visual recognition fails mainly because the patient is unable to access relevant information about objects from memory. Our discussion is limited to apperceptive agnosia. The different types of agnosia and the ways in which they relate to different accounts of vision – for instance, to Maar’s [1982] account – are discussed in Farah [1999 and 2004] and Bauer and Demery [2003].

⁵In addition to the ones cited in the body of the essay, see also Alexander and Albert [1983], and Goldstein and Gelb [1918]

⁶Adler reports what her patient replied when asked to explain why it was so difficult to copy shapes and figures. The patient said the following: ‘when it is curved I should trace round. But I see other parts and I lose myself. Then I do not see the beginning any more’ (cited in Humphreys and Riddoch [1987:16]).

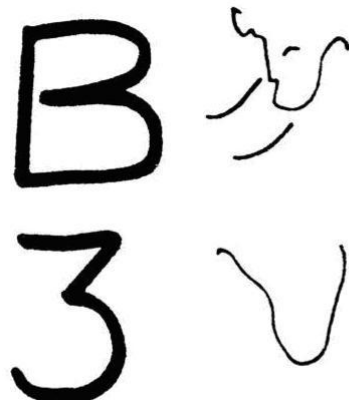


Figure 1: An attempt to reproduce the letter ‘B’ and the number ‘3’ by an agnosic patient; figure taken from Humphreys and Riddoch [1987:17]

be prevented...this abolished reading’ (ibid.).

Even a cursory reading of the medical literature on visual agnosia is enough to warrant the following two observations . First, it is undeniable that the disorder is impairing: patients cannot recognize, match, or report objects. Second, the cited findings of Efron [1968] and Landis et al. [1982] indicate that certain visuomotor abilities are not only preserved, but also utilized in order to alleviate some of the visual deficiencies.⁷ The preservation of visuomotor abilities is all the more clear in the everyday activities of agnosic patients. Adler [1944] comments on the behavior of her patient as follows:

At home...she confused the silver on the table. When getting dressed she had difficulties, confusing her underwear with her blouse and not getting her arms into the right sleeves. After the first three months, these errors did not recur(Cited in Humphreys and Riddoch [1987:17]).

Adaptability in the environment and preserved visuomotor abilities are common among agnosic patients. We are told of patient Mr. S., for instance, that he ‘could navigate corridors successfully with his wheelchair’ (Benson and Greenberg [1969:83]), and of another patient, R.C., it is reported that he could both ‘negotiate obstacles in a room’ and also ‘reach out to shake hands and manipulate objects’ (Campion [1987:208-9]).

These reports suggest a difference between everyday and other more abstract or intellectual tasks. This distinction is reinforced by Milner’s et al. [1991] findings. The patient under examination, D.F., experiences several difficulties. *Inter alia*, she fails to copy basic drawings, she is poor in

⁷Landis et al. [1982] report of their patient Mr X that he was able to identify letter and other shapes by monitoring his own hand movements while tracing them. For how not to interpret this observation see note 22.

discriminating between simple geometrical shapes, and she is unable to recognize letters, digits, or even faces. She can, however, recognize objects that she is permitted to explore tactually, and she can draw simple objects when they are retrieved from memory. Consequently, her ability to gather information from the sense of touch or from memory ‘did not reflect a general failure in accessing stored information about shapes and forms’ (Milner and Goodale [2006:124]). In a series of experiments, Milner et al. [1991] concentrated on the reaching behavior of D.F. and discovered that although she could not accurately describe or compare shapes, sizes, and orientations of objects, she was in possession of many motor skills, such as reaching out for, and grasping, everyday objects. ‘She is very good,’ they report, ‘at catching a ball,’ ‘negotiating obstacles in her path,’ and following a moving light with her eyes (Milner and Goodale [2006:128-9]).⁸

The experiments demonstrate a striking disparity between her ability to visually report, describe, or discriminate objects and her visuomotor ability to grasp objects. In one experiment, Milner et al. [1991] set up an apparatus which included a ‘vertically mounted disc in which a slot was cut’ and ‘on different test trials, the slot was randomly set at’ different angles (Milner and Goodale [2006: 129]). Then they asked D.F. to report on the angle of the slot or to match the angle by inserting her hand or a card into the slot. They summarize their findings as follows:

[W]e found that D.F.’s attempts to make a perceptual report of the orientation of the slot showed little relationship to its actual orientation and this was true whether her reports were made verbally or by manually setting a comparison slot. Remarkably, however, when she was asked to insert her hand or a hand-held card into the slot from a starting position an arm’s length away, she showed no particular difficulty...In short, although she could not report the orientation of the slot, she could ‘post’ her hand or a card into it without difficulty (ibid.).

