Experience, Action and Affordance Perception

by

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Contents

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Summary

The aim for this thesis is to motivate, critically evaluate and defend the claim that subjects are able to consciously perceive the affordances of objects. I will present my protagonist, the 'Conscious Affordance Theorist', with what are two main obstacles to this claim.

The first of these is that affordance perception correctly understood refers only to a kind of subpersonal visual processing, and not to a kind of conscious visual experience. I claim that this results in an explanatory gap at the level of intentional action, which in order to correct we need to redefine the notion of affordance perception to include conscious as well as subpersonal affordance perception. Precisely, I claim that 'affordance awareness' has a crucial epistemological role to play, and that subjects must be able to consciously experience affordances in order to gain this awareness. In answer to this claim, I supplement the objection that affordance perception is defined as subpersonal perception to include the claim that any awareness subjects have of the affordances of objects they visually experience is due to them having thoughts about those affordances, and not visual experience of them. I then consider the Conscious Affordance Theorist's response to this supplemented account.

The second obstacle is the claim that conscious visual affordance perception is an impossible notion given that affordances are dispositional properties, and the dispositional properties of objects cannot be 'seen'. In facing this objection I look to the supporting claims and motivations that lie behind it, in order to find a way for the Conscious Affordance Theorist to challenge its central claim that affordances cannot be seen.

I end this thesis with an account of the Conscious Affordance Theorist's own positive position, and a consideration of how his account has the ability to provide for conscious affordance perception in the case of non-human animals.

Chapter 1: Conscious Affordance Perception

There is a strong intuition that the ability to visually attend to an object can be causally linked to the ability to act intentionally upon that object. For instance, being able to single out a cake within ones visual experience can causally enable one to act intentionally upon just that cake: it is surely because one can attend to the cake that one can form the intention to reach for it. Where controversy arises is over what exactly it is that conscious visual attention to the cake is thought to contribute to the act of reaching for that cake. There are roughly two schools of thought that emerge at this point. The first claims that the role conscious visual experience plays is to single out the cake as a target for action. The second claims that conscious visual experience not only singles the cake out as a target for action, it is also responsible for bringing about the motor coordination needed for a subject to successfully reach for that cake.

Although I will be arguing for a position within the first school, I will be striving for a meatier version of its central claim than other theorists have opted for. What I want to suggest is that part of the reason subjects are able to form intentions to act upon objects they visually experience, is that they are able to visually experience the affordances of those objects. Conscious visual experience does more than simply provide subjects with a target for their action, it provides them with an awareness of which actions are appropriate or inappropriate for that particular target. Furthermore, I want to suggest that it is by appeal to the affordances that

they visually experience that subjects are able to justify and explain their intentions to act upon particular objects in particular ways.

In this first chapter I want to concentrate on delineating what will and will not be meant by the phrase 'conscious affordance perception'[1]. My immediate concern is to head off prima facie objections to the coherence of 'conscious affordance perception' that result from allegiance to an imprecise definition of affordances. By refining the notion of 'conscious affordance perception' I also hope to encourage at this early stage some intuitive support for its existence, before moving on in subsequent chapters to hearing from its objectors.

The first introduction that should be made is to the very notion of an affordance. The concept of an 'affordance' originated with Gibson:

> "The *affordances* of the environment are what it *offers* the animal, what it *provides* or *furnishes*, either for good or ill…If a terrestrial surface is nearly horizontal (instead of slanted), nearly flat (instead of convex or concave), and sufficiently extended (relative to the size of the animal), then the surface *affords support*…It is stand-on-able, permitting an upright posture for quadrupeds and bipeds. It is therefore walk-on-able and run-over-able"[2].

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[1] Perhaps the initial thing to make clear about the notion of 'conscious affordance perception' that I want to develop is that I only intend it to concern visual perception. I think it is an interesting question whether tactile perception could make available the affordances of objects at the conscious level, and I see no obvious reason why it should not. For instance, if we agree that the sequential, haptic perceptions of a blind subject can build up what are standalone representations of whole objects, there is no reason to think the affordances of those objects could not also be represented. That is to say, after feeling the outline of a chair with his hand, a blind subject may be able to tell you there is something 'sittable on' in front of him. However, the relation between tactile perception and conscious affordance perception is indeed a further question, and one which I will restrict myself from dealing with in this thesis.

[2] Gibson, J.J. (1979) p.127.

To describe something as 'stand-on-able', 'kickable', 'jumpable' or 'graspable' is to describe it by appeal to a class of concepts that Campbell has termed 'causal indexical concepts':

"There are some terms that can be said to be causally indexical. Their reference depends upon the causal powers of the speaker, on just what the speaker is capable of doing" [3]

According to Jacob and Jeannerod[4] the key features of these causally indexical concepts are (a) that they are subject-relative and (b) that they are evaluative, such that they apply to a particular subject and to what that subject "is capable of doing", as Campbell puts it.

There is a distinction to be made between claiming that an environment affords subjects opportunities for action, opportunities that we describe in the language of causal indexicality, and claiming that subjects are able to perceive those affordances. Although a chair may afford 'sitting' for a human subject, it is a separate issue as to whether or not that subject can visually perceive this affordance. One thing that is certain is that Gibsonian affordances do not depend for their existence on being perceived, and quite rightly so: whether or not a subject visually perceives the affordances of his environment those affordances

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[3] Campbell, J. (1994) p.43.
[4] Jacob, P. & Jeannerod, M. (2003) p.205-208.

remain present in a de facto sense[5]. That is to say, a rock on a desert island can afford grasping for a human subject even if no human subject ever sees it. There is then a further distinction to be made within the notion of 'perceiving an affordance'. Specifically, there is a difference between claiming that affordances can be perceived at a subpersonal level of visual perception and claiming they can be perceived at a personal level of visual experience. Whether or not Gibson himself intended affordances to be available to conscious visual experience, this is exactly the proposal I am interested in. Precisely, the proposal that subjects can visually experience balls as 'kickable', puddles as 'jumpable', cakes as 'reachable' and wine glasses as 'graspable' and so on and so forth[6]. Prima facie to some this will be a controversial proposal, given that 'affordance driven action' is normally something we think of as involving the absence of conscious or personal level intentions, rational decisions and actions. Although I will happily agree there is such a phenomenon as subpersonal affordance perception, what I will deny is that it suffices to exhaust the general notion of affordance perception.

Let us now begin the task of defining 'conscious affordance perception', and in doing so begin with an objection that suggests there might be something slightly absurd about the notion that conscious visual experience contains affordances. This objection is one that John Campbell has raised towards the traditional

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[5] There are three dimensions of subject relativity which should be kept apart here, as only one concerns me. Affordances are subject relative insofar as they exist only relative to a subject, i.e. something is graspable for someone or some type of being. However, they do not depend for their existence on being perceived by a subject. They can exist without being seen, and this is the point that I am concerned to press. Affordances also do not differ according to the needs or whims of a subject. This last point is arguably what sets Gibson apart from traditional Gestaltist accounts such as Koffka, K. (1935) and his concept of demand character.

[6] Or as Eilan puts it: "when objects are represented as liftable, places within reach … shapes as graspable, ditches as leapable, and so forth." Eilan, N. (1995) p.347-8.

Gibsonian claim about affordance perception, which Campbell interprets as a proposal for conscious, visual affordance perception.

The Invisible Object Objection

With the aim of exposing its incoherence, Campbell considers what it would be like if our fundamental visual experience of objects was to be characterized by what those objects afford[7]. What he presses is the dependence of this view on the claim that objects will always afford us something. To bring out what he sees to be the absurdity of such a claim he considers a case where we want to say that we visually encounter an object, whilst failing to see it as affording anything:

"suppose, for example, that an unfamiliar piece of apparatus appears on a workbench. I have no idea what this thing is for. I don't know if I can touch it – maybe I will be electrocuted, or the thing will blind me, if I do that. Or maybe it is simply the latest kind of television, or a paper weight. So I don't see it as affording anything in particular. In that case, by Gibson's theory, the thing should be simply invisible; I should be able to see it only when I am told what it is for."[8]

I will call this the 'Invisible Object' objection. It contends that if we encounter objects in terms of what we know them to afford, then we have no reason for supposing that we would have conscious visual experience of an object whose

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[7] This is the view he attributes to Gibson. Campell, J. (2002) p.143-144.
[8] Campbell, J. (2002) p.143-144.

affordances were unknown to us. An object whose affordances are unknown to us should be "simply invisible". As Campbell rightly states this is a counter-intuitive conclusion about our visual experience of objects. We can, and do, have conscious visual experiences of objects without knowing what those objects are for.

Nevertheless, I think there are two independent objections that we can make to the Invisible Object objection. The first objection concerns what exactly Gibson is committed to by saying that we visually experience affordances. The second concerns how visual experience of affordances is being conceived.

Firstly, if this is what Gibson meant to claim, that all we see are the affordances of objects and that we never visually experience the categorical properties of those objects, then his view certainly entails a kind of unwelcome pragmatism about the contents of visual experience. That is to say, if a subject were only to see objects in terms of the functions and activities those objects afford him, he would fail to have an awareness of the mind independence or objectivity of those objects. In fact, he would fail to see physical objects at all, given that all he would visually experience would be the presence of various 'affordance features'. As John Campbell has convincingly claimed, this would entail that such a subject would lack the conception of an objective spatial world[9], given that an appreciation of the objectivity of objects supposedly grants a subject with an appreciation of the objectivity of space. For this subject, the world would exist only insofar as it afforded him opportunities for action. Campbell is right then that if Gibson is

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[9] His claim is that having a grip on a spatially connected mind independent world requires the subject to give causal significance to that space, above and beyond the causal significance it holds for his own actions. For Campbell this understanding comes from having a conception of the objective causal connectedness of objects. See Campbell, J. (1993).

committed to the claim that all we are see are affordances, Gibson's account is not one that we should be rushing to support.

There is however no obvious reason why we should restrict ourselves to this reading of the claim that subjects visually experience affordances. Why should conscious perception present only the affordances or the categorical properties of objects? Why can it not make a subject aware of both? Although I want to propose that subjects can visually experience the affordances of objects it will be no part of my proposal that visual experience is solely reserved for affordance perception. My aim will be to claim that affordances are just one kind of property that objects possess, and as such affordance properties offer just one contribution to visual experiences of those objects. In other words, I will not be denying either that subjects see the categorical properties of objects, or that they can see an object without seeing any of its affordances. The question of how and when subjects do experience the affordances of objects will be something we consider in Chapter 5. All I want to make clear at this point is that my account should not be threatened by the anti-pragmatism objection inherent to the Invisible Object argument.

The second objection that can be levied against the Invisible Object objection concerns how it is that 'affordance perception' is being cashed. In setting up the Invisible Object case Campbell employs a characterization of conscious affordances as functional or cultural properties of objects: being a paper-weight, being a television. This might seem unobjectionable given that labeling an object with an artifact concept normally indicates that that object 'affords' certain activities or functions. That is to say, claiming object *x* is a television indicates that

it 'affords watching'. However, the problem with proposing these cases as being definitive of conscious affordance perception is that it establishes a link between having knowledge of artifact concepts and being able to experience affordances. This is why Campbell's objection seems tempting: if I don't know how to use *x* surely I can still see it? For instance, I may not have the artifact concept 'electric shaver', but surely I can still see that shaver? According to this characterization of affordances a subject does not visually experience an affordance simply by looking at an object, he must have in place a certain kind of (perhaps quite sophisticated) knowledge about what kind of artifact that object is. This is not what I intend to mean by the term 'conscious affordance perception'[10], and hence I think it would be a mistake to condemn the notion of 'conscious affordance perception' on the basis of this narrow definition. What I propose to do is separate what are two different kinds of visual experience[11]: seeing an artifact, where this entails having a grip on the appropriate artifact concept, and seeing a basic affordance, where this entails seeing an object as 'liftable', 'reachable', 'kickable' and the like. To bring out the difference between these two kinds of visual experience, consider the following example.

Bill knows that object *x* is a grenade; Ben does not. Object *x* appears on the floor next to Ben. On the picture Campbell rejects, only Bill will be able to see the

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[10] It is not obvious that this is what Gibson meant either. Although some examples of affordance perception that he gives do seem to rely on forms of artifact knowledge: that a mailbox affords posting of letters, others do not: that a flat surface affords support. You may have to know about the postal system prior to posting a letter, but you don't need to have any knowledge of what 'surfaces' are to see that one affords you support. See Gibson, J.J. (1979), especially Chapter 8 'The Theory of Affordances'.

[11] Whether or not the subject actually 'sees' that something affords a complex function like being a television is an interesting question, but it is not mine. I will be taking it for granted that subjects can have visual experiences that can be imbued with artifact concepts if they have a grasp of those concepts.

grenade, as only Bill possesses the artifact concept 'grenade'. What Campbell is right to press is the intuition that this cannot be right: that Bill and Ben surely share a basic visual experience of object *x* regardless of whether or not they know of any cultural functions of *x*. That there is a shared or common element to their visual phenomenology is surely right. However, what is unclear is how this common phenomenology should be cashed, and in particular, how it should be cashed once we have tied the notion of affordance awareness to having knowledge of artifact concepts. If we hold fast to the claim that whatever is in common between Bill and Ben's visual experience is, by definition, not the awareness of an affordance, then this leaves Bill and Ben in a rather sticky position. If Ben doesn't see the affordance of the grenade, we have no reason to say that he can see what to do with that grenade. Without knowing that the object is a grenade, and so knowing that grenades are to be picked up and thrown immediately whenever they land beside one's feet, Ben would be unable to act. This surely cannot be right: what Ben sees is that object *x* – whatever it is – affords throwing, kicking, nudging and so on and so forth. If Bill yells with urgency at Ben to throw the object back through the window, would we expect Ben to refuse on the grounds that he doesn't know what the object is for? I think in this case we would be quite understanding of Bill's frustration. If this is right, then the common visual phenomenology between Bill and Ben should involve the fact that they both experience the basic affordances of object *x*: they both see an object which affords 'throwing', for instance. If we agree that despite lacking the artifact concept 'grenade' Ben can

see object *x* as affording 'throwing', we admit of a distinction between possessing artifact concepts and having basic affordance perception.

We can offer further support for the distinction between seeing what an object affords and having knowledge of artifact concepts by approaching it from the reverse direction: consider a subject who knows that a glass anemone in front of him is supposed to be a paperweight. He is sure of what the cultural function of the object is, but as yet he cannot see how the object affords picking up: it might take him considerable reflection to see where to put his fingers around this awkward ornament in order to lift it. In this case, seeing a basic affordance of the object seems a separate matter to possessing artifact knowledge about that object.

The second objection to the Invisible Object objection then is the way that it cashes the notion of a conscious affordance: it confuses conscious perception of basic object affordances with the possession of knowledge about artifacts. Although possessing artifact knowledge no doubt facilitates our successful engagement with objects, it is not a pre-requisite for seeing those objects as affording basic contact activities.

So how does this new distinction apply to the case of Campbell's 'Invisible Object'? Reconsider Campbell's apparatus using a simpler definition of an affordance, one that does not require the subject to be able to attribute an artifact concept to that apparatus: it seems clear that this apparatus, whatever it might be, will look to the subject as though it affords touching or picking up. The fact that he might be scared to touch it, as Campbell suggests, and hence choose not to, is neither here nor there: the perception that it could be touched is what causes the

subject to deliberate about touching it. It certainly does seem unfeasible to suggest that a normal subject could have uninterrupted visuospatial awareness of an object in his visual field and yet still be clueless as to whether or not that object afforded him any kind of basic contact activity (i.e. picking up, grasping, pushing, jumping).

A Case of Conscious Affordance Perception

Humphreys and Riddoch document a neuropathological case that I want to suggest speaks to both of the claims made so far in this chapter: firstly, that there is such a phenomenon as basic conscious affordance perception, and secondly that basic conscious affordance perception is to be delineated from the ability to apply artifact concepts. The case at hand involved a unilateral neglect patient MP, undertaking an object selection task. What Humphreys and Riddoch found was that MP was most proficient at pointing to a target object amongst an array of distractors when the identity of that target object was given to him in the form of an action description that could be met using the target object (i.e. "find the object you could drink from" p.84). Although standard visual search tasks in psychology identify target objects using colour or shape properties, MP's search was much slower when based on such categorical target identifications (i.e. "find the red object" or "find the cup" p.84). As Humphreys and Riddoch put it:

"MP's search was consistently faster and more accurate for targets defined by action (either by verbal description or by gesture) than for targets defined by name (and even by their colour or by perceptual features from another functionally equivalent exemplar)" [12]

In other words, if the target object were a red cup, MP would be faster to pick out that cup if he searched for 'the object he could drink from' rather than 'the red object' or 'the cup'. For Humphreys and Riddoch the case of MP shows us "that search can be based on intended actions and not just on the perceptual properties of objects", or more technically, "that action templates can influence visual search and selection independently of perceptual templates of targets". The main point for Humphreys and Riddoch is that MP demonstrates that visual search is not restricted to the use of perceptual templates that involve searching for a target by way of its categorical properties. The main point of this experimental finding for our purposes is that MP seems to provide evidence of basic conscious affordance perception. There are two points that support this claim. Firstly, in the cases where his search performance was facilitated, MP was clearly not searching for the object by virtue of its categorical properties: if he were using perceptual templates his search performance would have been impaired, not facilitated. Secondly, there is reason to think that in the cases where MP used an action template to search for the target his facilitated search ability was not solely the result of subpersonal perceptual processing. The reason for saying this is that MP was required to 'point' to the target object, an activity we think of as being intentional and

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[12] Humphreys, G.W. & Riddoch, M.J. (2001) p.89.

deliberate[13]. As MP was deliberately pointing to an object we would expect him to have conscious awareness of why that object rather than any other in the array satisfied the task demands. In other words, we would expect MP to be able to account for why he singled out a particular object as satisfying the action description he was instructed with. Furthermore, MP was not simply pointing without knowing what he was doing, as according to Humphreys[14] MP was consciously aware that the target object he pointed to satisfied the action description that he was given. What I claim to be the most natural explanation is that MP was able to single out objects on the basis of action descriptions by seeing those objects in terms of what they afforded him. He searched for an object with a particular affordance. In the case of the red cup, he would see the object as affording him drinking, and so would point to that cup when instructed to find 'the object he could drink from'. If this is right, then MP does provide evidence for the claim that we can consciously perceive the affordances of objects[15].

So much for MP providing an illustration of basic conscious affordance perception. How then does MP illustrate the claim that basic conscious affordance perception should be delineated from seeing objects as artifacts? A first indication that MP's performances support this delineation is that he did not show a

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[13] Humphreys, G.W. & Riddoch, M.J. (2003) p.209 for the beginnings of a discussion of this issue.
[14] Personal communication. I asked Glynn whether or not MP was acting like a blindsighter such that he found the right target object, but lacked any awareness of how he got this selection right. If this were the case, MP should not be interpreted as a conscious affordance perceiver. However Glynn thinks that although the actual mechanics of MP's search may have involved a subpersonal matching of the target with the action, he was conscious of picking out the object that satisfied the instructed action. On my account, MP's awareness that he had the 'right' object is only to be explained by his conscious perception of that object's affordance, and not its categorical properties.
[15] One could restrict oneself to the minimal claim that although MP may not have selected objects using his conscious affordance perception, he could still see the reason why his subpersonal system attracted him to one object over another by consciously experiencing that object's affordances.

facilitated search effect when searching for the target object by 'name', and so it seems right to suggest that he was not singling out objects on the basis of which artifact concepts applied to them. However, another experiment that Humphreys and Riddoch performed with MP makes the distinction between conscious perception of affordances and knowledge of the semantic functions of objects even clearer. In this experiment Humphreys and Riddoch presented MP with pictures of objects and 'non-objects': structures that could be made to exist but which currently did not exist as any definable object. MP's task was again to single out the object with which a certain action could be performed. What the experimenters found was that MP was equally able to point to objects and non-objects on the basis of an action that could be performed using those objects: "[f]or action-defined targets, there was no difference for objects and non-objects"[16]. In other words, MP was just as fast to single out targets to which no artifact concepts applied as he was targets that were obvious artifacts, on the basis that the non-objects looked as though they would afford him such things as "a 'twisting' action"[17]. The fact that MP could search successfully for non-object targets at all shows that his facilitated 'search-by-action' effect was not a matter of searching for artifacts.