⁸As it is the case with other agnosic patients, D.F. cannot be characterized as blind. Not only she has (limited) ability to discriminate between colors, but she can also reach and grasp objects with accuracy. In fact, the ability to catch a ball is indicative of the accuracy of her visuomotor behavior. As Noë [2004:88] writes, in relation to such an activity, ‘to experience the ball as moving in an arc is to experience it, precisely, as moving in such a way that to track it you would need to move your head in a characteristic way. The experience of a thing’s movements depends on your understanding of the sorts of sensorimotor contingencies mediating your relation to the thing.’ Notwithstanding issues about the exact meaning of ‘sensorimotor contingencies,’ catching a ball requires a certain ability which is undeniably missing from blind patients. For a more detailed description of D.F.’s abilities, see Goodale and Milner [2004].

The difference between the accuracy of the two methods is highly pronounced. Whereas conscious and deliberate judgment or matching yielded no accuracy, the visuomotor method was almost perfect (see figure 2).⁹ Milner and Goodale [2006] put forth a neurophysiological explanation that accounts for the discrepancy between perceptual reports and visuomotor ones. In line with Trevarthen [1968], Schneider [1969] and Ungerleider and Mishkin [1982], Milner and Goodale [2006] argue that their findings provide support for the ‘two visual systems’ hypothesis (see also Goodale and Milner [2004]). At the same time, Milner and Goodale reject Ungerleider’s and Mishkin’s claim that the distinction between the ventral and the dorsal stream should be understood as a distinction between pathways which process the ‘what’ and ‘where’: that is, respectively, object identification and object localization. Instead, they advance a functional distinction according to which the ‘structural and spatial attributes of the goal object are being processed by both streams, but for different purposes’: one for perception [ventral] and one for action [dorsal] (Milner and Goodale [2006:310,24ff.]). Milner’s and Goodale’s ‘two visual systems’ hypothesis thus holds that the visual system that furnishes us with visual experience is not that which also guides our motor behavior. Without access to the former, the patient will not be able to recognize shape, size, and orientation; yet, by having access to the latter, the patient will still be able to have limited bodily abilities. The ‘two visual systems’ hypothesis stands in opposition to what Clark [2001:496] calls the ‘experience-based control’ (EBC) thesis, namely, the view that ‘conscious visual experience presents the world to the subject in a richly textured way; a way that presents fine detail...and that is, in virtue of this richness, especially apt for, and typically utilized in, the control and guidance of fine-tuned, real-world activity’ (ibid.). D.F.’s case is a clear counter-example to the EBC thesis. The discrepancy between her perceptual reports and judgments on the one hand, and her action or engaged interaction with the world on the other, is undeniable. What guides her actions cannot be the richness of her visual field. She lacks such richness. Even the rudimentary ability to distinguish perceptually between basic shapes or forms is missing. But then one can legitimately wonder how it is possible for someone to perform a task so accurately, without being aware that things look *such-and-such*. How is it possible to perform skilled actions when the performance of these actions depends on size, shape, and orientation information missing from her perceptual awareness? The ‘two visual systems’ hypothesis provides a way out: what D.F. lacks is vision-for-

⁹The results hold only for basic shapes: D.F. was able to rotate and insert into a slot only simple objects. She could not perform the same task with T-shaped objects. See Goodale et al. [1994b].

perception, not vision-for-action. And only the former is conscious. That is to say, what D.F. lacks is not the relevant information, but rather conscious access to it. (see Milner [1997], Milner and Goodale [2006], Goodale *et al.* [1994a], Goodale and Milner [2004], and Jacob and Jannerod [2003]).

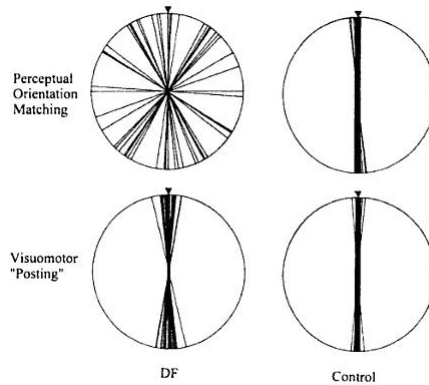


Figure 2: Comparison between perceptual matching and visuomotor posting; reproduction taken from Milner and Goodale [2006:130]

3

Despite its brevity, the above treatment of visual agnosia should suffice for present purposes. In this essay, we take no issue with the accuracy of the studies, nor with the validity of the ‘two visual systems’ hypothesis – both lie outside our jurisdiction. Our interest lies elsewhere: we are concerned exclusively with what D.F.’s case, and cases like it, can teach us once the reported disparity between perceptual orientation matching and visuomotor posting is accepted.¹⁰ Here is one lesson. (L1): Certain attributions which are usually considered as instances of the schema ‘D.F. knows that α is β ’ (S1), can only be understood in light of attributions which are instances of a rather different schema, namely, ‘D.F. knows how to ϕ ’ (S2), where ϕ contains information about the proposition ‘ α is β ,’ but does not fully determine it. The essay considers two such attributions: first, ‘D.F. knows *that*