Elsewhere Humphreys himself makes reference to a distinction between complex object involving activities which rely on cultural, contextual or associative knowledge on the part of the subject, and simple object involving activities which

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[16] Humphreys, G.W. & Riddoch, M.J. (2001) p.86.
[17] ibid. p.86. To give an example, in the case of a 'twisting' action the kind of artifact used was a hexagonal metal 'nut'.

involve a subject responding only to the visual properties of objects. The latter he calls responding to affordances:

"in addition to being based on contextual and associative knowledge about objects, action selection is influenced by 'affordances' derived from the visual properties of objects."[18]

To bring out this point of how a subject is capable of seeing how to act by observing basic structural properties of an object Humphrey's employs the example of an olive pitter. He suggests that although people might remember that the device is for use with olives, and so recall how to use it by accessing this knowledge, this is by no means a pre-requisite for seeing how to interact with the pitter:

"you might use it correctly, even without having encountered such an object before, because its structure indicates directly the possible actions that may be performed (i.e. you are influenced by the object's 'affordance' for action)"[19]

Although Humphreys isn't automatically committed to the idea that the basic affordance perception he describes involves consciousness there is reason to think we should develop his considerations this way. In discussing the olive pitter Humphreys claims we see that "the joint…constrains the arm so that it may only

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[18] Humphreys, G.W. (2001) p.408. This paper also serves as a good summary of Humphreys' view on the difference between 'semantic' and 'affordance based' routes to action.
[19] ibid. p.408

be pushed down"[20] and so on. This is surely best understood, and perhaps only understood, as a report of visual experience: we 'see' that the joint constrains the arm and so on and so forth, and such musings are causally influential in our decisions about how to interact with the pitter.

An additional empirical approach that is worth mentioning because it may shed more light on the claim that the visual properties of objects can suggest to subjects basic actions that can be performed with them is the neurological syndrome of 'action disorganisation'[21](ADS). ADS patients are able to use objects in ways that are obvious from seeing the spatial structure of those objects: they can pick up mugs and fill beakers with orange juice, etc. What they are unable to do is combine these kinds of simple actions into more complex action schemas. So although a patient might be able to pick up a mug simply by looking at it, and even be able to pour water into it, that patient may not be able to sequence these simple activities into a schema that would allow him to make a cup of tea. What seems to be missing is the ability to employ a kind of functional schema that is separate from the ability to perform simple, affordance based actions. In the case of such subjects it seems we can at least identify a kind of basic conscious affordance perception that operates separately from more complex forms of knowledge or planning.

The claim that has been developed so far is this: visual experience of an object can make a subject aware of basic actions that can be performed with that object, and this is because the subject is able to visually experience the basic affordances

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[20] ibid. p.408
[21] Humphreys, G.W. & Forde, E.M.E. (1998)

of that object. Experiencing a basic affordance is different to having cultural or high level functional knowledge about how an object works, what that object is, or what that object is for. Basic affordances involve only the simple observable properties of objects: their size, shape, orientation, depth, texture and so on. Although for someone with knowledge of its function, a CD player remote affords the switching on of classical music, this is not a basic affordance of that remote. Its basic affordances are things like being graspable, throwable, reachable and (unfortunately if you are angry) smashable. From this point onwards, my discussion of conscious affordance perception will be a discussion and a defense of this kind of basic affordance perception.

Conscious Affordance Perception & Subjective Perspective

The last thing I want to consider in this initial characterization of conscious affordance perception is the fact that it shows sensitivity to the perspective of the perceiver. Both his psychological and spatial perspective can causally affect whether or not a subject consciously experiences a particular affordance of an object.

Whether or not Gibson is right that "the basic affordances of the environment are perceivable and usually perceivable directly, without an excessive amount of learning"[22] is a large developmental question and one that is a little beyond our context. However, we can ask the subtler question of why it is that a particular subject will be inclined to see any one affordance on any given occasion of

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[22] Gibson, J.J. (1979) p.143

looking. I hope to give this question a thorough treatment in Chapter 5, but for now it will suffice to say that the affordances a subject consciously perceives at any one time can be influenced by his intentions, desires, wants, needs and even emotions. What a subject is looking to achieve with an object will influence which of that object's affordances he will consciously perceive. To be clear, the actual affordances of the object do not change with the subject's desires or intentions, but his attention to one affordance over another can be subject to his psychological state.

What then should we say about a subject's spatial perspective and the effect it can have on his conscious affordance perception? A further experiment with MP, the neuropathological patient of Humphreys and Riddoch, revealed that MP's facilitated search effect was sensitive to the spatial orientation of the target object. That is to say, there seemed to be an effect of visual perspective on his conscious affordance perception. In this experiment, MP was again required to search for objects based on various task instructions, but this time the experimenters rotated all of the objects in the display so that they 'faced away' from MP: all of the objects had obvious 'handles' which would, in a normal situation, provide the means of interacting with those objects (i.e. a digging trowel) and it was these handles that now pointed away from MP. In the experiments we considered above, all of the objects in the array were positioned such that their handles faced towards MP, and so they would have been immediately graspable for him should he have been asked to facilitate an instructed action. Although in a de facto sense the 'affordances' of the objects remained when they were rotated, insofar as MP

remained physically capable of using the objects regardless of their handle orientation, his facilitated search effect was reduced. That is to say he became less proficient at selecting a target object in terms of an action he could perform with that target, when the handle of the target faced away from him. This was not because the objects became harder to recognize: his ability to pick out an object by its name did not significantly differ across the handle-toward and handle-away conditions, and so "change in orientation did not affect the name condition"[23]. In essence, the results show that asking MP to find the object 'he could dig with' would be no better than asking him to find the 'trowel', if that trowel had its handle pointing away from MP. As Humphreys and Riddoch suggest, "affordances for action are reduced when objects are not oriented appropriately"[24]. Similar effects of object orientation on affordance perception were found in a study where perceived affordances of cups were actually found to distract a subject, ES, from following task instructions. Once the cups she was being asked to grasp in particular ways were turned upside down, and therefore were displayed in an unfamiliar orientation, the distracting affordance perception no longer occurred[25]. It seems to be the case that seeing an object as affording a simple kind of contact activity (jumping, twisting, punching, reaching, grasping) may be sensitive to the spatial perspective from which the object is seen. Although this effect is no doubt less dramatic in the case of normal subjects, we can imagine cases where our conscious affordance perception is sensitive to our spatial perspective. Firstly,

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[23] Humphreys, G.W. & Riddoch, M.J. (2001) p.86.
[24] ibid. p.86
[25] See Humphreys, G.W. & Riddoch, M.J. (2003). This study itself receives greater treatment in Chapter 5, where it is used to demonstrate an instance of dissociation between conscious visual attention and intention.

consider standing at the end of a long jump running track: from where you are the whole sandpit appears easily jumpable. Nevertheless as you approach and your spatial perspective starts to change with regards to the sandpit, the affordance you once experienced disappears, and the sandpit that you now see before you no longer looks jumpable at all. Similarly, you might watch someone attempt to jump a large puddle which, from your perspective, they have no hope of crossing. You can make sense of the fact that from their perspective the puddle looked jumpable, perhaps as a trick of the light or something similar. It is also easy to imagine how an affordance property could be simply 'hidden' from a subject through an effect of his or her spatial perspective on an object: consider someone who regularly carries a spiky cactus to the sink for watering, and unbeknownst to this person the cleaner has knocked the cactus, rotating it slightly. Upon subsequently trying to pick up the cactus the person can no longer see where she normally puts her fingers: she can no longer see how the cactus is 'pickupable'. Yet by simply twisting the pot back to where it is normally oriented, the affordance once again becomes visible.

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The aim for this thesis is to motivate, critically evaluate and defend the claim that subjects are able to consciously perceive the affordances of objects. I will present my protagonist, the 'Conscious Affordance Theorist', with what are two main obstacles to this claim.

The first of these is that affordance perception correctly understood refers only to a kind of subpersonal visual processing, and not to a kind of conscious visual experience. I claim that this results in an explanatory gap at the level of intentional action, which in order to correct we need to redefine the notion of affordance perception to include conscious as well as subpersonal affordance perception. Precisely, I claim that 'affordance awareness' has a crucial epistemological role to play, and that subjects must be able to consciously experience affordances in order to gain this awareness. In answer to this claim, I supplement the objection that affordance perception is defined as subpersonal perception to include the claim that any awareness subjects have of the affordances of objects they visually experience is due to them having thoughts about those affordances, and not visual experience of them. I then consider the Conscious Affordance Theorist's response to this supplemented account.

The second obstacle is the claim that conscious visual affordance perception is an impossible notion given that affordances are dispositional properties, and the dispositional properties of objects cannot be 'seen'. In facing this objection I look to the supporting claims and motivations that lie behind it, in order to find a way for the Conscious Affordance Theorist to challenge its central claim that affordances cannot be seen.

I end this thesis with a development of the Conscious Affordance Theorist's own positive position, and a consideration of how his account has the ability to provide for conscious affordance perception in the case of non-human animals.

Although the central aim of this thesis, as with any thesis, is quite narrow, the project itself sits on the interstices of several well-founded and rigorous areas of debate in philosophy. In particular, debates about the nature of perceptual experience, the rationalization of intentional action, and the relationship between both of these and self-awareness. What it is that a subject sees when he looks at the world, how he goes about acting on that world, and whether his perceptual experience informs him of his possibilities for action within that world, are all central issues at work in this thesis.

Before we thrust ourselves into the arguments, a word of caution about this and any other topic dealing with the nature of perceptual experience. When debates arise over the character of perceptual experience, it seems unusual that there is a debate to be had at all. That is to say, what is more obvious to us than what it is like for us to see the world? How could we be convinced that we should correct our common sense conception of our visual phenomenology in the face of theoretical argument? To a large extent we could not, and indeed perhaps we should not, be so convinced. However, if this is right, then surely arguments involving the nature of visual phenomenology will be destined to reach deadlock: people either agree with an account of what their visual experience is like, or they refuse to accept it. There are no further negotiations to be had, as it were. This however cannot be acceptable: the very fact that we have situations where theorists disagree over the nature of visual experience suggests that the matter is up for debate. That is to say, that there is more than one way to interpret visual phenomenology. If that is right, then one option for either side of the debate to

take is to claim that the other side offers only a confused account of visual phenomenology. What this suggests is that one party is not automatically 'right' about their phenomenology; that they are perhaps overlooking or ignoring something important about what it is like to see the world. As Mike Martin says of arguments about visual phenomenology "[t]he persistence of disagreement would suggest that either the inner lives of philosophers are much more varied than we previously had reason to suspect, or that at least one party to the debate must be deeply confused"[26]. In my case, the aim will be to show that those who oppose the notion of conscious affordance perception are, in their own ways, deeply confused about visual phenomenology.

In the following chapter I introduce what I call the first obstacle to conscious affordance perception, the claim that affordance perception is to be defined as a matter of subpersonal perception. In response to this claim I present what I see to be the strongest argument for the reality of conscious affordance perception: that it is only through consciously perceiving the affordances of objects that subjects are able to form and explain their intentions to act in particular ways upon objects they visually experience.

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[26] Martin, M.G.F. (1998) p.158.

Chapter 2: Subpersonal Affordance Perception

According to Humphreys, there exists a "direct link between the perceived visual properties of an object and an action that may be performed with it"[1]. As it stands, this direct link provides us with a minimal definition of affordance perception: the visual properties of an object can be 'linked' to an action that is afforded by that object. The question is how we are to understand this link, and in particular whether we should say that from a perceiver's point of view, this 'direct link' functions within or without consciousness. In Chapter 1 I introduced a position which says the direct link happens within consciousness, such that subjects are able to experience objects in terms of their affordance properties: cups can look reachable, puddles can look jumpable, and so on and so forth. What I want to do now is introduce what is perhaps the more prevalent position on affordance perception, which claims that this 'direct link' between vision and action is to be exhaustively cashed at the level of subpersonal visual perception.

Although everyone might agree that something like a 'direct link' exists between the visual properties of objects and actions that can be performed using those objects, not everyone agrees that agents have or could have experiential awareness of this link. This is not the same as claiming that subjects cannot perceive affordances. On the contrary, one might claim that affordance perception occurs whilst denying that affordance perception is accompanied by any kind of

experiential awareness on the part of the perceiver. According to this 'subpersonal' view of affordance perception, when in common parlance we claim of a particular wine glass that it is 'within reach' or 'graspable', we are making reference to properties of that glass which we cannot visually experience. That is to say, we do not succeed in referring to the affordance properties of the glass through being visually acquainted with them. Of course we are still able to say of a particular glass that we know it to be within reach or graspable, but we should not claim to know this on the basis of our conscious visual experience of those affordances. On this view, what it means for a subject to perceive an affordance of an object is for him to perceive at a level below consciousness features of that object in terms of how they provide for, and coordinate with, his motor actions.

In his paper 'The Role of Demonstratives in Action-Explanation'[2] Campbell characterizes affordance perception as just this kind of subpersonal visual perception. Although it is an important part of Campbell's account that a subject's conscious visual experience of an object and his interaction with that object are causally interrelated, he does not claim this interrelation to be the result of affordances being present in visual experience. In what follows I want to concentrate on giving the details of Campbell's account and on spelling out the functional, but non-conscious, role that he attributes affordance perception in action. After doing so, I introduce the Conscious Affordance Theorist's Response to the account of subpersonal affordance perception that Campbell presents.

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[1] Humphreys, G.W. (2001) p.408.

Campbell's Account

A main concern of Campbell's rests in explaining and justifying what he calls the special relationship between the use of a perceptual demonstrative and the explanation of action. He characterizes the relationship in roughly the following three claims: that demonstratives are the fundamental mode of object identification within conscious experience, that use of a demonstrative requires the attentive singling out of an object, and that whichever object is singled out for this perceptual identification will thereby be the object towards which action is directed. For Campbell, the use of a demonstrative is indicative of the ability to attentively single out an object in experience just in case the meaning of that demonstrative is wholly given by the object that is attentively singled out. The upshot of these three claims together is that in order to act intentionally upon an object presented in his experience, a subject must be capable of attentively singling out that object in order that it can serve as the object of his action. Hence, all that is required for a subject to pick up a wine glass in front of him is that he be able to single out that wine glass within his visual experience by means of visual attention. His ability to demonstratively identify the glass as '*that* glass' is indicative of his ability to perform such attentive maneuvers.

For Campbell the crucial point is that were this subject to lean forward and grasp the glass, the success of his action would not be wholly explained by his conscious attention to the glass. Certainly the subject's conscious attention to the glass will

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[2] Campbell, J. (2003).

be what directs and informs his subpersonal motor system, such that just that glass is selected for grasping, but this is the only role that Campbell attributes conscious visual experience in bringing about the subject's successful motor interaction with the glass. Being able to consciously attend to an object provides for (a) a subject's ability to demonstratively identify that object and (b) his ability to interact with that object rather than any other, but the actual process of interacting with the glass – where the subject moves his hand, at what speed, angle, orientation, how he positions his fingers and the like – is controlled at a level below consciousness.

The rationale behind Campbell's account comes from allegiance to an empirical suggestion proposed by Jeannerod[3] that there exist semi-autonomous 'action' and 'perception' information processing pathways in the visual system. What this amounts to for our purposes is that there is a difference in how visual information is processed depending upon whether it enters the dorsal or the ventral streams in the human brain. Whereas a subject is said to be conscious of the contents of the perceptual or ventral pathway, the contents of the action or dorsal pathway are supposedly registered only non-consciously, or sub personally by the subject. The division is roughly that between visual information that constitutes a subject's conscious visual experience, and visual information which plays a non-conscious role in the subject's ability to interact with the world. Although we are right to think conscious visual experience selects a target for action, we would be wrong to

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[3] Jeannerod, M. (1997) provides a developed look at this claim, which finds origins in Jeannerod, M. (1994). The early idea of dual processing is also found in Ungerleider, L.G. & Mishkin, M. (1982) albeit in a slightly different form to the one Jeannerod proposes.

suppose that conscious visual experience also instructs the motor system on how to act upon that object.

Campbell is perfectly aware how this suggestion may go against the flow of intuitive common sense. Common sense may tell us that the very same aspects of perceptual experience that allow us to single out an object allow us to set the motor parameters for interaction with that object. This is what Andy Clark calls having an 'Assumption of Experience Based Control'[4] over our actions. As Clark puts it, holding this assumption makes one think "that conscious visual *experience* provides the very information continuously used for visually based motor control"[5]. Take the example of reaching out to grasp a cup. The assumption is that visual experience not only selects the cup as the target for action, but by virtue of its rich pictorial content it is involved in "the control and guidance of fine-tuned, real-world activity"[6], and is therefore responsible for coordinating the subject's hand with the cup. Something about this view is tempting insofar as you might think conscious attention to an object within your visual field produces an experiential 'picture' of that object, a picture that is then causally efficacious in the coordination of your limbs with that object. The assumption is that your visual experience of a pencil on the desk in front of you has some causal role to play in guiding the precise motor movements needed to pick up that pencil. It is this assumption that Campbell rejects.

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[4] Clark, A. (2001).
[5] ibid. p.496.
[6] ibid. p.496.

Campbell supports his denial of experience based control over action and his allegiance to the separate processing streams for visual information by appeal to both empirical work using normal subjects and neurological case studies that suggest conscious visual experience and the coordination of motor action are more functionally dissociated than common sense expects.

Various functional dissociations between the action and perception pathways can be experimentally induced in normal subjects. It has been found that subjects are able to successfully point to, and reach for, objects which have moved without them consciously noticing. Firstly, subjects can successfully adjust their pointing behaviour to keep track of an object which is moved during a saccade[7]. Secondly, subjects can successfully reach for targets which are also moved during a saccade, and they do so by appropriately adjusting their reaching behaviour. In both cases, the subjects are unaware that any movement of the target has taken place[8], movement that their motor system seems perfectly able to compensate for.

A more drastic example of how the 'perception' and 'action' pathways can dissociate comes from two strains of neuropathological work. The first of these strains Campbell illustrates using a patient DF[9]. Although DF could not visually identify simple shapes, show how large objects were, or report on their orientation, her visuomotor abilities regarding objects remained intact:

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[7] Bridgeman, B., Hendry, D. & Stark, L. (1975).
[8] Goodale, M.A., Pelisson, D. & Prablanc, C (1986).
[9] Goodale, M.A. & Milner, A.D. (1995).

"When she had to pick up an irregular object, she angled her fingers optimally for the grip, though she could not say which irregular objects were the same or different shapes"

DF could consciously attend to the object with which she intended to interact, and was able to interact with it successfully, but she was unable to report on the categorical properties of that object. If DF's visual experience of an object was responsible for setting the parameters for her interaction with that object, she should not have been able to successfully interact with the objects in these experiments.

The second strain of neurological work illustrates the opposite case (Goodale, 1996) whereby patients cannot grasp objects or post them through slits like DF was able to do, but they can show with their hands, unlike DF, how large objects are or in what orientation they reside. Here the patients have all the detail in conscious experience required by the common sense view – experience of the shape, size and orientation of a located object – and nevertheless they are unable to set the motor parameters for their interaction with that object.