¹⁰Kelly [2002] also discusses the philosophical significance of D.F.’s behavior. The reader is encouraged to compare his interpretation to the one provided here.

this slot is orientated at X degrees;’ and second, ‘D.F. knows how to put a card through *this* slot.’ We will argue that the latter is conceptually prior to the former. The aim is not to repeat Ryle’s point that know-how cannot be a species of know-that, nor to show the rather innocuous claim that in order to know *that* all even numbers are divisible by two, you need to first know *how* to formulate a thought. The claim is much stronger. D.F.’s case allows us to conclude that publicly accessible bodily behavior precedes propositional and conceptual knowledge. The case of D.F. is analogous to Sellars [1963]’s Myth of Jones. This is another formulation of (L1): knowledge, at least in this case, does not come solely from the inside, but rather arises as the result of the interaction between action and perception (albeit an unconscious perception). In other words, knowledge does not stream from the mental to the non-mental, but shines radially from the body outwards to the world and inwards to the mind. The body then, is of epistemic importance. Of course, there are differences between D.F. and the Myth of Jones. To mention only what is self-evident, in D.F.’s case, it is instances of propositional knowledge and not psychological concepts which are claimed to be theoretical entities. The scope of the thesis is also different. The claim that (S2) is conceptually prior to (S1) holds only for a very limited subset of such ascriptions. In fact, in what follows we try to show that the extension of this subset is at least one. There is at least one instance of (S2) which is conceptually prior to an instance (S1), namely, the pair mentioned above. Yet despite its limitations, D.F.’s case has a clear advantage over the Myth of Jones: it is not a myth.

But here is another lesson, very much related to the previous one. D.F.’s visuomotor abilities are not the effect of a judgment. That is, D.F. does not judge that the slot is orientated at X degrees and then act in a certain manner. The order is reversed: judgment falls behind action; sometimes it is altogether absent. D.F. just acts. But D.F. does not *just* act; her behavior is not a reflex-response to a certain stimulus. Rather, it is meaningful, purposeful, and normative. What the disparity between perceptual reporting and visuomotor posting makes evident is that D.F.’s behavior belongs neither to the spaces of reasons nor to the space of causes. This is the second lesson, (L2).

3.1

Let us now consider whether D.F. has knowledge of the orientation of the slot, and more precisely, whether she knows *that* this slot is orientated at X degrees. Before answering this question, a few preliminary considerations are in place. The answer depends upon at least two parameters: first, the relationship between perception and knowledge, and second, the definition of

knowledge. Evidently the two are interrelated: what constitutes knowledge has a bearing on how we understand its relationship to perception – and vice versa. Our examination, however, is exclusively one directional, for not only we start with the latter, but also we consider the former only in light of the latter. Our focus then, is whether D.F. knows *that* the slot (*this* slot, the one found in front of her) is located at *such-and-such* orientation. It helps to reformulate our objective in a more manner. This is the genus of which the previous formulation is a species: we are interested in examining whether *D.F. is in a state, such that her being in that state relates—not necessarily nomologically—to the orientation of the slot.*^{11 12} This reformulation of the question is intentionally ambiguous. On the one hand, the invoked notion of ‘being in a state’ is broad enough to rescue us from the threat of behaviorism. On the other hand, the reformulation allows us to take into consideration a plethora of differing accounts of knowledge: internalist or externalist, actual or dispositional. Accordingly then, the set of states deemed to be sufficient to demonstrate a correlation between the orientation of the slot and her being in such a state determines in what way D.F. knows the orientation of the slot. If the extension of this set is null, then D.F. lacks knowledge.

In accordance with at least one interpretation of what knowledge is and consequently, of what states should be taken as sufficient, the answer is rather obvious: not only does D.F. not know the orientation of the slot but moreover, she cannot even think about the present orientation of the slot. We will call this the Kantian account.¹³ It maintains that ‘thinking is cognition through concepts’ and concepts are functions: they order or unify

¹¹Perhaps, this account sounds too much like Armstrong’s [1973:75] ‘Thermometer Model of Knowledge’ and thus, can be accused of failing to capture what we normally mean by ‘knowledge.’ To alleviate this difficulty we add, in the form of a requirement, that D.F. must also be aware of the following two facts: she must be aware of herself being in such a state, and she must be aware that a correlation between the orientation and her being in this state holds. We take this additional requirement as unproblematic. In fact, the description found in Milner and Goodale [2006] and Goodale and Milner [2004] about what D.F. can do and what has learnt to do, provides precisely support for this.

¹²Considering D.F., an artificial restriction must be placed upon the nature of this state: it is restricted to sensual input (and feedback loops) of visual perception and proprioception. That is because what is of interest here is not whether D.F. can know using any sense modality whether the slot is in such-and-such orientation, but rather whether she can come to know the orientation of the slot visually and/or proprioceptively. Also, ‘being in a state’ need not be thought as a species of ‘being in an informational state.’ Cf. Evans [1982] and Dretske [1981].

¹³The concern here is not whether the so-called Kantian account is indeed an accurate description of Kant’s position. We have no interest in interpretational disputes. If the reader finds this interpretation of Kant to be flawed, then she is invited to think of this as a *Katnian* interpretation: one which comes close to, but does not repeat, Kant’s position.

‘representations under a common one’ (Kant [1998:A68/B93, see also B147]). The link between concept possession and thinking is strong: the former is a necessary condition of the latter (See also Fodor [2004]). Accepting the Kantian account forecloses the possibility of assigning knowledge to D.F. The only way that D.F. is able to report the orientation is by trying to put either her hand or a card through the slot. The ability that D.F. possesses is not one that is tied to deliberation. She does not first judge the orientation of the slot and then act in a certain manner. Neither judgment, nor conscious thought, nor visual phenomenology guides her hand. The claim ‘D.F. thinks *that* the slot (*this* slot) is orientated at 45 degrees,’ is not the antecedent of the consequent ‘D.F. rotates her hand appropriately.’ What the Kantian account requires cannot be realized by D.F.’s behavior. In fact, it is highly improbable that D.F. possesses the concepts ORIENTATION or SLOT ORIENTATED AT X DEGREES. Let us qualify this. It is highly improbable that she is in possession of these concepts, if concepts are related solely to thinking and not also to acting. A Cartesian/Kantian/or Fodorian view, according to which having a concept *C* is tantamount to being able to think of *C*s *qua* *C*s, precludes the possibility of D.F. being in possession of *C*, if *C* is the concept ORIENTATION or SLOT ORIENTATED AT X DEGREES. Agnostic patients such as D.F. cannot visually recognize objects as being of a certain kind and thus cannot match or group together similar objects. Usually, if a subject is not able to group together or match objects which are instantiations of a concept *C*, then the subject cannot think *C*s *qua* *C*s. What else is meant by thinking *C*s *qua* *C*s, if not being able to know which objects are instantiations of *C*s? D.F.’s case is even more telling. Consider what Milner and Goodale report after testing her ability to see fine detail:

We tested Dee’s ability to see fine detail...by showing her patterns of lines on a computer screen...She did as well as a visually normal person in detecting a circular patch of closely spaced fine lines on a background that had the same average brightness. Yet, remarkably, even though she could see that there was a patch of lines there, Dee was completely unable to say whether the lines were horizontal or vertical...Dee, unlike the person with myopia, could see the detail. It was the edges and outlines of objects that she couldn’t make out. Her difficulty in telling even horizontal from vertical lines shows just how extreme this deficit was...(Goodale and Milner[2004:8-9])

If horizontal and vertical lines are indistinguishable, then D.F. must lack any orientation-related concept. A world that ‘lacks shape and form’ is a world that is bound to lack some concepts. (ibid.)

3.2

Care must be taken here, for we could be accused of turning concept-possession into a pragmatic matter: to have a concept is to be able to determine its extension, that is, to be able to use it. There are those who see no difference between having and using a concept. For instance, Warnock [1949:80] writes that ‘if I cannot apply a concept, then I have not got it,’ and Bennett [1966:146] insists that ‘having a concept involves both being able to use it in “rules” and under favorable sensory circumstances, to apply it to its instances.’ This is in part what we are striving for: if for some concepts, their possession depends upon their use, and their use in turn depends upon the visuomotor abilities of the subject, then thoughts about objects which are instantiations of those concepts must be conceptually anterior to the exercise of certain actions.¹⁴ But this is a different account of concept possession from the one we set out to reject. To be in possession of a concept *C*, the Kantian account goes, is to think about *C*s qua *C*s.

This Kantian account, in fact, generates an objection against our claims. Surely, the objector will say, you are not arguing that D.F. lacks the concept ORIENTATION, for there is no reason to deny that D.F. can entertain thoughts of the sort ‘somewhere there is book which is orientated horizontally relative to the top surface of the desk.’ D.F. was not born with this condition. She can certainly imagine or remember books sitting or lying on desks. In fact, the concepts might be innate, the result of a nomic relationship (see Fodor[1998] or Millikan [2000]), or even obtained by social deference (Putnam [1975] and Burge [1979]). To this objection we offer three replies, but only the third will be considered in detail.