It is on the basis of these kinds of empirical and neuropathological studies Campbell reaches the claim that whilst a subject's conscious visual experience targets an object with which he can engage, the 'hard work' of actually coordinating the subject's body with the precise spatial parameters of that object is performed by his subpersonal visuomotor system. Visual attention targets the

located physical object with which the subpersonal action guiding mechanisms can then engage:

"The role of conscious attention to the object is not directly to set the parameters for action on the thing, but to provide enough information about the thing to define a target for the visuomotor system".

What is to count as "enough information" to define a target for action? On Campbell's account it seems to be that the important point of contact between the personal and subpersonal level visual systems is the transmission of location information. Visual attention to a particular spatial location instructs the subpersonal systems to engage with whatever properties are located at that position. The model Campbell uses to cash this idea is Treismann's feature integration theory[10]. According to Treismann's model there is a master map of locations within the subject's visual system which is scanned by a window of attention. When that window rests upon a particular location on the map, that very same location is cued or highlighted on a plethora of other, non-master maps which specialise in individual object properties or features. There may for instance be an orientation map, a colour map, a shape map, and so on and so forth. What the common highlighting of location achieves is that only those features on each individual map found at this single location are bound together on the basis of simple Gestalt principles of object composition. In other words, features on each

map will be bound together primarily on the basis of shared location, but in a way that avoids the grouping of overlapping objects and the like[11].

If Campbell is right then the common sense view is simply misguided in its detail. It is right insofar as conscious visual experience has a causal role to play in action, but wrong in its characterization of that causal role. The correct characterization of the causal role of conscious visual experience in bringing about action upon an object is that it locates the object with which subpersonal mechanisms are to engage.

So where does affordance perception come in to Campbell's account of the relationship between vision and action? For Campbell, affordance perception is a matter of a subject's subpersonal 'action' system detecting and exploiting features of objects in terms of how they coordinate with the subject's motor system. Affordance perception constitutes part of the information carried in the dorsal stream: affordances are subpersonally received messages about how the subject's body is to coordinate with features detected at a particular spatial location. In terms of the empirical work discussed earlier, affordance perception is sensitive to the subtle changes in the location of the target that visual experience fails to keep up with. Similarly, affordance perception remains insensitive to the effects of visual illusion, where despite two identically sized discs looking a different size, a subject is able to scale his grips to pick up each of these discs accurately[12]. Although

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[10] Treisman, A. (1988).

[11] For Campbell, this binding exercise on the basis of location is "a precondition of consciousness of the object" (Campbell, J. (2002) p.31), and once it is completed a subject can keep track of a single object as it moves across various locations.

[12] See Campbell, J. (2003) p.157-158 for a discussion.

visual experience of a target can cause a subject to engage with that target, this causal relation does not bear on affordance perception. Affordance perception belongs to the group of subpersonal motor responses that are often initiated, but not directed, by conscious visual perception. Affordance perception does provide a way in which to cash the idea of a 'direct link' existing between the perceptual properties of objects and actions that can be performed with those objects, but this link is to be interpreted as operating at a subpersonal level. Affordance perception is a kind of non-conscious visuomotor perception that allows a subject to act upon an object as a direct result of his subpersonal perceptions of that object.

In order to bring out this supposed separation between a subject's visual experience of an object and his ability to detect what that object affords, consider a case where the normal causal role of conscious visual experience is inactive, or suspended. Consider a subject that does not consciously perceive objects, but nevertheless can stroke or kick out at various features of objects detected through his non-conscious visual system. What is clear in such a case is that although the subject is in some loose sense 'acting out', his actions will be no more than 'strikes in the dark' in so far as the object to which such features belong has yet to be attentively singled out by him. He is capable of exploiting the various affordances of the object without having attentively singled out the object to which those affordances belong. What this subject is lacking is not the ability to detect or exploit affordances, but only conscious visual experience of the object which grounds those affordances. This hypothetical scenario is exactly the situation

encountered by blindsight subjects[13]. Such patients are able to make verbal reports about, and perform successful interactions with, objects of which they have no conscious visual experience. What Campbell claims is that although the normal causal link between visual experience and motor response is disrupted in the case of blindsight, the patients continue to detect affordances. They can reach for and grasp objects using the correct precision grips without having conscious visual experience of those objects. In the case of the 'blindseer' his affordance perception is, according to Campbell, intact. That is to say, although the blindsighter may lack conscious experience of the object in her blind field, she is nevertheless still "able to perceive some of the 'affordances' provided by the objects"[14].

The Dual Role of Experience

For Campbell, visual experience actually plays two roles in intentional action: a causal role, and an explanatory role. The first role we have already discussed, by claiming that visual experience normally plays a causal role in action by selecting the target with which subpersonal mechanisms can then engage. This is what seems unusual and somewhat surprising about the blindsight case, as blindsighted subjects are able to act intentionally upon objects without selecting the target of their action by way of visual experience. The second role Campbell attributes to visual experience is one that we have yet to mention, and it is one that it has in virtue of playing the causal role that it normally plays. As conscious visual

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[13] Weiskrantz, L. (1986).

experience normally targets an object for action, it gives a reason for why that action succeeds. It is at this stage where blindsighted patients feel the absence of the normal causal role of visual experience, as they cannot appeal to visual experience of the target in order to explain why their actions succeeded. By lacking visual experience of the target of their action blindsighted subjects are unable to account for, or explain the presence of, the affordances they are detecting:

"If the subject reaches and grasps successfully, the subject none the less does not know why the reaching and grasping has been successful. The subject has been right in thinking that there are these affordances there, but does not know why the world has afforded just this and that. Someone who has conscious experience of the object, though, experiences the categorical object itself; experiences, that is, the reason why just that reaching and grasping would be successful…What experience of the object provides is knowledge of the object whose categorical properties are the grounds of the affordances that the blindsighted subject may be able to perceive. Mere perception of affordances is not enough for knowledge of which object is being referred to."

The initial point to note is that although we are right to have the intuition that the blindsighter is lacking something through the absence of conscious visual experience of the target of his action, according to Campbell it is not the perception of that target's affordances. What the blindsighter lacks on Campbell's

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[14] Campbell, J. (2003) p.160.

account is conscious experience of a shaped and sized categorical object located at a particular spatial position. It is because the blindsighter has no conscious visual experience of a spatially located categorical object with which he is interacting that he cannot account for the grounds of his affordance perception. Although he may successfully grasp an object through non-consciously perceiving the affordance of grasping, he cannot give any *reason* for his success, where such a reason would normally appeal to the consciously experienced categorical properties of the spatially located object that he sees. As Hoerl and McCormack express Campbell's position:

"in as far as the object's shape and location are themselves things we can be said to perceive when we look at the object, we can be said to be aware, in experience, of the reasons why various courses of action are open to us"[15]

For Campbell then, conscious visual experience can play the following dual role in affordance perception:

It is the normal cause of affordance perception: conscious visual attention to an object causes it to be the target for visuomotor processing (affordance perception)

It provides an explanation for the success of practical abilities: conscious visual experience of an object makes available the categorical properties of that object,

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[15] Hoerl, C. & McCormack, T. (2001) p.9 (introduction). This quote is from a summary they propose on Campbell's views on affordances and action.

allowing a subject to see the reason why that object afforded him various interactions.

The second of these roles gives conscious visual experience a significant role to play in the subject's personal level psychology: by seeing the categorical properties of an object he can understand why he is able to act upon that object in a certain way.

For Campbell then, what we make available when we consciously attend to objects are their categorical properties, and it is because of this that we understand why those objects have certain affordances. Presumably this works in the following way: when attending to the size and shape (say) of a spatially located object, a subject becomes aware of the reason why having his body arranged in a particular structural poise would be appropriate given his desire to obtain that object. That is to say, by visually experiencing an object, *x*, he is made aware of the reason why his hand should be prehended in position *p* as opposed to position *q*, say, if he is looking to grasp *x*; a reason which appeals to his awareness of the categorical properties of *x*. Conscious experience of the categorical properties of an object may not set the precise parameters for visuomotor interaction with that object, but it provides the subject with a reason for why those parameters for visuomotor interaction are appropriate.

An Explanatory Gap

It certainly seems right to claim that the fine-scale work of visuomotor coordination with objects should be the work of subpersonal visual systems: not only from a phenomenological point of view (we are not often conscious of how we are positioning our fingers into a precise grip) but also from a resource allocation point of view, given that conscious attention, psychologically speaking, is thought to be thin on the ground[16].

However, although we might agree that the majority of fine-grained calculations that are necessary for a subject to pick up an object will be performed subpersonally, the important question is whether these kinds of subpersonal perceptions should exhaust what we mean by affordance perception. Although there is a lot right about the subpersonal approach to affordance perception, I want to suggest that it remains vulnerable to an explanatory gap regarding the details of how the attentive 'singling out' of an object relates to a subject's decision to interact with that object. It is in crossing this explanatory gap that I think the notion of affordance perception has to be extended to allow a form of conscious affordance perception.

Let us approach this issue slowly. For Campbell, conscious visual experience can only provide a retrospective commentary on affordance perception. It supposedly plays this retrospective role when a subject appeals to his conscious experience of the categorical properties of an object in order to explain how he succeeded in interacting with that object. His experience is not a medium of affordance

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[16] There are questions (see Clark, A. (2001)) about how much we should take from empirical studies pointing to the separation of visuomotor and conscious visual processing. However, this is not going to be my personal point of attack on the subpersonal theorist.

perception, but the means by which he comes to understand why his affordance perception – a subpersonal activity – was able to take place. So a subject can supposedly explain his affordance perception once it happens by appeal to his conscious experience, but conscious experience does not present to him the affordances upon which he acts.

The explanatory gap inherent to this account can be brought out by asking the following question: if in general a subject does not experience affordances, only the grounds of those affordances, how does he initially form his intentions to act upon particular objects in particular ways? To frame this question, we can ask how it is that a subject's conscious visual experience of objects enters into his practical reasoning about those objects. Why does a subject believe he can act in a certain way upon an object, where such a belief in combination with his pro-attitudes will be causally responsible for his forming an intention to act in that way? If we attribute a subject an intention to act upon a particular object in a particular way, we have to attribute him certain beliefs if he is to be a rational subject: for instance he must believe that he is (at least) likely to succeed in doing what he intends to do. If a subject forms the intention to reach for a particular object, we should attribute him the belief that he can reach that object successfully. The question for the subpersonal account of affordance perception is why this subject believes on the basis of his conscious perception of a categorical object that he can reach for it. How does his conscious visual experience inform his beliefs about how he can interact with that particular object?

Remember that the subpersonal account of affordance perception is committed to denying that perceived affordances play a role in the subject's personal level belief-desire psychology. A subject does not see objects as 'within reach' or 'graspable': he sees the categorical properties of objects but not their affordance properties. So how, according to the subpersonal account of affordance perception, does the subject's practical reasoning get going? How does he form beliefs prior to acting about how he can interact with an object to which he consciously attends? The problem may not yet be clear, so let us consider an example. Imagine that a subject is visually attending to a cup that is located slightly in front of him and to his right. If Campbell is right, what the subject is able to visually experience are the categorical dimensions of the cup: its being of a certain size, shape, orientation, colour, depth and so on and so forth. Given his experience of these categorical properties the subject can come to know a lot about the cup: that it is taller than a nearby cactus, that it is wider at the top than the bottom and that it is the same shade of blue as tropical water. What he cannot obviously come to know just by looking at these categorical properties is that the cup is graspable, or reachable, by him. He can believe the cup is taller than the cactus, but why should he believe it to be graspable given that he does not experience it as 'graspable'?

One claim might be that the subject can detect prior to acting the very same 'body-object' fit that he uses in retrospect to understand why his actions were successful. This would be to claim that it is his ability to calculate these kinds of ergonomics that makes his intentions to act rational: if the subject perceives that a 'fit' could potentially obtain between his limbs and a particular object, he will

believe that he can act upon that object, and therefore (given the appropriate desires) form a rational intention to act upon that object. We can bring out the essence of this claim by considering an analogy. A subject might reflect that the reason a certain shaped peg fitted into a certain shaped hole when he attempted to join them together was because both were of a certain sized 'square' shape. We might further suggest that it was his perception of this very similarity that caused him to believe that he could fit them together in the first place. In this case, his conscious experience of the categorical properties of the peg and of the categorical properties of the hole suffice[17] to explain why he believes he can fit the two together, and why he later understands how his action succeeded. If this is the right analogy, then in order to understand the practical reasoning procedures that a subject undergoes in forming his intentions to act upon objects he experiences, surely all we need to do is to substitute the subject's body for the peg?

Nevertheless, it seems this position is open to obvious scrutiny. Consider that this position delivers us a subject who, in order to form the rational intention to grasp an object in his visual field, needs to consciously compare the shape and size of that object with the shape and size of his hand. He also needs to somehow bring his knowledge of the motor capabilities of his hand into the equation; abilities which, to complicate matters, are not given as part of his contemporary conscious visual experience. Furthermore, for the subject to have even decided to 'reach' for the object in order to grasp it, he would presumably have had to calculate the

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[17] I take for granted Putnam's point that we do not need to bring in reductive explanations involving microphysical properties in order to satisfactorily understand causal interactions between macrophysical objects (see Putnam, H. (1975)).

distance at which the object lays from a locus on his body and have compared that distance with what he perceives to be the length of his arm. Only after these kinds of calculations had been done would a subject be able to form the rational intention to reach for and grasp the object he experiences.

This position clearly stands in conflict with a basic phenomenological feature of first person action: namely the attentional transparency of the subject's body. It is a common theoretical claim that the body of an actor employs some degree of attentional transparency from within the visual perspective of that actor. The actor's body is not the explicit focus of his attention, and indeed it could be detrimental to his successful acting if it were. If a subject had to make relational calculations between his body and the world every time he desired to act, his action would be laborious to say the least. We might here appeal to studies by Cole and Paillard involving subjects whose substantial loss of proprioceptive information means that they do in fact need to visually attend to their bodies in order to perform even the slightest action. As Cole and Paillard put it, "[c]onstant visual vigilance is required for any purposeful movement"[18].

The question remains then: what is it about a subject's conscious attention to an object within his visual field that allows him to form the rational intention to act in a certain way upon that object? How is it that a subject forms the belief he can reach and grasp a particular object to which he consciously attends if all he experiences are the categorical properties of that object, such as its length, size and shape? The question at hand is what exactly it is about our conscious experience of

a particular object that grounds and causally explains our beliefs about how we can act upon that object, and the claim being made is that the subpersonal account of affordance perception has no satisfactory answer.

A Role for Conscious Affordance Perception

In Chapter 1 we introduced the claim that affordance perception can be a matter of conscious visual experience. That is to say, conscious experience is not only indirectly related to affordance perception, as the subpersonal account of affordance perception would have it, conscious experience is a medium of affordance perception. Recall that an account of conscious affordance perception claims that when a subject visually experiences an object he can be made aware of more than the categorical properties of that object: he can have direct, experiential awareness of what that object affords him. He can see objects to be 'within reach' or 'graspable', and he does so not on the basis of performing any kind of inferential calculations about what he is seeing; he simply experiences the objects this way.

Is this account any better placed to answer the question of how a subject believes he can act on particular objects in particular ways by virtue of visually experiencing those objects? My claim is that it is. We can say that a subject believes he can reach for and grasp a particular cup because that cup looks to him to be within reach and graspable. By claiming that affordances are part of the

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[18] Cole, J. & Paillard, J. (1995) p.250.

constitutive content of visual experience we allow that affordances can play a role in a subject's belief formation. Hence, by introducing a notion of conscious affordance perception we can mend the explanatory gap that exists when we define affordance perception as a subpersonal activity. So contrary to the subpersonal account of affordance perception, it seems that affordance perception does need to play a role in personal level practical reasoning: it is needed to ground a subject's beliefs about how he is able to act on objects he visually experiences, where on the basis of such beliefs he forms intentions to act upon those objects in particular ways.

Moreover, this experiential account of affordance perception can also help explain how it is that a subject understands why a particular action of his turned out to be successful. If the subject comes to believe an object is within his reach by visually experiencing it as 'within reach', he may decide to reach for that object. If he does reach for it, then one answer he might give as to why his reaching succeeded in obtaining the object will appeal to his initial experience of the object as being within his reach. He knew he would be able to reach it, he might say, as it clearly looked to be within his reach. The subject's conscious experience of a particular affordance can therefore play a dual role in his personal level psychology: it can enter into his reasons for acting, and it can also provide him with a retrospective explanation for why his action succeeded.

Although the subpersonal account of affordance perception claims that conscious experience plays both a causal role and an explanatory role in regards to affordance perception, these roles are only 'indirect': visual attention to an object can cause

subpersonal detection of its affordances to occur, and visual attention to the categorical properties of an object - in relation to the categorical properties of an agent's body – may give a reason for why just that affordance perception occurred. On the conscious account of affordance perception, the roles conscious experience play in affordance perception are direct: visual attention to an object can provide visual awareness of its affordances prior to acting, and visual attention to those affordances can provide a subject with a reason for why an action of his succeeded. Affordances do not have to be 'inferred' or discovered by attention to the categorical properties of the situation: they are themselves given in visual experience.

A Bifurcated Definition

If the personal level story of affordance perception is right, then affordance perception cannot be defined, as Campbell intends, as a matter of subpersonal feature detection. So how should we define affordance perception? If we claim that affordance perception occurs at the level of conscious awareness, should we now claim that affordance perception is an exclusively conscious phenomenon?

Put simply I think this would be a mistake. I do not take the two positions on affordance perception, personal and subpersonal, to be mutually exclusive. Although the subpersonal account defines affordance perception as a wholly non-conscious matter, there is no reason why a proponent of conscious affordance awareness need be similarly exhaustive in his definitions. Indeed, a proponent of

conscious affordance perception can agree with Campbell that the affordances which obtain between a subject and his environment can play a causal role in directing the subject's action at the subpersonal level. What he will disagree with is the claim that the causal role of affordance perception ends there. One reason for the Conscious Affordance Theorist to include an account of subpersonal affordance perception in his definition is to remain faithful to the dual processing account of visual perception that we introduced and provided empirical support for earlier on. The lack of experience-based control that we exercise over the fine motor tuning of our actions provided Campbell's rationale for introducing a non-conscious direct link between vision and action. A proponent of conscious affordance perception need have no disagreement with this: just because a subject sees objects to be 'within reach' or 'graspable', say, it does not follow that his experience of objects as 'within reach' or 'graspable' is responsible for the fine motor tuning of his reaching and grasping actions. That is to say, when a subject goes about grasping a pencil, conscious visual experience will not guide his fingers in engaging a detailed precision grip.

However, whether or not a subject actively chooses to instantiate one kind of grip over another – say he intends to write with a pencil, rather than stab his classmate's hand with it – can indeed be a matter of conscious decision. That is to say, the subject can see the pencil as 'graspable like this' or 'graspable like that', where these demonstratives pick out two different kinds of grip (a precision grip for writing and a closed fist grip for stabbing). The subject doesn't need to have reflective awareness of how he produces his various grips in order to see the pencil

as 'graspable' in different ways, he need only be able to produce these different grips and be able to distinguish them in his mind. The point is that the subject can associate the affordance of 'graspability' that he sees with different kinds of bodily movement, and so the pencil can appear to him to be graspable in lots of different ways. For instance, an advanced cricket player may be able to say of a ball bowled a certain way that it affords hitting 'like this', where 'this' picks out a whole series of muscular movements which are perhaps beyond his personal comprehension. Consciously perceived affordances need not, but can, give some detail as to the bodily movements their exploitation involves. The important point is that once a subject has chosen the activity he wants to engage in, whether or not he goes as far as to intend a particular kind of grip or hitting strategy, the precise motor coordinations of his body with the object in question needed to produce that action are the causal product of his subpersonal visuomotor representations.