Reply 1. Concept-possession does not entail concept-use. Thus, to have the concept *C*, although necessary for having a thought about an object *O* which is an instantiation of *C*, is not sufficient. The employment of the concept is also required. One might have the concept, for instance, BLACK SOLID ICECUBE, but that does not mean that one entertains thoughts that are about the various instantiations of this concept.

a. *Objection to Reply 1:* But D.F. can entertain certain thoughts that are about instantiations of the concept ORIENTATION. For instance, D.F. can think that the painting in her childhood bedroom was orientated correctly. Thus, she employs and not merely possesses concepts. She just cannot entertain thoughts about instantiations of demonstrative concepts such as, THIS ORIENTATION, or THIS SLOT ORIENTATED AT X DE-

¹⁴By action we mean something more than the ability to draw various inferences (see Peacocke [1992]). Action, here, means bodily action.

GREES.

b. *Reply to counter-objection:* Why should we insist in calling this ability concept-use? If having a concept C is being able to think C s qua C s, should not one in possession of the concept under question be able to think all C s qua C s? Isn't this analogous to the claim that a blind person can entertain thoughts about various instantiations of the phenomenal concept RED?

c. *Second reply to counter-objection:* 'Concepts are public; they're the sorts of things that lots of people can, and do, share.' (Fodor[1998:28]; cf Prinz [2002:14ff], Rey [1983], and Peacocke [1992]). Yet, D.F.'s use of the concept ORIENTATION is private. If having the concept ORIENTATION is nothing more than thinking about orientations, what is there to guarantee that what D.F. has in mind is, in fact, a canonical instantiation of the concept ORIENTATION?

Reply 2. D.F. might have the concept ORIENTATION, but does not have the demonstrative concepts THIS ORIENTATION or THIS SLOT ORIENTATED AT X DEGREES. So the claim that there is an instance of (S2) which is conceptually prior to (S1) still holds.

Reply 3. D.F. does *not* even possess the concept under question, if the above account of concept-possession is accepted. There are several conditions which are typically considered as necessary in order for an agent to be in possession of a concept, and D.F. does not meet these conditions. The conditions can be met, to a certain extent, only if we postulate that concept-possession is fundamentally related to the visuomotor capabilities of D.F. In the next section, we focus on this reply and argue for both claims.

3.3

The possession and use of a concept can be thought as the application of a rule, for instance, the subsumption of a particular under a universal. Let us make this explicit.

- i. *Concept possession as a rule-following activity:* If a subject W possesses a concept C for a property p , then W must be able, other things being equal, to identify all instances of p .

This rule-following activity, however, must be in principle open-ended. This way of understanding concept-possession seems valid for both perceptual and

non-perceptual concepts.¹⁵ To possess the concept of RED, for example, is to be able, while other things being equal, to identify all red objects, namely, all particular instantiations of red.¹⁶ Hence, to possess a concept is not to possess it *here* and *now*, but everywhere and always. Nonetheless, D.F. can be said to be in possession of a concept, for instance the concept of X DEGREES OF ORIENTATION, only retroactively, namely, only after she had performed the appropriate bodily movements. But such dispositional approach to rule-following activity is hardly satisfying, for it violates the requirement of having an open-ended applicability. D.F.'s dispositions, like ours, are finite (see also Kripke [1982]).¹⁷

Are there good reasons to find this argument unconvincing? Here is one: it might be argued that the argument does not show that D.F. lacks, for instance, the concept of X DEGREES OF ORIENTATION. Instead, the argument demonstrates that concept-possession for D.F. is intrinsically linked to her visuomotor capabilities. Notice, however, that if such concession is made, then this account of concept-possession, one which is fundamentally intertwined with the workings of the body, diverges from a Kantian one. If we wish to hold to the former, the latter must be rejected. In fact, such admission and consequently, a rejection of the Kantian account, works for our benefit, since our aim is to show the epistemological role of the body. And this concession does the work for us.

If the argument from the finiteness of dispositions does not by itself convince the reader, additional considerations will help to reinforce our point.

¹⁵It is often argued that concept-possession admits to distinctions: between *nominal* and *determinate* possession (Bealer [1998]); between *merely grasping* and *having a sharp grasp* (Burge [1990]); between *merely possessing* a concept and *having an adequate conception* of it (Higginbotham [1998]); and finally, between *merely having an idea whatsoever* and *having a normal idea* (Crimmins[1989]). These distinctions should not alter the force of our main argument. For D.F., the possession of the concept ORIENTATION, for instance, is fundamentally intertwined to the workings of her body, and this holds regardless of how weak or strong the notion concept-possession is

¹⁶In line with Wittgenstein's [1953: §201ff.] considerations on rule following, the possession of a perceptual concept, need not be understood as the ability to match a perceived object with a description in mind. The identification of a particular instance of red, for instance, might be immediate and not the result of the application of *modus ponens*.

¹⁷Brandom's [1994] inferentialism, Sellars's [1962, 1963, and 1969] functional approach to meaning, and Peacocke's (1992: especially chapters 1 and 3) adherence to the 'Principle of Dependence' all yield similar results. If it is necessary (here, we ignore conditions of sufficiency) for the possession of a concept to have mastered the use of a word, then D.F. can be said to be in possession of a concept only retroactively, only after she performed the appropriate movements. As a consequence, the mastery of certain concepts, for instance the concept ORIENTATION, cannot be understood solely in terms of her linguistic behavior.