The Conscious Affordance Theorist can therefore support a bifurcated account of affordance perception. He is not saying that all affordance perception is conscious, only that affordance perception occurs at the conscious level of visual experience. In bringing about finely tuned reaching, jumping, kicking and grasping actions a subject needs to perceive the affordances of objects at a subpersonal level. But in order to believe he can reach, jump, kick and grasp certain objects and therefore intend to do so, the subject needs to consciously experience those objects as affording him the requisite activities. From this point onwards, I will intend the proponent of conscious or personal level affordance perception to be understood as a proponent of a dual account of affordance perception: he is to be distinguished by

his claim that conscious affordance perception is possible, and not by the claim that it is definitive of affordance perception.

Returning to Blindsight

In getting clear the difference between the proponent of subpersonal affordance perception and the proponent of conscious affordance perception in terms of their relation to intentional action, it will be instructive to return to the case of the blindsighted subject that Campbell introduced. In particular, to the different interpretations the two proponents of affordance perception offer as to why it matters that the blindsighter lacks conscious experience of the object with which he interacts.

Let us begin with a challenge one might put to a proponent of conscious affordance perception. Did the case of blindsight introduced by Campbell not show us that a causal link between conscious visual experience of an object and the planning of intentional action upon that object was redundant? By definition the blindsighter has no conscious experience of an object and so he cannot in principle experience what that object affords, and yet at the same time he is able to form the intention to reach for and grasp that object. If the ability to form an intention to act upon a particular object in a particular way does not rely on having visual experience of what that object affords, then the conscious account of affordance perception loses its explanatory advantage over the subpersonal account of affordance perception. If this is right, it narrows the explanatory gap that was said

to obtain between a subject's conscious experience of a categorical object and his formation of an intention to act upon that object: if blindsighters can form such intentions, the process of intention formation must be extraneous to conscious experience of affordances. In other words, the subpersonal account of affordance perception can relax, as a subject's conscious experience of a categorical object does not have to bear the weight of explaining his process of intention formation.

Framed in this way, it can seem prima facie that the case of blindsight only poses a problem for the account of conscious affordance perception, given that on that account the absence of conscious affordance perception should have hindered the blindsighted subject's ability to act intentionally. However this is not quite right, as the blindsight case poses a problem for anyone who claims that visual experience of an object and intentional action upon that object are in any way normally causally linked. The subpersonal account of affordance perception makes such a claim: that a subject's conscious visual experience targets a spatially located object with which his subpersonal motor systems are able to engage. Conscious visual experience of the located categorical object is supposed to be what causes the subject's intentional interaction with that object[19]. This causal role of visual experience in intentional action is indeed a crucial part of the subpersonal account of affordance perception; without it the account runs the risk of suggesting the unwelcome proposal that 'intentional' action is also initiated, and not just directed, by the subpersonal visuomotor system. Hence given that the subpersonal account

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[19] Otherwise the subpersonal account is committed to the idea that everyone suffers from a kind of 'anarchic body syndrome' – that our subpersonal visuomotor systems engage all of our actions whilst we simply witness the results.

of affordance perception is committed to saying that the subject's conscious visual experience normally has a causal role to play in his intentional action, this account also faces the question of how it is that the blindsighter acts intentionally upon objects.

I think we should consider the blindsighter as acting intentionally, insofar as he chooses to reach and grasp for an object of a particular sortal classification, and that he does so on the basis of normal belief-desire practical reasoning. However, looking to the content of these intentional states brings out what is unusual about the blindsighter's case: in particular the content of his belief states. He may have a belief along the lines that there is a doughnut in front of him (say) and he may also believe that he is able to pick that doughnut up, but he will hold these beliefs solely on the basis of the experimenter's testimony about the doughnut. The fact that there is a doughnut, or that it is an appropriate size for him to grasp it, are not facts the blindsighter can know without being told them by the experimenter. The intention that the blindsighter forms will be the intention to 'pick up the doughnut in my blind field'. To be clear, there is no problem with his practical reasoning, and neither is there anything inherently impossible about a subject forming an intention to act upon a particular object that he cannot currently visually experience: you can plan to eat the big cake in the fridge when you get home. What gives us the sense of discomfort in the blindsight case is the fact that he is forming intentions to act on a particular object that is right in front of him, without appealing to his conscious visual experience of that object.

The reason that the blindsight case should not cause problems for the claim that intentional action upon particular objects requires conscious visual experience of those objects is this: the blindsighter forms intentions to act based on existential propositions, and intentions based on existential propositions are not intentions to act upon particular objects. It is intentions to act on particular objects we are claiming depend on conscious visual experience. For Strawson[20], to secure reference to a particular object one will need to use a perceptual demonstrative in singling out that particular, and perceptual demonstratives require perceptual consciousness. Similarly, recall that for Campbell, singling out an object in perceptual consciousness is how a subject becomes able to use a perceptual demonstrative[21]. This 'singling out of an object in perceptual consciousness' is just something the blindsighter cannot do. His situation is not helped if he uses non-perceptual demonstratives and speaks of 'that doughnut' or 'that hat', as he cannot be sure that he succeeds in referring to a single doughnut or hat in his blindfield; there may be several objects that fulfill his demonstratives, or indeed, there may be none at all.

The case of the blindsighted subject is therefore not a challenge to be faced by either of our accounts of affordance perception. However where the subpersonal and personal level accounts of affordance perception come apart is over accounting for what it is that the blindsighter lacks by being unable to visually experience the

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[20] Names or definite descriptions will not suffice to single out one unique object, which Strawson illustrates using a hypothetical case of 'massive reduplication'. In this case, one section of the world is replicated within that world, and so names and descriptions previously referring to single objects are now satisfied by multiple referents. See Strawson, P.F. (1959) p.20.

[21] Campbell, J. (2003) especially p.150-152.

object with which he is interacting. For Campbell, he lacks knowledge of why his actions upon that object succeed, as he cannot see the categorical object he is interacting with. He cannot see the object that grounds the affordances he is exploiting. The proponent of conscious affordance perception on the other hand claims the subject is unaware of the affordances themselves: he does not visually experience the affordances of the object with which he is interacting, and therefore lacks knowledge of why his interactions with that object succeed.

Affordance Perception, Acting & Knowing

What I want to do now in the final section of this chapter is make the Conscious Affordance Theorist's proposal clear by showing how it can be situated within a detailed account of subpersonal affordance perception. Although Campbell makes the claim that affordance perception is a subpersonal activity, his account is not concerned with spelling out the details of what subpersonal affordance perception actually is. The account I have in mind as representative of a detailed account of subpersonal affordance perception is that from Jacob and Jeannerod[22]. Like Campbell, they claim that affordance perception is to be understood as a matter of forming subpersonal, visuomotor representations of object attributes:

[22] Developed largely in Jeannerod, M. (1997) and Jacob, P. & Jeannerod, M. (2003).

"The visuomotor representation of a target, generated by the motor processing, consists in the visual detection of an affordance"[23].

Jacob and Jeannerod claim that the reason affordance perception is a subpersonal activity is that it occurs on what they call an 'egocentric' frame of reference. When perceptual content is displayed on an egocentric frame of reference it is only able to serve a 'pragmatic' function for the perceiver:

"the representation involved in sensorimotor transformation has a predominantly 'pragmatic' function, in that it relates to the object as a goal for an action, not as a member of a perceptual category. The object attributes are represented therein to the extent that they trigger specific motor patterns for the hand to achieve the proper grasp"[24]

When they are perceived using an egocentric frame of reference, objects and their 'attributes' are only represented to the extent that they 'trigger' certain motor patterns. Visual information displayed on an egocentric frame of reference will only be displayed in terms of its relevance to acts of motor coordination. A subject's motor system makes use of the pragmatic representations provided by egocentric perception in guiding the subject's body to perform various actions. Using an egocentric frame of reference does not allow a subject to identify properties such as shape, size and orientation 'as' properties of shape, size and

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[23] Jacob, P. & Jeannerod, M. (2003) p.185.

orientation. The only detection of shape, size and orientation that occurs is in terms of how these properties provide for precise body-object motor coordinations.

Hence, egocentric frames of reference for Jacob and Jeannerod have two defining features: they are body-centred, and they are pragmatic[25]. They are body-centred in the following sense:

"For the purpose of reaching and grasping a glass, what the agent needs to represent is the position of the glass relative to the axis of her body. Hence, in a visuomotor task the visual system must code the position of the glass in an egocentric frame of reference"[26]

Presumably depending on the nature of the motor task the subject is aiming to undertake the egocentric frame will be centred on a different part of the body. For instance, if she is looking to write with a pencil it may be a hand-centred egocentric frame that she uses to coordinate her motor action. What this means is that her subpersonal visuomotor system will represent object attributes in terms of how they are commensurate with the size of her hand, or its various grip apertures. On its own body-centrism shouldn't entail that egocentric frames of reference are subpersonal: we can imagine locating all of the objects in a room in terms of how

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[24] Jeannerod, M. (1997) p.77.

[25] This definition of egocentricity is somewhat stipulated rather than argued for by Jacob and Jeannerod. You might think it equally obvious that the notion of an egocentric frame involves conscious perception, where a subject seeing from an egocentric point of view is a subject that is "presented with the world of things *around him*, spatially related not only to each other, but also to himself"[25] (Brewer, B (1996) p.266) On a view like this, an egocentric frame of reference just is one which characterises the spatial layout of conscious visual experience.

[26] Jacob, P. & Jeannerod, M. (1997) p.180-181.

close or far they are from our left hand. Similarly, in the case of heavy rain we might search the room looking for objects that can successfully cover our head and shoulders. What about the introduction of pragmatism? There is, on the face of it, also no reason why a pragmatic representation should be definitively subpersonal. We can imagine a subject who visually experiences the world purely in terms of what it provides for his actions. As we discussed in Chapter 1, if an object failed to afford such a subject any kind of interaction, that object would be simply 'invisible' to him. To use Jacob and Jeannerod's own phrase, he would not be able to identify the object as a member of a perceptual category. Yet in this hypothetical case, although the subject may not identify objects on their own terms as it were, or put differently, have a grip on their objective identification, we can surely still imagine him being conscious.

Nevertheless, I think this misses the point of Jacob and Jeannerod's use of the term 'pragmatic'. It is not solely that objects and their properties represented on an egocentric frame of reference are being seen in terms of how they provide for a subject's action: their being represented is part of that action. This is why content represented on a pragmatic frame of reference is below consciousness. For Jacob and Jeannerod, it seems to be that visuomotor representations are formed when a subject is actually interacting with an object: they allow a subject's visual system to represent object features purely in terms of their immediate relation to the physical position of the subject's body. Pragmatic representations are formed for the facilitation of actual actions, not for informing a subject of how he can act in a given environment. In the example of the 'conscious' pragmatic perceiver we gave

above, it was not essential that the subject was actually acting in order to enjoy his pragmatic perceptions. Indeed, he could merely look at the pragmatic opportunities available to him without ever exploiting any of them. The point seems to be that for Jacob and Jeannerod affordance perception is supposed to be part of acting: perceiving an affordance just means to represent object features in such a way that they "trigger specific motor patterns". The defining feature of affordance perception for Jacob and Jeannerod seems to turn on the use to which perceptual information is being put: in affordance perception, visual information is represented in the service of an action that is actually occurring. This is what makes affordance perception pragmatic.

For Jacob and Jeannerod, at the level of consciousness perceptual information is put to an entirely different use: the acquisition of concepts and knowledge. For them, conscious visual experience does not represent objects and their properties using an egocentric frame of reference, but an allocentric one. When objects and their properties are detected using an allocentric frame of reference they are supposedly identified as the objects and properties that they are. An allocentric frame of reference does not represent objects pragmatically; it represents them as members of perceptual categories. Shape, size and orientation can be visually identified as shape, size and orientation: there is no need for the subject's visual system to represent these properties in terms of their structural relation to his body. According to Jacob and Jeannerod the reason conscious visual experiences, unlike subpersonal perceptions, provide for identification of objects and properties in

their own right, is that conscious visual experiences meet the constraint of contrastive identification which they take from Dokic:

"Unless a creature has the resources to make contrastive identifications and/or comparisons among different instantiations of one and the same visual attribute or property, she will not be able to recognize or re-identify the property or attribute in question[27]"

It seems right that for a subject to have the concept 'squareness' he must, at the least, be able to identify, reidentify and compare instantiations of the property 'squareness' in his environment[28]. For Jacob and Jeannerod, pragmatic representations of object properties that ensue from visual input being displayed on an egocentric frame of reference will fail to meet this constraint. Recall that they characterize pragmatic representations as representations of properties purely for the purpose of immediate action. Properties are only identified in terms of their commensurability with the structure of the subject's body and the kind of movements his body is performing: properties are not identified, reidentified or compared with one another. As they put it:

"Although the size, shape and orientation of the object are coded in the visuomotor representation of the target of prehension, only their perceptual representation

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[27] Dokic, J. (2002).

appropriate for the selection of the object meets the constraint of contrastive identification"[29]

Prima facie, given what Jacob and Jeannerod say it may seem as though the real difference between egocentric and allocentric representations of visual content is that the former only provide for serial representations of properties, where the latter provide for parallel representations. The distinction between the frames can appear to be simply a matter of how many properties a given frame can represent:

"What is distinctive of the perceptual representation (as opposed to the motor representation) of the orientation, size and shape of an object is that it satisfies the constraint of contrastive identification. To make such a comparative judgement is to be able to represent simultaneously the orientation, size and shape of at least two distinct items in a visual array: No comparison between orientations, sizes and shapes can be performed unless the orientations, sizes and shapes of at least two distinct items are being represented"[30]

There is reason to think however that parallel versus serial representation isn't the issue. For instance, consider a subject is playing the piano: both hands are being coordinated with the various keys on that piano in order to produce a tune. We may

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[28] In Chapters 4&5 I introduce a stronger constraint which I take from John Campbell (2006) on what it means to have the concept of a property: that one understands how to causally intervene on that property.
[29] Jacob, P. & Jeannerod, M. (2003) p.194.
[30] ibid. p.195.

want to say that there is a separate egocentric representation operating for each hand, or perhaps even each finger, in which case there is no sense in which the motor coordinations of both hands are being represented in parallel. But this doesn't seem quite right. The motor coordination needed to play a well-rehearsed tune will involve the subtle and precisely coordinated motor operations of each hand in tandem with one other. Surely then in this case there is some larger scale, egocentric body-centred frame that is coordinating and balancing the movements of the two hands? If so, then there are various visuomotor representations happening in parallel at the level of subpersonal perception. If this is right, then the distinction between egocentric and allocentric frames of reference in vision cannot turn on the difference between serial and parallel representations of content.

I think that the better way for Jacob and Jeannerod to approach the issue would be to focus on the claim that whereas pragmatic representations happen for the purposes of action, as we said above, conscious representations happen for the purposes of comparison, identification and re-identification of objects and their properties. All the ingredients for making a comparison between detected features might be there at the level of subpersonal perception, but for a comparison of them to happen takes more than their simultaneous presence: it requires someone to do the comparing. In other words, Jacob and Jeannerod can allow that within an egocentric frame comparisons could be made between represented features, that within one egocentric frame of reference more than one feature may be represented at any one time, because the important point is that at the level of subpersonal perception there is no-one there to do the comparing. Imagine the case of playing a

C chord on the piano. In this case, each finger of the right hand must be evenly spaced apart, and be made to depress their respective keys at exactly the same time. In this case, if the egocentric frame of reference involved was centred on the hand, then there would be three visuomotor representations that are largely the same: one for each finger. The important point seems to be that there is nobody there to make this comparison. The obvious reason for this is that the process of visuomotor representation happens at a subpersonal level, where comparisons and contrasts require personal level representation. However, the subtler explanation makes appeal to the different functions of subpersonal and personal level visual representations: at the level of subpersonal perception comparisons between represented properties are not the kind of activity being focused on. All that the visuomotor representation is useful for is bringing about an action: the subject's subpersonal system will not be in the business of comparing the visuomotor representations that it makes. In other words, it seems that the function of the visual system at each level is different. At the level of consciousness it is to identify and re-identify properties and objects as perceiver independent entities, enabling us to apply what are realist concepts to our experiences. At the non-conscious level, the visual system has to function by bringing together vision and action in such a way that properties and objects are seen only in terms of their commensurability with current bodily activities and structural dimensions. So although it may be true that "unless the information about the orientation, size and shape is available for comparison, the orientation, size and shape of an object will

not be visually perceived"[31], availability for comparison is not sufficient for a property to be consciously perceived. Instead, what Jacob and Jeannerod should perhaps claim is that being simultaneously presented, or being available for comparison, is a necessary condition for a property to be consciously perceived.

There is a difference then in the use to which visual information can be put: it can be used for the subconscious control of immediate action, or the conscious acquisition of knowledge about the environment one is in. In the first case visual input will be displayed on an egocentric frame of reference, and in the second case, on an allocentric frame of reference. For Jacob and Jeannerod only the first use of visual information characterizes what we mean by affordance perception: perceiving affordances is a matter of bringing about successful fine tuned motor interaction, not gaining knowledge about ones environment. Jacob and Jeannerod bring out this dissociation in the use to which visual information can be put by considering the apperceptive agnosic patient, DF, that we introduced in Campbell's account earlier[32]. Recall that although DF is able to reach for and grasp objects, she cannot identify or recognize the shapes of those objects. For Campbell, just like Jacob and Jeannerod, this means her affordance perception is perfectly functional. However, using Jacob and Jeannerod's account we now have more to say about DF's deficiency, insofar as what she is apparently unable to do is employ an allocentric frame of reference in vision, where her ability to employ an egocentric frame of reference in vision remains perfectly intact:

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[31] ibid. p.195.

"Unlike DF, normal human subjects are able to recode the information about the location of a target from an egocentric to an allocentric frame of reference. This conversion of the representation of the location of an object from an egocentric to an allocentric frame of reference allows normal subjects to compute the relative sizes of two distinct objects"[33]

DF's visual input is stuck, as it were, in the wrong frame of reference, and so her visual information can only serve one purpose: the successful motor control of action:

"her representation of the shape, size and orientation of an object operates only as part of her representation of the location of the target of her reaching action within egocentric coordinates" [34]

In performing her reaching and grasping actions we can say of DF that "her visual system processes the orientation, size and shape of objects in the context of such a task"[35]. What is apparently unusual about DF is that she cannot compare the shape, size and orientation of objects at a conscious level, and so she cannot identify these attributes at all: she simply cannot put her visual information to work in that way. The fact that her visual input fails to meet the constraint of contrastive identification is what explains her inability to identify shapes at the conscious

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[32] ibid. p.190-196.
[33] ibid. p.190.
[34] ibid. p.190.

level. Jacob and Jeannerod hypothesise about the case of DF that although she would be able to pick up a pen lid with her left hand, and a pen with her right, she would be unable to put them together through comparing their relative – and commensurate – sizes. In order to compare the sizes of the two objects she would need to represent them on an allocentric frame of reference. All DF is able to do is represent their sizes pragmatically and egocentrically, where what this amounts to the size of both the lid and the pen being represented only in terms of how they are able to fit with the immediate grip apertures of her left and right hands respectively.

In the context of Jacob and Jeannerod's account then, what is the proponent of conscious affordance perception saying? As I suggested earlier the proponent of conscious affordance perception will agree that because of cases like blindsight, and the apperceptive agnosic DF, it may be essential to admit the reality of subpersonal affordance perception. However, what the proponent of conscious affordance perception will deny is that this subpersonal affordance perception is definitive of what it is to perceive an affordance. Consider a normal subject looking at a pen lying next to its lid. For Jacob and Jeannerod, this subject will be able to compare the relative sizes of the pen and the lid using an allocentric frame of reference. But how, if at all, can he see that these two items can be fitted together? Surely we want to say that seeing the pen and the lid together enables the subject to see that they will fit together? If so, is not the most natural explanation that the subject sees that the lid affords 'slotting over' the pen? Similarly, we

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[35] ibid. p.195.

might claim that it is only because a subject sees each of them as graspable that he would be able to form the intention to reach for the pen and the lid in order to put them together. For the conscious affordance theorist, conscious affordance perception occurs on Jacob and Jeannerod's allocentric frame of reference. Just as a subject can identify and compare the shapes and sizes of two objects, he can identify and compare their affordance properties: he can see that one puddle is jumpable whereas another is not. What is important to emphasise is that the conscious affordance theorist is claiming 'affordance perception' can fulfil both of the two roles that Jacob and Jeannerod delineate for visual input: it enables the fine-tuned coordination of motor action at a subpersonal level, and it provides a subject with knowledge about the environment he is in. Affordance perception can occur on both of Jacob and Jeannerod's frames of reference: egocentric 'pragmatic', and allocentric 'epistemological'.

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We have before us now two proposals on how to understand affordance perception. For the 'Subpersonal Theorist' affordance perception is simply a matter of being able to detect features of objects at a subpersonal level, in order to facilitate motor interactions with those objects. For the 'Conscious Affordance Theorist' affordance perception is not simply a matter of subpersonal feature detection: the term also refers to a kind of conscious visual perception. Subjects are able to see objects as being 'within reach', 'graspable', 'kickable' and the like.

The claim from the Conscious Affordance Theorist has been that we need a notion of conscious affordance perception to make sense of how it is that subjects form intentions to act in particular ways upon objects that they visually experience.

The overall question for this thesis will be whether or not the Conscious Affordance Theorist has opened up a tenable position, or whether he offers an inventive but unrealistic account of conscious visual experience. This chapter has been concerned with two tasks that must not be conflated with one another. The first is establishing that the subpersonal account of affordance perception is in some way explanatorily deficient. The second is establishing the substantive claim that affordances are a constituent of conscious visual experience. Although the Conscious Affordance Theorist has so far provided support for his own claim by demonstrating its explanatory advantage over the Subpersonal Theorist's position, the deficiencies of the subpersonal account of affordance perception need not be indicative of the truth of the personal account of affordance perception. In the next chapter we will see how the Subpersonal Theorist might accept that his own account needs to be supplemented, whilst denying that he needs to invoke a notion of conscious visual affordance perception in order to a perform this supplementation. Precisely, he will press what he claims to be an important distinction between conscious affordance perception, and conscious affordance 'awareness'.

Chapter 3: Thought Theory & Motor Imagery

In Chapter 2 the Subpersonal Theorist made his claim that affordance perception is a matter of forming subpersonal visuomotor representations of object features, the sole function of these representations being to bring about successful motor coordination with objects. Affordance perception is supposed to be part of the story of how it is that a subject goes about acting successfully, and not the story of how it is that he forms his initial intentions to act, or how he justifies those intentions. What the Conscious Affordance Theorist did was to claim that subjects have conscious awareness of the affordances in their environment, and that this conscious awareness plays an essential role in the formation and explanation of their intentions to act. As a result, the Conscious Affordance Theorist concluded that conscious visual experience must be able to present the affordances of an object to a perceiver.

What I want to focus on in this chapter is an objection to the Conscious Affordance Theorist's conclusion. Although a Subpersonal Theorist can agree that subjects have knowledge of affordance concepts, and that they appeal to these concepts in the formation and explanation of their intentions to act, he can disagree that knowledge of affordance concepts comes from visual experience of affordances. As I suggested at the end of Chapter 2, demonstrating an epistemological role for conscious affordance awareness is not ipso facto demonstrating the existence of conscious visual affordance perception.

The Subpersonal Theorist may agree then that there would be something deficient in the claim that subjects act on objects in their immediate spatial vicinity without having any awareness of what those objects afford. Why should someone reach for a cup unless he knew it was within his reach? Yet given that the Subpersonal Theorist wants to maintain his claim that affordance perception is strictly a matter of bringing about subpersonal level visuomotor coordinations, where can this 'affordance awareness' come from? The proposal I want to consider in this chapter is that subjects can have certain thoughts about objects, which make them aware of the affordances of those objects. Making this proposal clear will be the first aim for this chapter. After introducing the proposal, I will move on to consider how the Conscious Affordance Theorist might go about responding to this proposal, and in particular, how he might show it to be deficient. In allowing the Subpersonal Theorist to answer these criticisms from the Conscious Affordance Theorist, I consider one further addendum he might make to his account. Specifically, the addendum will be that motor imagery plays an essential role in supporting the claim that subjects rationally form and explain intentions to act on the basis of their thoughts about objects. In closing, I consider the Conscious Affordance Theorist's own view on motor imagery, and whether he thinks motor imagery succeeds in doing what the Subpersonal Theorist wants it to do.

An Alternative Explanation

Suppose then we want to make good on the following two claims. Firstly, subjects will need to be aware of the affordances of objects that they see in order to both form and explain their intentions to act upon those objects in particular ways. Secondly, this 'affordance awareness' is a matter of subjects understanding causally indexical affordance concepts, and being able to apply those concepts to objects they experience. To take a simple example: in forming the intention to reach for a doughnut he is looking at a subject has to be aware that that doughnut is within his reach, where this amounts to his being able to apply the concept 'within reach' to that doughnut. If the Subpersonal Theorist wants to make room for such a notion of affordance awareness, then he can supplement his account with the claim that for a subject to have knowledge of the affordances of objects he experiences, he needs to have causal indexical thoughts about those objects. These 'thoughts' then exhaust the subject's awareness of the affordances of those objects. Let us call this modified version of the Subpersonal Theorist's account 'Thought Theory' in light of its central claim that affordance awareness comes in the form of mere thought[1], and not visual experience of any kind.

I think there is material in Jacob and Jeannerod's position for countenancing this proposal that a subject's knowledge of affordance concepts does not come from

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[1] The Subpersonal Theorist is not committed to any claims about affordance 'awareness' in order to hold his position that affordance perception is a subpersonal phenomenon. I think for that reason it is important to introduce a new position (Thought Theory) which does attempt to modify itself in light of the Conscious Affordance Theorist's criticism in Chapter 2.

visual experience, but from thought. On their account, these thoughts are not a direct causal product of a subject's visual experience of an object: having a conscious visual experience of an object does not in itself bring about thought of what that object affords. Instead these thoughts are supposed to be a direct causal product of subpersonal affordance perception, such that if an affordance is detected at the subpersonal level a subject can have a thought about that affordance. I want now to look in more detail at the Thought Theorist's position, before moving on to looking at how the Conscious Affordance Theorist is going to respond to it.

Thought Theory

For Jacob and Jeannerod, the relationship between having visual experiences and grasping causal indexical concepts is not a matter of experience being imbued with such concepts. Instead, subjects have what are causal indexical thoughts about objects when they visually experience those objects: they thereby have affordance awareness without conscious affordance perception. According to Jacob and Jeannerod subpersonal visuomotor processing has a dual role: firstly visuomotor representations allow a subject to scale his body precisely with the structural features of objects, in order to successfully interact with those objects, and secondly visuomotor processing informs a subject's grasp of causal indexical concepts:

"pure visuomotor representations have a dual function in the human cognitive architecture: they serve as inputs to motor intentions and they serve as input to a special class of indexical concepts, the 'causally indexical' concepts"[2]

So subpersonal 'visuomotor representations' not only input to a subject's motor intentions allowing him to scale his movements precisely and sensitively in order to interact with an object, they also input to his conscious cognitive life. The visuomotor representations themselves do not become conscious, but they input to a class of concepts that the subject uses. Thought Theory is therefore summed up in the following two claims: firstly that the only role conscious visual experience plays in affordance perception is to cause subpersonal visuomotor processing, and secondly that this subpersonal visuomotor processing causes a subject to have causal indexical thoughts.

Although Jacob and Jeannerod do not themselves provide examples of how this link between a subject's grasp of causal indexical concepts and his subpersonal affordance perception works in practice, the Thought Theorist is presumably free to do so. Say a subject is looking at a cup which is (in a de facto sense) graspable by him. His visuomotor system will form a subpersonal representation of the affordance of 'graspability' at the location to which the subject is attending, and this allows the subject to become consciously aware of the fact that the object to which he is attending is graspable. His awareness of the cup that he sees as being graspable comes in the form of his inclination to apply the causally indexical

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[2] Jacob, P. & Jeannerod, M. (2003) p.202. See this page also for a clarification of the fact that motor intentions are quite unlike 'prior' intentions, given that they are essentially non-conceptual and only play a role in the automatic bringing about of fine tuned motor action.

concept 'graspable' to that cup. The crucial point is that the subject's conscious awareness of the cup as graspable is exhaustively constituted by his non-experiential thought about that object. In no sense does the subject consciously perceive the cup as being graspable: any awareness he has of the applicability of the concept will come through his having a certain kind of thought about that cup. If he has the causal indexical thought, then the object is deemed by him to be graspable, if he does not have the thought, then the cup isn't so deemed.

One perhaps questionable interpretation will herein be made in the Thought Theorist's favour: if visuomotor representations are only formed when a subject is actually acting upon an object, then any affordance awareness a subject has (which is caused by the presence of those representations) cannot be what informs his initial decision to act. The decision has to come before the acting happens, and so affordance awareness must be present before a subject acts if it is to inform his decision to act. In light of this, I will allow that visuomotor representations may be formed prior to an actual act ensuing, or that there are counterparts to these representations which are formed prior to acting, either of which can be causally related to causal indexical thought in the way outlined. For instance, the visuomotor system may form 'practice' representations which are the one's it would form if real action were occurring, but in this case are only simulatory. If this is allowed, we can make sense of a subject conceived of using the Thought Theorist's model as being informed of what an object affords him prior to his making a decision to act upon that object[3]. This is how the Thought Theorist can

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[3] Of course we could just plead ignorance and say that the subject simply has thoughts about the affordances of objects, and that we aren't sure of the causal origins of such thoughts. I don't think

claim his form of (non-visual) affordance awareness plays the epistemological role demanded by the Conscious Affordance Theorist in Chapter 2.

With this qualification made, I suggest that the Conscious Affordance Theorist should consider Thought Theory as a potential contender for answering the explanatory challenge he levied against the Subpersonal Theorist in Chapter 2. The challenge was to explain how it is that a subject who visually experiences only the categorical properties of an object forms intentions to act upon that object in certain ways on the basis of his visual experience. What the Conscious Affordance Theorist claimed this subject to be missing was an awareness of the kinds of simple contact activities he could engage in with the object he visually experienced. In order to have such awareness, the Conscious Affordance Theorist claimed that the subject would need to experience the object in terms of what it afforded him. The Thought Theorist can agree with the need to meet this explanatory challenge, and can further agree that the answer lies in a subject being aware of what the object that he visually experiences affords him. The key difference between the two accounts is in the role being played by conscious visual experience. For the Conscious Affordance Theorist, conscious visual experience is the medium of affordance awareness; for the Thought Theorist conscious visual experience merely initiates procedures that lead to affordance awareness. Regardless of this difference, the Thought Theorist can claim to solve the explanatory challenge given that these causal indexical thoughts the subject

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such a position is essentially incoherent, but it certainly lacks an explanatory reliability that the position I take from Jacob and Jeannerod's work possesses: if thoughts are causally related to visuomotor representations, we as theorists have an idea of when, and perhaps why, such thought will occur.

has allow him to form intentions to act in certain ways. As Jacob and Jeannerod put it:

"after conceptual processing via the channel of causally indexical concepts, the visual information contained in visuomotor representations can be stored in a conceptual format adapted to the content of prior intentions. Hence, the output of the motor processing of visual inputs can serve as input to further conceptual processing whose output will be stored in the 'intention box'."[4]

For the Thought Theorist then, subpersonal affordance perception causally inputs into causal indexical thought and a fortiori to intention formation.

Defending Against Thought Theory

If he wants to refute Thought Theory, then the question the Conscious Affordance Theorist is going to have to answer is why it is that conscious visual experience is so important for affordance awareness. Why can thought about what an object affords not play a rationalizing role in the formation and explanation of a subject's intentions to act? At this point I think the Conscious Affordance Theorist is under pressure to justify why his emphasis on the visual experience of affordances is so important.

What I claim the Conscious Affordance Theorist should deny is that the causal indexical thoughts Thought Theory proposes can play the role in intention

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[4] Jacob, P. & Jeannerod, M. (2003) p.208.

formation and explanation that the Thought Theorist needs them to play. The central dispute between the Conscious Affordance Theorist and the Thought Theorist will be over the kinds of conscious states that can deliver a form of affordance awareness that is sufficient for the rational causation and explanation of intentional action upon perceptually demonstrable objects. For the Conscious Affordance Theorist, only conscious visual experience can meet this task, and it will be his concern in this section to demonstrate why.

To bring out the importance of the proposed link between affordance awareness and conscious visual experience of those affordances, I want to look at an ingenious notion of Ned Blocks: the super-blindsighter[5]. I want to suggest that a subject characterized by the 'Thought Theory' is in the same kind of epistemic position when it comes to intentional action as the super-blindsighter, insofar as neither of them make appeal to a crucial causal link that should obtain between their visual experience of objects and their thoughts and beliefs about how to act upon those objects. I will claim that neither subject can justify his beliefs about how to act in a certain way upon an object, as neither subject appeals to his visual experience in order to do the explanatory work.

Recall the blindsighted subject from Chapter 2: he could reach for and verify simple propositions about an object in his blind field despite having no conscious awareness whatsoever of that object. The reason that the blindsighter reached when he did, or made guesses as to the characteristics of the object in question, was because an experimenter asked him to. What Block asks us to imagine is a blindsighter who is not so dependent on external instruction. Specifically, we are

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[5] See Block, N. (2002).

asked to imagine a blindsighter who is able to verify propositions about an object and act upon that object without (a) being asked to do so, and (b) without having any conscious visual experience of that object. This is the super-blindsighter: the subpersonal level visual information he receives can influence his conscious choices and decisions in such a way that he can act intentionally upon, and verify propositions about, objects in his blind field without being instructed to do so. As Block says, the "visual information…from his blind field simply pops into his thoughts"[6]. Now, the first thing Block draws our attention to is that although this information 'detection system' is functionally intact, from the point of view of the super-blindsighter his visual detection of objects in his blind field is quite unlike his visual detection of objects in his sighted field:

"The super-blindsighter himself contrasts what it is like to know visually about an X in his blind field and an X in his sighted field. There is something it is like to experience the latter, but not the former, he says. It is the difference between *just knowing* and knowing via a visual experience"[7]

In Block's terminology, the information that the super-blindsighter receives about the X in his blind field is access conscious, but not phenomenally conscious. For the super-blindsighter, the case where he 'just knows' that there is an X in his blind field stands in contrast to the case where he 'knows via a visual experience' that there is an X in his sighted field, where only the latter is accompanied by a

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[6] ibid. p211.
[7] ibid. p211.

distinctive visual phenomenology. In the case of the subject 'just knowing' we want to say that the thoughts he has are mere epiphenomena, that they are the causal product of subpersonal (i.e. below the level of phenomenal consciousness) information processing. From the super-blindsighter's point of view, what he is missing out on, as Eilan claims, is a justificatory relationship between these epiphenomenal thoughts and his visual experiences:

"unlike the normal case, the superblindseer does not appeal to the fact of perception or to the content of his perception as his *justification* for the content of his judgment."[8]

Although the super-blindsighter may have gained the ability to spontaneously report on, or, act upon, objects he visually detects at the subpersonal level, he cannot appeal to his visual perceptions in order to justify or explain instances of these abilities. It is important to press that it is not enough that his thoughts or judgments are the result of a causal mechanism that uses visual information, and it is also not enough that the thoughts themselves are conscious:

"Of course, the super-blindsighter has a *thought* that there is an X in his blind field that is *both* A-conscious and P-conscious, but I am not talking about the thought. Rather, I am talking about the state of his perceptual system that gives rise to the thought. It is this state that is A-conscious without being P-conscious."[9]

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[8] Eilan, N. (1998) p.183.
[9] Block, N. (2002) p211.

And it is this "state of his perceptual system that gives rise to the thought" which we would normally expect to be a conscious visual experience.

Now, what is strange about the Thought Theorist subject who thinks an object is 'within reach' without knowing how or why he thinks that, is that he actually has conscious visual experience of the object. He has the visual experience that the super-blindsighter is by definition missing out on in his blind field, and yet the Thought Theorist subject still doesn't know how or why that visual experience relates to his thoughts. I think the right intuition to have at this point is that his visual experience is not playing the explanatory role that it should be playing. The Thought Theorist subject has visual experience of an object, and has the thought that the object is within reach, say, but is unable to explain the latter by appeal to the former. Even though Thought Theory produces a subject who is visually conscious of an object and able to think about what that object affords, this subject is in much the same position as the super-blindsighter: he cannot explain his thoughts about affordances by appeal to the contents of his conscious visual experiences.

Another way of putting the point is to suggest there is a problem with the kind of 'reliability' that is inherent to the Thought Theorist's form of affordance awareness. According to the Thought Theorist the causal indexical thoughts which a subject has are reliable owing to the fact that they are causally dependent upon visuomotor representations of affordances at the subpersonal level of perception. That is to say, if an affordance isn't perceived at the subpersonal level, a subject

won't have a thought about that affordance. In this sense, the subject's thoughts about what it is that objects afford him are more than likely going to be accurate. The problem however is that although the reliability of the subject's causal indexical thoughts has been secured in a de facto fashion, the kind of reliability that we want these thoughts to have is one which the subject having the thoughts can himself experience. What the Thought Theorist secures is the basic reliability of the thoughts, but what he does not secure is a subject's awareness of this reliability. For the Conscious Affordance Theorist, herein lays the problem with the Thought Theorist's account: the thoughts a subject has are not based on conscious visual information, but subconscious visual information. As a result, the subject having thoughts about what an object affords him will be unaware as to how or why his thoughts are appropriate given the object he is looking at. The intuitive problem with this 'Thought Theory' approach is that a subject does not know that his thoughts and the beliefs they cause are in fact rational or justified given the actual state of the world. The de facto causal relation that obtains between the subject's subpersonal detection of an affordance, and his thought about that affordance, is not and cannot be known to him first hand. In other words, from the subject's point of view his causal indexical thoughts will appear to bear no relationship to his conscious visual experience. What he sees is just a categorical object with various categorical properties: he does not see the affordance that he is having thoughts about. According to the Conscious Affordance Theorist, this will deny those causal indexical thoughts a role in the subject's practical reasoning and explanation of his actions. That is to say, if a

subject thinks or believes that the object in front of him affords grasping, but he has no idea why he thinks that, acting on the basis of this belief does not seem wholly rational. From his point of view he is no better off than someone acting on the basis of clairvoyant hunches.