Consider a second condition:

- ii. *Concept-possession and discrimination*: If a subject W possesses a concept C for a property p , then W must be able to discriminate instances of p from instances of not- p .

To be in possession of the concept of RED, for instance, is not only to be able to recognize something as red when one sees red, but also to point out that a green chair is not an instantiation of the concept under question. But again, how would D.F. be in a position to have such discriminating abilities? Can she distinguish between a slot orientated at X degrees and one orientated at Y degrees? Such an ability requires D.F. to know the orientation of both slots at the same time. In other words, and in agreement to the general definition of knowledge sketched above, she must be either in two distinct states at the same time or, more probably, in a state which exhibits a correlation with both orientations. Although it is not hard to imagine how this can be the case for normal subjects, it is not clear how D.F.'s visuomotor behavior would give rise to such knowledge. For instance, if she matches the orientation of the left slot with her left hand, and the orientation of the right slot with her right hand, how will she consequently compare her two hands? Is her proprioceptive/kinesthetic sense capable of making such a comparison? Evidently, this is an empirical question, and we leave it as such. Yet even if an affirmative answer can be provided, difficulties still persist. First, D.F.'s discriminating abilities are obviously limited, and these limitations are a function of what D.F. can *do*. D.F. has two hands, and can only discriminate between, or compare, two orientations. But there is an additional and even more pressing issue here. Can D.F. compare between two orientations which are not *synchronously* present? Or alternatively, is D.F. capable of recognizing a previously perceived object? This brings us to a third condition.

- iii. *Concept-possession and re-identification*: If a subject W possesses the concept C , then W must be able to consistently re-identify an object O or property p as being an instantiation of C .

The link between recognition and concept-possession is indeed strong, so much so that it is often argued that the possession of a concept, sometimes even the possession of a demonstrative concept, entails a recognitional capacity.¹⁸ But if the possession of a concept, take for instance the concept

¹⁸See Crimmins [1989:287], or Millar [1991:501]. For an account that even that the possession of a demonstrative concept requires a recognitional capacity, see McDowell [2000:57ff], Brewer[1999:171], but also Kelly[2001] and Hopp[2008])

X DEGREES OF ORIENTATION, entails the capacity to consistently re-identify the orientation, and if this latter capacity must ‘persist beyond the duration of the experience itself,’ then we must conclude that D.F. lacks such recognitional capacity (McDowell [2000:57]). How is it that D.F. can compare whether *this* orientation (e.g., X degrees) is identical to an orientation which is no longer present? No obvious answer comes to mind. Here, we are not concerned with the fact that the faculty of memory might prove to be untrustworthy. Instead, we are concerned with how D.F. can keep track of what counts as a canonical instantiation of X DEGREES OF ORIENTATION. The possibility of D.F. being disposed in making certain kinds of mistakes cannot be so easily ruled out. Intersubjectivity perhaps alleviates this difficulty. Yet it does so, by demanding that concept-possession must be related to something more than thinking about the instantiations of the concept. In the case of D.F., a step into such an intersubjective and publicly accessible realm is at the same time a step away from the account of concept-possession which we set out to examine. Concept-possession must be related to action.

The ability to re-identify a concept is an ability which must be both context-dependent and context-independent. It depends upon the context insofar as it is *this* slot or this orientation that has to be re-identified. At the same time however, re-identification transcends the specifics of the situation: the concept applies over and over again, and the subject who is in possession of the concept must be able to reliably re-identify an object *O* as an instantiation of a concept *C*. In the case of D.F., the conjunction of these two requirements – a conjunction dictated by the very nature of the re-identification condition – does not hold, if concepts are what the Kantian account says they are. We do not deny that D.F. might be bestowed with a reliable mechanism that consistently picks out instantiations of the concept X DEGREES OF ORIENTATION. What needs to be underlined, however, is that this mechanism must be a function of her visuomotor capabilities. Recognition of a concept, a recognition that occurs only in the personal level, occurs only after the fact, only after she has performed the appropriate bodily movements. Therefore, the nature of her body influences or, even more strongly, constitutes the nature of her thinking, insofar as her ability to possess a concept is depended upon her ability to act.¹⁹

¹⁹Evans’s Generality Constraint (GC) also deserves attention. According to Evans, in order to ascribe to D.F. the thought ‘the slot is orientated at X degrees,’ and consequently credit her to be in possession of concepts SLOT and ORIENTATED AT X DEGREES or X DEGREES OF ORIENTATION, D.F. must be able to do at least the following: she must be able to think that ‘slot is *p*’, where *p* is any property of which D.F. knows, and also think that ‘*O* is orientated at X degrees,’ where *O* is any object for which D.F. has