One response might be to say that the Conscious Affordance Theorist is simply being too demanding: surely we often rely on our thoughts and beliefs about the world without paying attention to the causal grounds of those thoughts and beliefs? A subject might have the belief that a particular cup he is looking at was bought for him last Christmas, and yet be unable to explain the content of this belief by appeal to his visual experience of the cup. He just 'knows' it is that one, he might say. However, we must be clear on the kinds of thoughts the Thought Theorist is proposing to give an account of. A subject's belief that a cup was bought for him last Christmas plays no direct role in the subject's intentional action upon that cup. He may reach for and smash that cup in an argument without realizing that it was the cup he was bought last Christmas. The belief could play a role in his intentional action, i.e. picking it out especially to demonstrate to his grandmother that he still has it, but it plays no role in the causation and explanation of his basic reaching and grasping behavior. If the subject thinks the cup is within his reach and graspable by him, we expect him to be able to account for these thoughts on the basis of his visual experience of that cup. If Thought Theory is right however, the best this subject could do in explaining the presence of these thoughts would be to appeal to some testimonial account (perhaps from a neurologist) about the cause of his thoughts. Although this might assure him of the reliability of his

thoughts, he still cannot offer any explanation of that reliability from within his first person perspective. And it is this perspectival explanation, one that appeals to the contents of his thoughts and how they are grounded in his visual experience, which we expect this subject to have. Of course over time the subject may become aware of causal regularities that obtain between his having a particular visual experience of the cup and his having a particular thought the cup such that it is within reach and graspable, but there is no reason to think this kind of associationism is a substitute for the ability to explain one's thoughts about what an object affords by appeal to one's visual experience of that object.

So the claim from the Conscious Affordance Theorist is that it has to be evident to the subject why he has certain thoughts and beliefs about the affordances of an object he visually experiences if those thoughts and beliefs are to support his intentions to act upon that object. The Conscious Affordance Theorist further claims that the 'evident' relationship that will satisfy this demand is one obtaining between visual experience of affordances and thoughts about those affordances: a subject has to see why certain beliefs and thoughts are appropriate to an object he visually experiences. In other words, if a subject has beliefs about an object being 'within his reach' or 'graspable' he needs to explain these beliefs by appeal to the fact that the object looks to him to be 'within reach' and 'graspable'. From the subject's experiential point of view it must be obvious why his beliefs, and a fortiori his intentions, are rational.

For the Conscious Affordance Theorist these considerations should demonstrate to us the inability of Thought Theory to characterize the normal case of affordance

awareness. The having of causal indexical thoughts alone, i.e. thinking 'that cup is within reach', does not sufficiently characterize what we mean by conscious affordance awareness. Although a Thought Theorist subject could appear to meet the explanatory challenge from Chapter 2, this appearance is deceptive: a belief about what an object affords that is not grounded in visual experience of that affordance will not do the rationalizing work required of it. A subject saying he believes he can reach for *x*, or that his belief caused him to reach for *x*, will only have explanatory power if the subject understands where such beliefs come from.

The Explanatory Role of Experience

The Conscious Affordance Theorist is saying then that in order for certain beliefs a subject has about an object to justify and explain his intentional action upon that object, those beliefs need to be grounded in his visual experience of the object in question. This is not a requirement that has to apply to every belief the subject might have about an object, or even every belief that may be causally relevant to his intentional action upon that object. The Conscious Affordance Theorist's requirement applies only to those beliefs which involve causally indexical affordance concepts. For instance when a subject believes that a particular object is 'within reach', 'graspable', 'jumpable', 'sittable on', 'slippery', 'kickable' and so on and so forth.

In order to make his case, the Conscious Affordance Theorist has pressed two points in regards to the Thought Theorist's causally indexical beliefs: their

reliability and their rationality. In terms of the former point, although Thought Theory produces a subject with reliable causal indexical beliefs about object affordances, that subject is not aware of the reliability of those beliefs. The reason he has no awareness of their reliability is that he has no first hand awareness of their causal origins: he may know his beliefs are caused by his subpersonal visual system, but he has no first hand experience of that causal relation. The second point is that this epistemological position the subject is in regarding his causal indexical beliefs negatively impacts his 'rational' appeal to such beliefs in intention formation and explanation. From the subject's point of view, the beliefs he has that objects are 'graspable' or 'within reach' cannot be justified by him. What the Conscious Affordance Theorist has claimed is that the causal origins of a subject's beliefs about affordances need to be 'evident' to him, where this is interpreted as a need for those beliefs to be grounded in visual experience. In putting these two points together then: the subject needs to 'see' why his beliefs about object affordances are reliable, before he can make rational appeal to them.

But why should appeal to conscious visual experience save the day? What do these terms like 'first hand experience' and making something 'evident' actually mean, and why are they so important?

These questions are good ones, and their full answers would require much more than I can offer here. They are in fact situated on a crossroads between two general and pervasive intuitions: (i) that conscious visual experience has a unique epistemological standing and (ii) that conscious visual experience must play a significant explanatory role in intentional action upon perceptually demonstrated

objects. What I want to do with the remainder of this section is simply offer two examples on behalf of the Conscious Affordance Theorist that try to bring out what is made so 'evident' to the subject by his having 'first hand' visual experience of the affordances he has beliefs about.

For the first example, say that Fred is a Thought Theorist subject. Fred has beliefs about how to interact with an object that simply 'come to mind' when he visually attends to that object. The supposed reliability of Fred's beliefs comes from the fact that they are the causal product of his visuomotor representations of the affordances in his environment. Consider however that Fred's visuomotor representation system starts to malfunction, and it only picks up around 50 percent of the affordances in his environment. What follows is that Fred will only have thoughts and beliefs about 50 percent of the affordances in his environment. Say that one of the non-detected affordances is the graspability of a glass of wine in front of Fred. Arguably this leaves Fred in an unwelcome situation, in which we are forced to say that even though Fred is staring at the glass as hard as he can, he has no beliefs about whether or not that particular glass is graspable at that particular time. He might even remember that glasses in general are graspable, and be frustrated and perplexed as to why he is having no thoughts about the graspability of this glass[10]. Would Fred be any better off if he were able to consciously experience the affordances of objects? The suggestion is that he would

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[10] We could recast the example by saying Fred has visuomotor representations but that those visuomotor representations do not always cause beliefs. Here Fred is no better off it seems: he only gets half of the beliefs he should be getting. The only difference in this case is that Fred would be in a position similar to that of the blindsighter: he would retain his ability to grasp the glass even though he is forced to remain agnostic on the personal level as to whether or not that glass is graspable by him.

be. If he were able to experience the affordances of the glass then whether or not he was able to form a visuomotor representation of the graspability of the glass he would still clearly see it to be graspable. This will be why he makes the decision to reach for the glass, given that he wants some wine. At this point of course the frustration will arrive when Fred is unable to get his arm to coordinate properly given his lack of visuomotor representation in this instance.

Let us now turn to the second example. One claim the Conscious Affordance Theorist will make is that a subject is able to use his visual experience in going about altering the affordances that he sees. By making visually guided alterations to his environment, the subject can bring it about that he sees different affordances as obtaining in that environment. Consider Bob who is sitting at his desk with a large mug of tea to his right. In its current position, the tea is annoyingly out of Bob's reach and he has to lift off his chair slightly every time he wants to reach for it. What can Bob do to make his situation easier? According to the Conscious Affordance Theorist, Bob will be able to see that moving the mug closer to him will move it into the area of his visual field in which objects are seen to be within his reach. When he starts moving the mug, he will be able to see once it is within reach and will therefore know to stop moving it. This simple situation is something the Conscious Affordance Theorist claims the Thought Theorist cannot satisfactorily explain. For the Thought Theorist, it cannot be the case that Bob is looking 'how' to make the cup within reach: objects do not look within reach according to Thought Theory, and so it makes no sense to say Bob could use his visual experience to create the affordance of within reachness. When the cup is

within reach Bob will have the thought that it is, but until then he should be in the dark as to whether or not the cup can be 'made' to have an affordance of any kind. For the Conscious Affordance Theorist, affordance awareness should bear a meaningful relation to the visual experience that grounds it, such that subjects can appreciate how certain objects they see are able to support the affordances that they do. For a theory of thought-based affordance awareness on the other hand, affordance awareness will bear no meaningful relation to the subpersonal affordance perception that grounds it: a subject cannot see why certain thoughts are appropriate given his subpersonal perceptions because they are, after all, 'subpersonal' perceptions. It seems then that only the Conscious Affordance Theorist can explain how the absence of certain affordances in a particular environment can be rationally rectified or manipulated by a subject. Thoughts about an affordance may indicate the presence of that affordance, but only visual experiences contain information for the subject about why, or how, that affordance obtains.

Suppose in a reflex rejection of this point the Thought Theorist claims that a subject could 'know the general principle' that if an object is moved closer to a perceiver then it will become within his reach. By knowing this principle, Bob will be able to move the tea mug gradually closer to him with the hope of inducing the thought 'that is now within reach'. I think that the way to hold off this kind of response is to consider a more complicated example, one for which there are no 'general principles' to which a Bob could appeal in guiding his actions. Consider Bob is attempting to carry the back end of an unwieldy wardrobe. What Bob is

frantically looking for, as he visually scans the wardrobe, is which parts of the wardrobe will afford him 'grasping', 'tugging', or 'pushing'. There may be general rules on how to carry wardrobes, but at this point they have gone out of the window. It is of no use to Bob to simply wait until he has a thought about which parts of the wardrobe afford him which activities – he knows which activities he needs to do (grasp, tug, push) at any one time, and he needs to see on demand how he can do them. According to the Conscious Affordance Theorist, in this situation all Bob needs to do is move his eyes over the wardrobe, and perhaps change his head position slightly, in order to be able to see directly which parts of the wardrobe afford him grasping, tugging and pushing at any one time.

Although I am not claiming these examples to be conclusive of the importance of visual experience in affordance awareness they do serve to illustrate the kind of rational and evidently reliable relationship that the Conscious Affordance Theorist is claiming must obtain between a subject's visual experience and his affordance awareness. For the conscious affordance theorist, introducing a notion of affordance awareness that does not involve visual experience negates the rationality of an appeal to that awareness in the formation and explanation of intentional action.

I want now to consider how the Thought Theorist might respond to the Conscious Affordance Theorist's claim that affordance awareness must involve visual experience in order for it to play a part in rational intention formation and explanation. I think there are two possible moves that the Thought Theorist might want to make at this point. The first move should be to concede that there is something right about the claim that the 'thoughts' of Thought Theory need grounding from within the subject's point of view. Precisely, that the subject having these thoughts will need to be aware of why those thoughts are appropriate or rational to have given the environment he is in. The second move will be to deny that the only grounding relation available to these thoughts about what an object affords is one involving conscious visual experience.

What the Thought Theorist needs to find is a way for subjects to be able to rationalize, and experience the reliability of, their thoughts about affordances whilst claiming that subjects do not visually experience those affordances. In making good this last avenue for the Thought Theorist I want to consider an empirical approach to which he might appeal: the psychological and neuroscientific phenomenon of motor imagery.

Consider Roessler's example of a subject asking himself whether or not the ceiling is within his reach:

"One suggestion here is that the reflective use of affordances involves a kind of motor imagery. You imagine trying to touch the ceiling, using the content of your visual experience to control your imagined movements."[11]

So in order to answer the question of whether the ceiling is within reach, a subject can imagine himself touching it. Similarly, he might be able to imagine himself leaning across to close a window, which causes him to think the window is within his reach. There are two claims about motor imagery that can be extracted from Roessler's example: firstly, for a subject to have reflective or conceptual awareness of whether the ceiling affords him touching he needs to use motor imagery, and secondly his motor imagistic procedures are dependent upon, and restrained by, the content of conscious visual experience. Both of these claims deserve some unpacking, and I want to spend the next few sections developing an account of how the Thought Theorist might use this notion of motor imagery to supplement his account of affordance awareness.

The first claim then is that a subject can employ motor imagery to arrive at conceptual judgments such as 'that ceiling is within my reach'. It is by imagining himself reaching the ceiling that the subject becomes aware of the affordance of that ceiling. Immediately it is clear how this offers an alternative to saying that the subject experiences the affordance of the ceiling by looking at it; he has to imagine himself touching the ceiling in order to judge that it is 'within reach', or 'touchable'. This is what makes an appeal to motor imagery tempting for the Thought Theorist: it dissolves the charge that a subject's thoughts about an

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[11] Roessler, J. (2003) p.393.

object's affordances are, from his point of view, ungrounded if he does not visually experience those affordances. On this view, a subject's affordance awareness is not grounded in his visual experience of affordances, but it is grounded in his motor imagistic abilities. If this is right, then the 'thoughts' of Thought Theory are not so alien to the subject as the Conscious Affordance Theorist claimed them to be. By using motor imagery, a subject can have rational thoughts about affordances: rational because they are supported by his motor imagistic abilities. In the next section, I want to consider an objection to this position, and suggest how the Thought Theorist might need to modify his position in response.

The second claim is that a subject uses his motor imagery abilities to answer questions about the world he visually experiences, and that his visual experience of that world constrains his motor imagery abilities. Motor imagery is supposed to work under the control of contemporary visual experience, and in the service of answering questions about the world visual experience presents. In the penultimate section to this chapter I want to expand on the Thought Theorist's interpretation of the link between motor imagery and visual experience, and in doing so raise a question for how he interprets the notion of visual 'constraints' on motor imagery.

In the final section of this chapter, I want to introduce the Conscious Affordance Theorist's own position on motor imagery. Although he does not attribute motor imagery the role that the Thought Theorist attributes it, the Conscious Affordance Theorist maintains that motor imagery plays a crucial role in everyday conscious affordance awareness.

For now, let us begin with the first defining claim made about motor imagery: that it is a subject's source of conceptual awareness about the affordances of his environment.

Active Imagination

The claim being made is that a subject does not simply look to see whether an affordance obtains in his environment, he has to use motor imagery to imagine himself exploiting that affordance before he can say whether or not it is present. In the example given above, the subject cannot see just by looking at the ceiling whether it is within his reach, he needs to first imagine reaching it successfully before he can judge it to be within reach.

The suggestion by the Conscious Affordance Theorist is going to be that this claim overplays the role of motor imagery, and is not a claim that the Thought Theorist should be looking to adopt. Let us start developing this suggestion by asking the question of what it is that a subject is actually supposed to be 'doing' when he performs motor imagery. Based on Jeannerod's account it seems that performing motor imagery requires the subject to be attentively aware of his embodiment in such a way that his imagining resembles a kind of physical rather than purely mental activity. It seems motor imagery is not a spectator sport: motor images are not something the subject 'sees', so much as something he 'does':

"During motor imagery the subject feels himself executing the action, whether it involves the whole body (as in running for example) or it is limited to a body part (as in writing, pointing to a target or holding pressure against an obstacle, for example). This process, therefore, requires a representation of the body as the generator of acting forces, and not only of the effects of these forces on the external world. A number of everyday situations correspond to this definition: watching somebody's action with the desire to imitate it, anticipating the effects of an action, preparing or intending to move, refraining from moving, remembering an action etc." [12]

The subject engaging in motor imagery needs an imaginative ability that draws on his knowledge of himself as a body with the power to generate certain "acting forces". It is an interesting question in and of itself what it might mean to say that a subject "feels himself executing the action": is he having kinaesthetic sensations or just simulating kinaesthetic sensations? What does it mean to say you can have or simulate muscular sensations without actually moving?[13] We can merely flag these questions here. The important question for the Conscious Affordance Theorist is what role the subject's awareness of his embodiment is supposed to be playing in his motor imagery procedures. The Conscious Affordance Theorist was adamant in Chapter 2 that a subject's rational decisions to engage in simple interactions with objects were not made on the basis of conscious calculative

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[12] Jeannerod, M. (1997) p.95.

[13] This kind of phenomenological query could be levied equally at the suggestions of Henri Poincare. His idea of "representing to oneself the muscular sensations" that potential movements would induce is one that Jacob and Jeannerod look on favourably as a predecessor to the concept of motor imagery (Poincare, H. (1958) p.47).

reflection about the physical structure and abilities of his body in relation to those objects. Indeed, the claim was that all a subject needs to do to form an intention to act upon an object in a basic way (i.e. to grasp it, kick it, reach for it) is to visually experience the affordance of that object. All that such affordance perception requires is that the subject is able to single out the object in question within his conscious visual perspective. Now, although the performance of motor imagery doesn't require a subject to perform abstract computations of his bodily abilities in comparison with object attributes, it does require the subject to have some type of physical experience and/or conscious awareness of the parameters of his body. Consider an experiment by Klatzky et al.[14] to which Jeannerod appeals in introducing the concept of motor imagery. In this study, subjects were asked to name a hand shape that they would use (out of a category of four: pinch, poke, palm or clench) in picking up an object, and conversely to choose an object they would pick up when told one of these four hand shapes. What the experimenters found was that subjects were able to perform these tasks with relative ease. In interpreting these results Jacob and Jeannerod claim "[t]hey suggest that knowledge of movements performed during interactions with objects can be accessed cognitively"[15]. So it is the movements, the 'bodily workings', which are brought within consciousness. Although it seems right to claim that subjects can consciously access these kinds of parameters if they choose to, that they can be conscious both of the position of their body and of what their body is capable of at any given time, it doesn't seem right to postulate this as the means by which

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[14] Klatzky, R.L. et al. (1987).
[15] Jeannerod, M. (1997) p.89-90.

subjects decide whether they can act upon the objects they experience. Being concerned with the amount of attention to the body involved in motor imagery is just one way of framing what is a more general worry one might have about the claim that motor imagery provides for affordance awareness: surely subjects do not have to perform motor imagery procedures before forming each and every one of their intentions to act, in order to make those intentions rational?

Attempted Modifications

The crucial move for the Thought Theorist to make at this point is to agree with the Conscious Affordance Theorist's concerns, and to claim that he too accepts the general worry that motor imagery cannot be the means by which subjects make each and every decision to act upon objects they experience. Indeed, the Thought Theorist might say, it would be absurd to think that every time a subject decides to act upon an object he can do so only because he has imagined the whole procedure first, where such imagining supposedly 'causes' his decisions to act. Moreover, the Thought Theorist has already claimed that subpersonal visuomotor representations are sufficient to cause a subject to have thoughts about object affordances[16]. In this case, he rejects the strong claim that in order to have thoughts about what an object

[16] Even if motor images are simply visuomotor representations made conscious (as I go on to explain) this doesn't entail the claim that a motor image will be present every time a subject has a thought about an affordance.

affords a subject needs to engage in motor imagery, and in effect denies the first claim about motor imagery with which we began: that it provides a subject's conceptual awareness of affordances. What the Thought Theorist will maintain is that a subject's conceptual awareness of affordances comes from his having certain thoughts, but he will deny that having these thoughts is the causal upshot of engaging in motor imagery. Hence, when a subject decides to act on the basis of his thoughts about what an object affords him, he may have engaged in no motor imagery whatsoever to arrive at those thoughts. So what then is an appeal to motor imagery doing for the Thought Theorist? How can motor imagery justify the accuracy of a subject's thoughts about object affordances if it is not causally responsible for those thoughts? The positive proposal from the Thought Theorist is this: a subject's ability to use motor imagery serves as a way in which he can, if pressed, justify or explain his thought-based decisions to act. For the Thought Theorist, thinking *x* is within reach is sufficient reason for deciding to reach for *x*, but if the subject wants to justify his thought that *x* is within reach he can imagine reaching for *x*. Effectively, what the Thought Theorist will claim is that the following Justification Hypothesis is true:

Justification Hypothesis: By using conscious motor imagery a subject can justify to himself why he has particular thoughts about the affordances of objects.

Although he does not need to perform motor imagery in order to form his decisions to act, a subject can perform motor imagery in justifying these decisions.