3.4

If these ruminations are correct then it seems reasonable to infer the following two claims: first, D.F.'s behavior cannot be explained in virtue of, nor can be caused due to, an anterior judgment about the orientation of the slot. As was shown, D.F. does not possess the necessary concepts and consequently, she cannot judge about the orientation of the slot. Concepts arise too late in order to be a part of a judgment which is anterior to action. Second, if her behavior is not conceptualized by her, then it cannot serve 'as (or for that matter stand in need of) a justification and so ground or constitute knowledge' (Brandom [1997:122]). Jointly, the above considerations lead us to the conclusion that the visuomotor behavior of D.F. cannot be placed within the space of reasons, and can only enter this space once she reflects upon her bodily behavior. In fact, in certain cases the only way to enter the space of reasons is by first acting in *such-and-such* manner. This is (L1), and the argument summarizes as follows:

1. D.F. is in possession of a group of concepts $[C_1, C_2 \dots C_i]$, only because of her visuomotor capabilities.
2. Having a concept is a prerequisite for thought.
3. Therefore, D.F. cannot think about objects $[O_1, O_2 \dots O_j]$ nor properties $[p_1, p_2 \dots p_k]$, where $[O_1, O_2 \dots O_j]$ and $[p_1, p_2 \dots p_k]$ are the various instantiations $[C_1, C_2 \dots C_i]$, unless, and *only* after, she acts in a certain manner.
4. Therefore, there exists at least an instance of (S2) which is conceptually prior to (S1).

But, perhaps we have gone too far too fast, for we have not yet shown that D.F.'s behavior is a case of know-how, as (L1) requires. This, in fact, relates to the second lesson that D.F.'s case was supposed to teach us: not only can we not categorize D.F.'s behavior as belonging to the space of reasons, but we cannot relegate it to the space of causes either. Thus, what remains to be demonstrated is that D.F.'s behavior is an instance of know-how, and not the reflex reaction to a given stimulus.

a conception (Evans [1982:100-5]; see also McDowell [1998:438-9], Peacocke [1992:chapter 2], and Davies [1992]). Does D.F. meet the requirements put forth by GC? If having the concept C is not only a matter of thinking C s qua C s, but also a matter of acting in a certain manner, then the conditions advanced by GC are met, even in D.F.'s case. Of course, they are met only to the extent that D.F.'s visuomotor capabilities permit.

4

Being outside of the space of reasons usually implies being inside the space of causes. Here we wish to contest this view. Since Ryle, it has been customary for philosophers to draw a distinction between knowing-that and knowing-how, even if the only reason why they draw the distinction is to show that it is a false one.²⁰ Ryle insists that knowing-how cannot be assimilated to knowing-that. In fact, Ryle states something stronger than that, but his exact position is not important here. What is pertinent to our considerations is that Ryle, in his discussion of the distinction between these two types of knowledge, provides the conditions that need to be fulfilled in order for a type of behavior to count as intelligible. He writes:

Part of what is meant is that, when they perform these operations, they tend to perform them well, i.e. correctly or efficiently or successfully. Their performances come up to certain standards, or satisfy certain criteria. But this is not enough...To be intelligent is not merely to satisfy criteria, but to apply them; to regulate one's actions and not merely to be well-regulated. A person's performance is described as careful or skillful, if in his operations he is ready to detect and correct lapses, to repeat and improve upon success, to profit from the example of others and so forth. He applies criteria in performing critically, that is, in trying to get things right (Ryle [2002:28-9]).

Do the visuomotor capabilities of D.F. fulfill these conditions? We say yes. First, D.F. is able to put her hand through the slot. In this way, she *successfully* performs the requested task. Moreover, her performances, as Ryle requires, 'come up to certain standards,' for they match the visuomotor abilities of the control subject.²¹ But D.F., like other agnosic patients, does more than that. In a sense, she is able to learn from her mistakes, and she can recognize success from failure. Milner and Goodale report that 'during the course of several years of living with her profound visual handicap, D.F. has acquired, wittingly or unwittingly, tricks or adaptive habits to overcome her

²⁰For arguments that know-how is a species of know-that, see Carr[1979] and Stanley and Williamson[2001]. Hornsby [2004] and Noë [2005], have recently criticized Stanley's and Williamson's attempt to undermine the distinction.

²¹We have chosen not to describe D.F.'s behavior as one which fulfills (self-imposed or not) conditions of satisfaction. The use of those terms brings us very close to Searle's [1983] account of Intentionality and intention-in-action. The conditions of satisfaction of which Searle speaks are always propositional. Here we do not wish to take a stance on this matter, for we are not interested in the nature of satisfaction conditions, nor in the way in which she represents things. Rather, we wish to focus on the fact that she is able to act meaningfully, even when she fails to visually recognize objects.

perceptual difficulties' (Milner and Goodale [2006:144]). She is now able to monitor her visuomotor behavior in such a way as to inform her overt perceptual judgment.²² D.F. thus fulfills Ryle's requirements. Her visuomotor abilities are such that force us to ascribe to her behavior a certain type of intelligence, one which, as we have shown before, does not involve the use of concepts, nor does it require judgment.