The cause of his deciding to act in a certain way upon a certain object is the fact that he has thoughts about what that object affords him[17], but if he is ever in doubt about the veridicality of those thoughts he can use motor imagery to test them. The claim is that a subject's appeal to thoughts about what objects afford him in forming and explaining his intentions to act upon those objects is rational. The reason it is rational, is that a subject can make evident to himself the reliability of any one of these thoughts using motor imagery. This is how Thought Theory can use motor imagery to tackle the Conscious Affordance Theorist's objection in the last section. Recall the objection was that from the subject's point of view he didn't know, or had no first hand evidence of, why any one thought he had about an affordance was reliable. The Thought Theorist is now saying that a subject can use motor imagery to get first hand experience of the reliability of any one of his thoughts about affordances. So at this stage the Conscious Affordance Theorist loses the weight of his objection against the Thought Theorist: the thoughts a subject has about what an object affords him are not essentially ungrounded from his point of view. Does this mean Thought Theory combined with resources from motor imagery serves to rival, or perhaps even displace the need for, an account of conscious affordance perception?

Inferential & Non-Inferential Justification of Action

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[17] For Jeannerod motor imagery isn't the causal basis of much object oriented action, but unlike the Thought Theorist he suggests that the majority of actions are performed without any thought at all: "object-oriented actions are most often performed in an implicit mode, which does not involve conscious awareness" (Jeannerod, M. (1997) p.89).

To recap, the claim from the Thought Theorist is that a subject is justified in appealing to his thoughts about what an object affords him in forming and explaining his intentions to act upon that object. The reason he is so justified is that his appeal to those thoughts in planning and explaining his actions is a rational thing to do. What makes appeal to these thoughts rational is the fact that their reliability at reporting genuine affordances of the environment is secured, and it is secured from the subject's point of view by the fact that the reliability of any one of his thoughts can be tested and verified by his employment of motor imagery.

I suggest that the Conscious Affordance Theorist can hold out against this supplemented account of Thought Theory, but in order to do so he must find a different line of attack to the one which simply claims that Thought Theory leaves a subject with ungrounded or non-rational beliefs about affordances. It does seem feasible to claim that a subject could take his thoughts about affordances to be accurate and reliable purely on the basis of the fact that he could use motor imagery to test any one of those thoughts. There is nothing inherently objectionable about saying this subject could operate with a kind of default stance which involved taking all of his thoughts about affordances to convey genuine possibilities for his action. What the Conscious Affordance Theorist should concentrate on is whether or not this kind of inferentially justified thought is able to support the initiation and explanation of rational, intentional action. Although a subject of modified Thought Theory may now be justified in trusting the accuracy of his thoughts, there is the further question of whether this situation accurately conveys the case of normal subjects.

Let us start with an example of how the Thought Theorist's 'modified' position is supposed to work. Consider a subject who attends to a puddle in his visual field, a puddle that he wants to get across. According to the Conscious Affordance Theorist, the subject will visually experience the affordances of the puddle, and will be able to make use of them in deciding whether to act in a certain way upon that puddle. For instance, he may see the puddle to be jumpable and on this basis form the intention to jump across it. Alternatively, according to the Thought Theorist, the subject will have certain thoughts whilst attending to the puddle and it will be on the basis of these thoughts that he chooses to act in certain ways upon that puddle. He may think the puddle is jumpable and so on this basis forms the intention to jump across it.

Consider now that in both cases the subject is wrong. The puddle is not in fact jumpable. Imagine as he wades through the last portion of the puddle, an onlooker asks him what on earth possessed him to jump. According to the Conscious Affordance Theorist, the subject will simply say 'it looked as though I could make it': nothing else needs to be said in order to justify his behaviour. That is, the onlooker will understand that from where the subject was, the puddle looked jumpable to him, and this is why he jumped. From the onlooker's point of view, the subject's behaviour will surely seem perfectly justified. What of the Thought Theorist subject? In this case the subject will simply say 'I thought I could make it'. Providing that this isn't understood as synonymous with 'it looked as though I could make it', the onlooker will surely press the question 'but why on earth did you think that?' For the Thought Theorist subject things now become rather

awkward: he can say that normally his thoughts are accurate, but that he didn't think to check this one. He could try to explain that his thought 'that is jumpable' in and of itself carried no guarantee of its accuracy, but that it was rational to act on the basis of this thought because if he is ever in doubt about a thought he can check its accuracy using his faculty of motor imagery.

I suggest the discomfort that is no doubt arising over this Thought Theorist subject is due to the type of justification that he is prepared to accept regarding the rationality of his action. What the Conscious Affordance Theorist offers the puddle-jumping subject is a kind of non-inferential justification of his jumping behaviour; the experience itself inherently justifies a certain kind of action for the subject: an experience of 'jumpability' justifies jumping. Whereas for the Thought Theorist subject the connection between his affordance awareness and his rational appeal to that affordance awareness seems only one of inferential justification: for the subject, his appeal to his thoughts about affordances is justified only because those thoughts are themselves justified by motor imagery. That is, his appeal to his thoughts about affordances is not itself rational without the 'Justification Hypothesis' also being true: that he can justify any one thought by appeal to motor imagery. For a token affordance thought, there is no inherent justification of the accuracy of that thought from the subject's point of view. Although he can employ motor imagery in the service of validating this thought, this further process means his appeal to that thought in rational action only has a kind of inferential justification to it. In other words the accuracy of the thought is not evident, but only inferred, from the subject's point of view. The Conscious Affordance

Theorist is therefore alleging that the Thought Theorist's model fails to capture the epistemological link between affordance awareness and justified intentional action that the Conscious Affordance Theorist claims to be representative of the normal case.

Constrained Imagination

So much for the first claim about motor imagery with which we began. I want now to move on to looking at the second claim made about motor imagery: that a subject's motor imagistic procedures are dependent upon, and restrained by, the content of his conscious visual experience. Let us start with a bold question: how can motor imagery serve as a source of knowledge about real possibilities for action if it involves the exercise of imagination?

I want to distinguish between two kinds of cases in which a subject might use his imagination. The reason for doing so is not to provide an exhaustive analysis of the concept of 'imagination', but to delineate between two imaginative projects that might come under the term 'motor imagery'. Let us call them 'constrained' and 'unconstrained' uses of imagination. Both involve the subject imagining himself as engaging in some kind of activity, but that is where the similarity ends.

Unconstrained imagination is not constrained by the subject's visual experience. It is also not necessarily constrained by the laws of nature or physics. Consider Bob can imagine himself running 100mph across the surface of the Pacific Ocean: in this kind of case we want to say that Bob cannot in fact run 100mph, or across

the surface of water. However, this is an imaginative project we can appreciate Bob engaging in, as all he is doing is imagining his usual running behavior without the constraint of real time speed or water density[18]. What I want to claim as the hallmark of unconstrained imaginative projects is that they do not inform the subject of the actual possibilities open to him for acting in his contemporary environment. Bob should not engage in such an unconstrained project if his aim is to see how he can go about reaching the top of a climbing wall: what matters in this case is finding out whether and how he is actually able to climb the wall, and not simply whether he can imagine himself doing it. The imaginative project in this case needs to be constrained by its own purpose: it is going to be used to guide Bob's actual action.

We might say then that constrained imaginative projects involve (at least) the following three constraints:

(i) They involve a contemporary physical environment in which the subject is himself located, and they respect the physical workings of that environment.

(ii) They involve a realistic appraisal of the subject's physical dimensions and abilities.

(iii) They are performed with the purpose of informing a subject's actual intentions to act.

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[18] What is less clear is to what extent subjects can imagine changes in their own physical constitution. Although it may be possible to imagine having wings instead of arms, allowing one to imagine flying, it may be less possible to imagine 'seeing through sonar' or having the exact physical proportions of a bat. See Nagel, T. (2002) for an interesting view on the radical difference between the subjective perspectives of different species.

The success of an unconstrained imaginative project consists only in the act of imagining. Imagining is all there is to it: if Bob can think it up, he can enjoy an unconstrained imaginative project regarding it. On the other hand, a constrained imaginative project only succeeds if it provides Bob with an answer as to what he can and cannot realistically do in his contemporary environment. These two kinds of project therefore differ in their goals, their constraints, and their success conditions. It is only the constrained project with which we will be concerned from hereon in, and in particular, how the details of a constrained imaginative project sit with the use to which Thought Theory puts it.

We have already said something about constraint (iii), but what about constraints (i) and (ii)? Constraint (i) is perhaps the most obvious of the three. It is a natural proposal that a subject would perform his motor imagistic procedures on the basis of his visual experience of the environment that he is in. It is natural because a subject is often interested in solving for the question of whether he can act in certain ways in that very environment. In terms of our starting example, the subject wants to know if he can touch the ceiling of the room that he is in, the ceiling that he is looking at. It is crucial therefore that his imaginative project respects the actual dimensions of the environment that he is in fact in, otherwise the answer it may return is of no use to him in answering his initial question. This constraint of the actual environment the subject is in applies to both the spatial aspects of that environment and to the materials with which it is constituted: his imaginative project will be of no use in answering his question about the ceiling if

he imagines (a) the ceiling being located closer to him that it really is, or (b) that it stretches and pulls down to touch his finger. That the ceiling has a relatively immoveable objective spatial location, that it is solid and resistant to bending upon the desire of a subject, are all crucial facts to be respected in the subject's constrained imaginative project.

Constraint (ii) adds that a subject's own physical dimensions and abilities need to pose a restriction on his constrained imagistic performance. It is crucial to add such a constraint to avoid attributing the subject a purely idealistic view of his possible behaviours: one where if he succeeds in imagining an action he is justified in judging that the world affords him that action. If he is engaging in a constrained imaginative project the subject has to stay faithful to his real physical proportions and the kinds of physical abilities that he has.

In giving their account of motor imagery, Jacob and Jeannerod have their own interpretation of constraint (ii), one which guarantees that a subject's imaginative ability concerning how his body can move and operate is accurate. Recall that for Jacob and Jeannerod affordance perception is constituted by a subject's formation of non-conscious, non-conceptual visuomotor representations. What they claim is that under certain conditions, i.e. when it is an explicit task requirement, these representations can be accessed consciously. For them, "a motor image is a conscious motor representation"[19]. We might conclude then that only if the subpersonal system is able to represent a particular action does that representation input into the faculty of conscious motor imagery. Given that the subpersonal representation system isn't likely to be influenced by imaginative wishful thinking

[19] Jeannerod, M. (1997) p.94.

this seems to provide a kind of realist constraint on the workings of motor imagery[20]. At the personal level, what this will mean for the subject is that he is only able to bring to mind, or imagine, movements that he can actually make in a given context. For instance if he is trying to decide whether his thought that a cup is 'within reach' is accurate or not, he will imagine reaching in a way constrained by his real reaching ability.

However, adopting this claim that "a motor image is a conscious motor representation" brings with it questions as well as answers. Given that visuomotor representations are non-conceptual in content, the detailed movements displayed in a conscious motor imagery procedure will also be non-conceptual. How though can non-conceptual motor images support or refute the accuracy of conceptual thoughts? What will be needed to make good the claim that motor imagery enables subjects to see why certain conceptual thoughts they have about the world are accurate, is an explanation of how subjects translate what they experience during motor imagery into a conceptual format. Although there is no insoluble problem with saying a subject could learn to apply concepts to successful episodes of motor imagery, i.e. if he can simulate a reaching movement successfully he can know or be aware that an instance of what he calls 'being within reach' obtains, this ability is still a step above and beyond simply performing the motor imagery itself.

The more serious question to come from the Conscious Affordance Theorist is this: how is a subject supposed to know that he is operating using constrained and not unconstrained imagination, if one of the central distinguishing criteria between

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[20] Jeannerod, M. (1997) suggests how representation of action takes into account biomechanical constraints of represented movements p.106-108.

the two is decided at the subpersonal level? Consider again the constraints (i) – (iii) defining constrained motor imagery. The first constraint says the subject should be imagining acting in his current environment. The third constraint says his imagining should be in the service of answering whether he can actually act in that environment. We can imagine both of these constraints being in place, and the subject being aware that they are: he is actively planning to use motor imagery to answer a question about whether he can act in his current environment in a certain way. But what of the second constraint? Can the subject know that the second constraint is being successfully met? The second constraint was that the subject must know he is imagining within the limits of what his body can do. In one sense, of course the subject will be aware of this constraint being fulfilled: if he imagined himself reaching with three arms, or touching the top of the Alps by stretching, he will know that his body is just not of the right dimensions to achieve such feats. He will know this just by common sense and memory about what his body is like. The worry however is subtler than this.

Consider the following case: a subject is looking up into a tree at the middle to low level branches, and he asks himself whether or not he can reach one particular branch. Surely this is a paradigm case of constrained motor imagery. Say the subject singles out this branch, and imagines reaching up for it. He decides on the basis of a successful imaginative exercise that he can in fact reach this particular branch. Now, there are two interpretations we can give of this situation. On one interpretation, the subject performed an instance of constrained motor imagery, and the branch is in fact within his reach. The reason his motor imagery procedure

counts as constrained is that it involved a subpersonal visuomotor representation being made conscious. The subject's body represented the affordance of reaching at the subpersonal level by way of a visuomotor representation, and this representation was made conscious on the subject's demand whereby its presence at the conscious level was realized as a successful case of motor imagery. On the other interpretation, this is an instance of unconstrained motor imagery, and the branch is not in fact within his reach. Although not a particularly exciting or dramatic use of his unconstrained imagination, the subject is imagining reaching the branch where the success of his imaginative episode is written in by his desire to reach it: consider that his friends are watching his attempt to climb the tree. Perhaps in this case he imagines his arm stretching just slightly more than it can, or in his mind he 'shrinks' the distance between himself and the branch without meaning to. The important point for Jacob and Jeannerod's model is that this interpretation of his motor imagery procedure counts as unconstrained motor imagery as the subject does not have a visuomotor representation of the affordance: the affordance simply isn't there. Recall that being the 'conscious version' of a visuomotor representation is the proposed way in which instances of motor imagery meet the second constraint of what it takes to be a constrained representation. Given that on this second interpretation of this subject's motor imagery there is no visuomotor representation, the second constraint is not met, and so we are not dealing with an instance of constrained motor imagery.

The problem with the current account, according to the Conscious Affordance Theorist, is that the subject has no way of knowing whether or not his instance of

motor imagery comes under the first or second interpretation. In other words, he has no way of knowing whether his imaging meets the second constraint of what it takes to be a constrained representation, where meeting this second constraint is a matter of having a subpersonal visuomotor representation. From his point of view all he gets is the episode of motor imagery, which supplies him with the assurance that the branch is reachable by him. Why precisely is this a problem? It becomes a problem when we claim that subjects can depend on their episodes of constrained motor imagery in order to verify or refute the accuracy of thoughts they have about the affordances of their environment. This is exactly the kind of reliance on motor imagery that is proposed by the modified Thought Theory. So when a subject thinks the branch is within his reach, and uses motor imagery to test his thought, he doesn't know if his motor imagery meets the constraints of being able to verify that thought. Only constrained motor imagery can verify or refute the accuracy of the thought, but the subject himself cannot distinguish constrained from unconstrained motor imagery.

One prima facie response from the Thought Theorist might be this: if causal indexical thoughts are caused by visuomotor representations as Jacob and Jeannerod suggest, and episodes of constrained motor imagery are defined by the presence of visuomotor representations, is the presence of a thought not enough to guarantee there is some visuomotor representation present? And if so, does the subject not have an assurance that his motor imagery is of the right kind to verify his thought, i.e. that it is constrained? Firstly, it is not clear that from the subject's point of view any of this would be assured: if he had a thought about how he could

act, could he tell this thought apart from a thought that was merely a whim or overambitious speculation about what he is able to do in a situation? Further, could he tell his motor imagery was being caused by the presence of a visuomotor representation even if his thought was so caused? The more obvious point however is that this scenario just seems to conceive of matters the wrong way around. The original appeal to motor imagery by the Thought Theorist was supposed to provide a subject with a non-inferential and immediate means of verifying the correctness of his thoughts: this was the standard that we claimed needed to met by any form of affordance awareness proposed to support rational action. What is happening in this case is the subject's thoughts about affordances are being called on to verify the trustworthiness of his motor imagery procedures, when the original intention was that his motor imagery procedures would be able to verify the trustworthiness of his thoughts. Motor imagery was not supposed to depend on the accuracy of a thought, it was supposed to provide a non-inferential way to test the accuracy of that thought.

Perhaps there is another response the Thought Theorist could make to the claim that subjects characterized by his model cannot discriminate between imaginative episodes that are constrained by real possibilities for action and those which are not. There is a strong intuition that when we act, when we engage in either a physical or mental project, we go about doing whatever it was that we intended to do. That is to say, when we form an intention to engage in ϕ-ing, we usually go about ϕ-ing. This is surely part of what makes us rational beings, that we do what we intend to do. If this is applied to the case of motor imagery, then surely it is

simply written in to a subject's imaginative project which kind of project he is engaging in by virtue of the fact that he intended to engage in one and not the other kind of project. Hence, if a subject intends to use his motor imagery to imagine a real possibility for his action, he will intend to use constrained imagination. On the current claim it follows that he will engage in constrained imagination because that is what he intended to do.

However, I think there is another equally strong intuition which says our knowledge of what we are doing comes not only from our knowledge of what we intended to do, but also from our observational knowledge of what we are in fact doing. In other words, we should be able to tell what we are doing because we can see that we are doing it. Whether or not our forming the intention to ϕ gives us non-observational awareness of the fact that we are ϕ-ing, in the normal case we are able to appeal to our observation of our ϕ-ing in order to support the claim that we are ϕ-ing. This seems to be a requirement that the Thought Theorist's model cannot meet. Although a subject may intend to engage in a constrained imaginative project, and in this sense knows that he is engaged in that project because he normally does what he intended to do, he cannot witness or demonstrate the constrained nature of his project. Again, the worry seems to be that the subject doesn't know by virtue of the contents of his imaginative project whether or not that act of imagining is constrained or unconstrained. I do not think this worry goes away by appealing to the above intuitive link between intending to ϕ and thereby knowing one is ϕ-ing. Perhaps this position could be developed

further, but for now I want to move on to the final section of this chapter and consider the Conscious Affordance Theorist's own role for motor imagery.

Conscious Affordance Perception & Motor Imagery

There are three questions I think we should put to the Conscious Affordance Theorist: firstly, there is the general question of how, if at all, motor imagery fits into his own account of affordance awareness. Secondly, I want to ask whether he agrees with the division between constrained and unconstrained imaginative projects that has been made so far. Lastly, I want to ask whether he has a way with which we can explain how subjects distinguish between these two types of imaginative project, if they can at all.

Rather than take these questions in any kind of separate or sequential order, I want to use this section to give a general response to the overall inquisitive project that together I see these three questions as mounting. In order to make his position clear however, the Conscious Affordance Theorist can give the following brief answers to each of the three questions. Firstly, motor imagery does play a role in his account of affordance awareness, but not the role that it plays for the Thought Theorist. Secondly, according to the Conscious Affordance Theorist the division between constrained and unconstrained imaginative projects made so far is missing one crucial criterion, and thirdly, it is by adding this criterion that we find

a way in which subjects can be aware of their imaginative projects as being constrained or unconstrained.

Let us start by adding this extra, fourth, criterion to our earlier definition of 'constrained' imaginative projects:

(iv) They play their action informing role by making salient the physical procedures involved in exploiting a consciously perceived affordance

For the Thought Theorist, the way in which constrained motor imagery is supposed to inform the subject's intentions to act is by verifying the accuracy of his thoughts about affordances. For the Conscious Affordance Theorist, motor imagery does not play this verifying role; it only plays a reassuring one: it shows the subject how he will go about exploiting an affordance that he is already confident is there. This was the difference proposed between having a thought about an affordance and seeing that affordance: only the latter provided an inherently rational grounding for intentional action.