The philosopher who above of all recognized the full significance of this type of behavior is Merleau-Ponty. He himself drew many philosophical conclusions from the study of an agnosic patient (Schneider). In *The Structure of Behavior*, he provides an example which makes evident the similarities between engaged action and the visuomotor behavior of D.F. Merleau-Ponty states:

For the player in action the football field is not an 'object,' that is, the ideal term which can give rise to a multiplicity of perspectival views and remain equivalent under its apparent transformations. It is pervaded with lines of force (the 'yard lines'; those which demarcate the penalty area) and articulated in sectors (for example, the 'openings' between the adversaries) which call for a certain mode of action and which initiate and guide the action as if the player were unaware of it. The field itself is not given to him, but present as the immanent term of his practical intentions; the player becomes one with it and feels the direction of the goal, for example just as immediately as the vertical and horizontal planes of his own body (Merleau-Ponty[1968:168]).

The similarities between Merleau-Ponty's example and the behavior of D.F. are clear. D.F. does not perceive the slot as an object. Rather, the slot is, as Merleau-Ponty comments, 'present [to her] as the immanent term of [her] practical intentions' (ibid.). The practical significance can in no sense be separated from her perceptual (and overall) experience of the world. D.F. does not perceive sensations but meanings. Yet, as Merleau-Ponty writes elsewhere, her 'perception is not an act of understanding,' if by understanding we mean the subsumption of a concept under a rule or another concept (Merleau-Ponty [2004:54]; Cf. Kant [2001:59, and 258]). D.F. does not perceive the slot as a slot, yet she is able to report when requested the orientation

²²This should not, however, let us to conclude that D.F. has trained herself to perceptually report on objects. Consider the following example. There is an object placed in a container and then the container is filled with an opaque liquid. We are then asked to determine the size of the object without however removing the object from the container. D.F.'s reports are perceptual only inasmuch as we perceptually report the size of the object immersed in the container by looking at the size of our grip after we have grasped the object. In both cases, the absence of certain bodily behavior entails an inability to report on the size and orientation of objects.

of the slot with her hand. Her behavior is intelligible, but this is not an *intellectual* intelligibility. We can say that D.F. has knowledge, but we cannot say that her knowledge is due to the possession of certain concepts; we can say that D.F. knows what she has to do (she opens doors, catches objects, etc.), but we cannot say that she has a goal or an end in mind. If her behavior amounts neither to a form of propositional knowledge, nor to an involuntary action, then what does it amount to? Merleau-Ponty puts it nicely: ‘It is knowledge in the hands, which is forthcoming only when bodily effort is made, and cannot be formulated in detachment from that effort’ (Merleau-Ponty [2004:166]). If the knowledge that D.F. possesses is explained in this way, then we need ‘to revise our notion of “understand” and our notion of the body’ (164). Merleau-Ponty again provides us with a suggestion of how to go about and do this: ‘To understand is to experience harmony between what we aim at and what is given, between the intention and the performance - and the body is our anchorage in the world’ (167).

The last claim is crucial. ‘The body is our anchorage in the world.’ It is the anchorage that Kantianism and coherentism lack. Meanings are found not only in the space of reasons but also in a space which lies between that of reasons and causes. It is not a novel kind of space, a space *sui generis* in regards to the other two. Rather, it is a zone which bridges the two. In other words, the body belongs to both spaces, but is reducible to neither. The behavior of agnostic patients such as D.F. is intelligible and this is a type of knowledge that is elusive to propositional attitudes: propositional attitudes provide only an after the fact explanation. What is missing, although clearly bodily or somatic, cannot even be captured by naturalized epistemology. In such attempts, the manner in which the body meaningfully and normatively interacts with the environment is lost.²³ Embodied activity is already meaningful, yet not necessarily conceptual; it is natural, but cannot be naturalized. In order for our behavior to become answerable to the world, there is no need to turn to our ‘second nature,’ as McDowell has suggested. We simply need to attend to our only nature, that is, our bodily nature.

²³Similar objections against naturalized epistemology can be found in Kim [1998] and BonJour [1994]. Replies and more sophisticated accounts of naturalized epistemology are given by Kitcher [1983], Kornblith [1982 and 1985], and Anthony [2004]. J.J. Gibson’s [1979] ecological and O’Regan and Noë (2001)’s enactive accounts of perception also seem to be guilty of failing to capture the normative element present in our behavior. Fodor and Pylshyn [2002] address this issue in regards to Gibson’s account; Carman (2005) does the same but in regards to O’Regan and Noë’s position.

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