What this fourth constraint introduces are two things: firstly, it brings in a new role for constrained motor imagery, insofar as it informs a subject as to how he should go about exploiting a consciously perceived affordance, and secondly it ties constrained motor imagery to operating in instances where the subject has already consciously perceived an affordance. In short, constrained motor imagery helps a subject understand how he should, or could, go about exploiting an affordance that he sees. For an episode of motor imagery to count as constrained motor imagery,

the motor imagery has to be performed in the service of unpacking the means by which a subject can exploit a consciously perceived affordance.

The first thing to note is that this extra constraint does not tread on the toes of the Thought Theorist's reading of constraint (ii): it may still be the case that constrained motor imagery requires the presence of a visuomotor representation that is, in effect, being 'made conscious'. The point from the Conscious Affordance Theorist was that this constraint alone was not enough to define an episode of constrained motor imagery from the subject's point of view. What does allow a subject to tell when he is engaging in constrained motor imagery, as opposed to unconstrained motor imagery, is the fact that he is using his motor imagery to unpack the physical processes needed to exploit an affordance that he has consciously perceived.

Perhaps the second thing to note is that the Conscious Affordance Theorist disagrees with the Justification Hypothesis, where this hypothesis said that by using conscious motor imagery a subject could justify to himself why he has particular thoughts about the affordances of objects. For the Conscious Affordance Theorist motor imagery does not play a justificatory role in affordance awareness, but more a supplementary or expansive role. Instead of motor imagery serving as a subject's definitive proof of whether or not an affordance is present in his environment, motor imagery serves to show a subject the details of an affordance that he is already assured obtains. Motor imagery, for the Conscious Affordance Theorist, is used to spell out the details about how an affordance, already assuredly present, is to be exploited. Let us put this in context. Consider again the subject

looking at the middle tree branch, where in this case the branch is within his reach. For the Thought Theorist, when the subject looks at the branch he will have the thought 'that is within reach'. In order to be sure whether or not this thought is accurate, the subject would have to perform motor imagery in order to see whether he could reach the branch. Now the problem was that he had no way of checking the faithfulness of his motor imagery procedure. For the Conscious Affordance Theorist, by looking at the branch the subject will have the experience of the branch as being within his reach. He does not need to test or verify this visual experience: he can clearly see the branch is reachable and can justify his attempt to reach on this basis. What this subject might use motor imagery for is simulating how he will go about reaching. For this subject, he can be more assured than the Thought Theorist subject that his instance of motor imagery is constrained rather than unconstrained, as he is using it to spell out the details of what he can already see is a genuine affordance of his environment.

Now we have boldly stated the Conscious Affordance Theorist's position, let us look at whether his position on the role of motor imagery is actually persuasive. Consider the quote given earlier about the kinds of tasks that Jeannerod suggests motor imagery is appropriate for:

"watching somebody's action with the desire to imitate it, anticipating the effects of an action, preparing or intending to move, refraining from moving, remembering an action, etc., can be considered as putative motor images" [21]

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[21] Jeannerod, M. (1997), p.95.

What these examples seem to have in common is a suggestion that motor imagery focuses on the action itself rather than the ends to which an action is geared: watching how someone does something, developing a current action in one's mind, thinking about how one will move or not move, recalling what happened, and so on and so forth. On the face of it, this would suggest the process of motor imagery is somewhat 'means' focused, which is opposed to the process of conscious affordance perception that is largely 'ends' focused: that something will be reached, jumped, grasped or kicked successfully. Although conscious affordance perception often implicitly involves the means by which an affordance is to be exploited, the point is that its focus is only on the end to be achieved. That is, it may be obvious to a subject in seeing an object to be within reach that he will use his arm and hand to reach it. The point is that in seeing the affordance he does not see, or experience, how he will go about exploiting that affordance: he doesn't pay attention to the arm or the hand that will be used in the reaching, or imagine the reaching process itself.

Certainly studies provided as evidence for the phenomenon of motor imagery have mainly focused on subjects' abilities to imagine the duration of actions, and not on their assessment of whether or not they could perform those actions. Empirical work that Jeannerod cites in support of the accuracy of subjects motor imagery abilities largely concerns their awareness of the duration of imagined versus real time actions. By asking subjects to imagine writing a sentence, drawing a cube[22] and even walking to a set destination[23], it has been shown that subjects are

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[22] Decety, J. & Michel, F. (1989).

highly accurate at estimating the time it would take them to perform such actions. Jeannerod claims these findings as support for the idea that subjects are employing motor imagery procedures that simulate the 'real' action; a process that gives them an appreciation of how long that action would take. In all these cases what is being focused on is the subjects appraisal of 'how' they are going to be able to do something. By simulating the means of performing an activity, subjects are able to respond as though the act were really performed; i.e. by pressing a stopwatch when they 'reach' the post they were supposed to be 'walking' to. What is not at issue in these experiments is the question of how these subjects decide that the pen they use to draw the cube is pick-up-able, or that the space they see in front of them affords passage. These decisions are taken for granted by the tasks.

To help express this claim about a difference in focus between motor imagery and conscious affordance perception let us consider the following examples of how the Conscious Affordance Theorist suggests that the two faculties can work together.

Consider a gym class who are lined up at the side of a large spread of mats, and have just been given the instruction to cross the mats in the way that the group leader chooses. Consider the subject second from the front. When his turn comes along, he will have to be able to call to mind at least the following three pieces of information: firstly he will need to know what the group leader in front of him did in order to copy him, secondly he will need to see that the space in front of him affords crossing by him, and thirdly he will need to have in mind how he is going

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[23] Decety, J., Jeannerod, M. & Prablanc, C. (1989). For a virtual reality example of this effect see Decety, J. & Jeannerod, M. (1996).

to get across. What I think we should say is that the first and third concerns have a place for motor imagery, whereas the second, perhaps most fundamental concern for action, does not. As to the first, if Jeannerod is right then watching the group leader cross the mats in a certain fashion will involve a kind of motor imagery given the subject's desire to imitate those movements. To meet the third concern, he will have to put into action the movements which he saw the group leader perform. To do this, he will call on his ability to imitate those actions, and in preparation for this he may even imagine himself doing the actions as he looks out across the mats. The important concern for the Conscious Affordance Theorist is that these kinds of motor imagistic abilities do not speak to the subject's decision of whether or not the mats are crossable. If the subject were to rationalize why he chose to cross the mats in the first place, this would involve a different kind of consideration: one where the subject needs to appeal to his visual awareness of what the mat-lined space afforded him. His motor imagery abilities were answering 'how' he was going to cross the mats, whilst his conscious affordance perception enabled his evaluative judgment that he could cross the mats in the first place.

Furthermore, recall the experiment by Klatzky et al.[24], where subjects had to name which hand shape they would use to pick up a particular object. For the Conscious Affordance Theorist, this is an example of how subjects were using constrained motor imagery to imagine how they would go about exploiting the affordances of the object they saw in front of them. That is to say, if the object were of a mug like shape then a subject could see that the object afforded grasping

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[24] Klatzky, R.L. et al. (1987).

and could use his motor imagery to see how he could go about grasping that object. More than likely, this subject would respond that he would use a 'clench' shaped grip as a result of his motor imagery exercise.

There may also be cases where motor imagery is employed to strengthen a subject's confidence in an affordance that he sees. Consider you are crossing a gap in a mountain 500ft above sea level: you might doubt the fact that the gap you are seeing is crossable, even though it appears to be to you. An easy way to reassure yourself might be to imagine yourself walking across the gap, reinforcing for you the reality of the affordance that you experience. Another, less deadly example might come from sport. Take bowling for instance: the bowling alley you see ahead of you clearly affords the bowling of a ball; you can see what to do just by looking at the alley. Nevertheless, you might be keen to win, and so prior to throwing the ball you simulate various movements of your arm and the resulting ball trajectories in order to 'work out' the best way to exploit the affordance of 'bowling'.

According to the Conscious Affordance Theorist then we can conceive of the two faculties of conscious affordance perception and motor imagery as assisting one another in a variety of scenarios. The important point for the Conscious Affordance Theorist is that motor imagery will not suffice as a replacement for conscious affordance perception, and it is simply inaccurate to conceive of it in this way.

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In this chapter then we have seen the Conscious Affordance Theorist confront a supplemented version of the Subpersonal Theorist's account of affordance perception. This supplemented version of the claim that subjects only subpersonally perceive affordances claimed that conscious affordance awareness could come in the form of thought about objects. We termed this position 'Thought Theory'. Although Thought Theory tries to meet the epistemological challenge the Conscious Affordance Theorist levied in Chapter 2, that subjects' need to have affordance awareness in order to act rationally upon objects they visually experience, the argument in this chapter has been that Thought Theory fails to meet this challenge.

What I want to do in the next chapter is leave this project of supplementing the Subpersonal Theory of affordance perception behind, and concentrate on what I see to be a direct argument against Conscious Affordance Theory. Although the Subpersonal Theorist may adopt the arguments that I look at in the next chapter, he is by no means bound to do so. Put precisely, the argument is going to be this: whether or not conscious affordance perception seems to play a crucial epistemological role for subjects, it simply cannot be playing this role as consciously perceiving the affordances of objects is just not something we can do.

Chapter 4: The Possibility Perception Objection

What I want to look at in the current chapter is one last approach someone might take to denying the coherence of conscious affordance perception. In essence what this approach does is to deny that conscious affordance perception is possible on the basis of what we know about the phenomenology of visual experience. Specifically, it claims that there is something about the notion of affordance perception that is at odds with the very character of visual phenomenology. The central claim is that there cannot be anything it is like to experience an affordance, and so talk of 'conscious' affordance perception makes no sense. I will frame this objection as the 'Possibility Perception' objection against the Conscious Affordance Theorist, given that it claims conscious affordance perception is phenomenologically unviable on the grounds that we cannot see what is only 'possible'.

In finding a way to refute this objection it will not be enough for the Conscious Affordance Theorist to say that he has shown that subjects' need to be visually aware of affordances in order to use them in the formation and explanation of their intentional action. The Conscious Affordance Theorist must face up to this objection on its own terms. He needs to show us why this objection must not be taken seriously, and that it is the result of little more than runaway intuitions. Indeed, I think it is crucial that the Conscious Affordance Theorist at least attempts

to defuse this objection if he is hoping to persuade people of the veridicality of his own position.

Although one could propose the Possibility Perception objection independently of holding any substantive claims about how subjects become aware of affordances, the Thought Theorist might adopt this extra objection in defending his position. The reason he might do so is this: if conscious affordance perception turns out to be an impossible proposal, then the Thought Theorist acquires a kind of negative support for his own position that conscious affordance awareness is a result of having certain thoughts. The Thought Theorist could admit that although in an ideal world visual experience of affordances might provide the best rational basis for intentional action, in reality what we in fact make use of is a form of thought and not perceptual experience. In other words, if conscious affordance perception is impossible, the Thought Theorist will propose he has the next best explanation waiting in line.

Let us start then by laying out the Possibility Perception objection in detail, and seeing what it means for the Conscious Affordance Theorist. Although much of what will be said in this chapter may be called a battle of intuitions, this is perhaps an unavoidable consequence of arguing from the standpoint of what is and what is not available to visual phenomenology. What the Conscious Affordance Theorist will be concerned to defend is the claim that from a phenomenological point of view it is obvious to us that we experience the affordances of objects, and the intuition that we do not and cannot experience affordance properties is based on insecure assumptions about the nature of visual experience.

Setting Out the Objection

So the objection that the Conscious Affordance Theorist is facing is that conscious affordance perception is an incoherent notion given the phenomenology of visual consciousness. Let us start by giving a bold proposal of this objection:

> *Possibility Perception objection*: Visual experience is not, and cannot be, constituted by 'what is potential'. As Weissman puts it: "potentiality is irreducible to actuality; potentiality is not identical with one or a series of present or possible observables"[1]Given that affordance properties are the potentials of objects, they cannot be visually experienced.

The claim then is that a subject cannot see that which is only 'potential'. In one sense this is perfectly obvious: a subject can only see properties that an object actually has, and not ones that it may only potentially have, whatever that might mean. This however is neither the Possibility Perception objection, nor a problem for the Conscious Affordance Theorist: both can agree that affordance properties are properties that objects actually have. What the objection in fact means to target is something subtler than this; it means to target the potentiality that is intrinsic to certain kinds of properties. There are properties that an object actually has, which

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[1] Weissman, D. (1965) p.14.

are defined by the potentials that they grant that object. What the objection claims is that it is these 'potentials' or 'powers' which objects have cannot be seen, and so it makes no sense to say the properties that impart these powers can be seen. What the objection does is to cash affordance properties as just these kinds of 'potentiality imparting' properties. According to the Possibility Perception objection, affordances of objects are potentials those objects have to bring about certain interactions with subjects, and it therefore does not make sense to say these affordances can be seen. This objection takes its lead from a more general, and perhaps familiar, claim that dispositional properties of objects are not the right kinds of properties to be visually experienced, where affordances are being cast as a type of dispositional property.

Now, with typing affordances as dispositional properties the Conscious Affordance Theorist will have no disagreement. With the claim that possessing an affordance property gives an object the potential to behave in a certain way, the Conscious Affordance Theorist will have no disagreement. What he will object to however is the conclusion that any of this makes affordances necessarily unobservable.

So what does it mean then to say an object has a certain 'potential', and that such potential cannot enter into a visual experience of that object? To take a Rylean view, for an object to have a certain potential is for that object to be "bound or liable" to behave in a certain way given certain circumstances:

"To possess a dispositional property is not to be in a particular state, or to undergo a particular change; it is to be bound or liable to be in a particular state, or to undergo a particular change, when a particular condition is realised"[2]

This property of being "bound or liable" to behave in a certain way "when a particular condition is realized" is the kind of property that the Possibility Perception objector says cannot feature in the content of visual experience. As Mumford puts the intuition:

"But how can we observe a possibility? Isn't there a strong case for saying that the possession of a disposition, construed pre-theoretically, is never observable; for all we can observe is its manifestation, never the thing itself?"[3]

So to formalize what is being said, if object *o* has the property *p* that makes *o* liable to *x*, we should say that although *p* is an actual property of *o*, and that *o* itself can be visually experienced, we cannot see *p* in a visual experience of *o*. The reason is that 'liability to *x*' is just not the kind of thing that we can see: we cannot see what *o* is only liable or bound to do. This is the heart of the Possibility Perception objection.

What Mumford and Weissman express in their quotes is the claim that what we can visually experience are the manifestations of dispositions. We may not be able to see that *o* is liable to *x*, but we may be able to see *o* *x*-ing at any given time. To

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[2] Ryle, D. (1949) p.41.
[3] Mumford, S. (1998) p.43.

understand this we need a grip on the difference between a dispositional property and the behavioural manifestations of that property. As Crane puts it: "[t]he fragility (solubility, elasticity) is a disposition; the breaking (dissolving, stretching) is the *manifestation* of the disposition"[4]. So what we are able to see is an object behaving in a certain way: breaking, dissolving, stretching, when certain conditions obtain. What we experience are the behavioural manifestations of dispositional properties, but not the dispositional properties themselves. If we apply this distinction specifically to affordance properties the claim is that whilst we can experience the grasping of a particular cup or the jumping of a particular puddle, what we cannot see are the properties of 'graspability' or 'jumpability' that the cup and puddle respectively possess. The behaviour and the property that causes that behaviour are separate entities, and the claim is that only the former can feature in visual experience[5].

What I want to do in this chapter is see how the Conscious Affordance Theorist can respond to this kind of objection. Although the intuition behind the Possibility Perception objection is strong, I suggest below that the Conscious Affordance Theorist can begin with an equally strong intuition. In order to make his opposition matter to the Conscious Affordance Theorist I suggest that the Possibility Perception objector needs to expand on his initial intuition, and in particular show what is grounding that intuition, in order to give it some weight. In what follows I

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[4] Crane, T. (ed.) (1996) p.1.

[5] There is no room here for a behaviorist account of dispositional properties, where having a dispositional property is exhaustively cashed as behaving in a certain way, and nothing more than that. Although this would solve the 'perception' problem insofar as behaviour can normally be seen, it presents other problems for the Conscious Affordance Theorist, notably that one can no longer appeal to affordance perception in explaining intentions to behave given that those intentions are supposed to be formed prior to any actual behaviour ensuing.

will present two main arguments which the Possibility Perception objector might use to defend or justify his phenomenological claim about the unobservability of dispositional properties. Although it is open to the Possibility Perception objector to accept only one rather than both of these argumentative paths, I will focus on the case where he takes resources from both. The first argumentative path will concentrate on his convictions about the causal production of experience, and how problems at this level result in the unobservability of dispositions. The second argumentative path will concentrate on visual phenomenology and how claims about the observability of dispositional properties are apparently left wanting when it comes to the phenomenological details of visual experience. I will call these arguments the 'Argument From Causal Inefficacy' and the 'Argument From Phenomenology' respectively.

The Argument From Causal Inefficacy

Consider the claims made so far by the Possibility Perception objector in the following schematic form:

(i) Affordance properties are dispositional properties

(ii) Dispositional properties of an object are the potentials an object has which cause it to behave in certain ways in certain conditions

(iii) Only the behavioural manifestations of a dispositional property can be visually experienced and not the dispositional property itself

What the Possibility Perception objector does is to build his case using claims (i) to (iii): he classes affordances as dispositions, then claims those dispositions cause objects to behave in certain ways, and finally he claims that only those behaviors can be observed. What is not yet clear is his reason for asserting claim (iii). Why should being 'the potential of an object to behave in a certain way' make a property unobservable? Why is the claim that affordances are potentials of objects related in any way to claims about what can and cannot feature in visual experience? To understand this relationship we need to be clear on which criterion it is for featuring in conscious visual experience that these dispositional properties, the 'potentials' of objects, are supposedly failing to meet. At this point I think the pressure falls on the Possibility Perception objector: he needs to say why potentials cannot feature in visual experience, rather than just asserting his intuition that they cannot.

To bring this out, consider that the Conscious Affordance Theorist can at this point just make a converse phenomenological claim about the content of visual experience, such that it does support the presentation of objects in terms of what they are liable to do or provide for. For the Conscious Affordance Theorist, an affordance property makes an object liable to do something, and it can be just this liability that features in our visual experience of that object. If a glass of wine is within Bob's reach, and therefore liable to be reached by him, the Possibility Perception objector says Bob cannot see this, whilst the Conscious Affordance Theorist claims Bob can. If we are to move on from this stalemate the Possibility

Perception objector needs to say more about why his phenomenological claim is the true one of the pair. To do this, he needs to ground his intuitive claim rather than simply observe it. In other words, what the Possibility Perception objector needs is a reason for saying visual experience of dispositional properties cannot come about. Whatever this reason is, it is because of this reason that his phenomenological claim is true.

One way in which the Possibility Perception objector might justify his phenomenological claim is by appealing to a different kind of claim, one about the causal production of visual experience. In doing so he can confront the issue of which properties can and cannot feature within visual experience by looking to the causal roots of those experiences. What he can argue is that only certain kinds of properties can have a causal effect on perceptual experience. The starting point for this approach will be the adoption of a causal theory of perception. Although such a theory can be stated at various levels of detail, a general form of what it involves will suffice for our current purposes: if a subject experiences property *p* as obtaining in his environment, the normal cause of his experience will be the instantiation of property *p* in his environment. Naturally there are various ceteris paribus clauses and cases of error and illusion to be kept in mind, but for our purposes the central claim of a causal theory of perception is clear: a perceptual experience of a property is caused by that property existing outside of experience. For Strawson, as subjects of experience we naturally assume just this kind of "general causal dependence of our perceptual experiences on the independently

existing things we take them to be of"[6]. So adopting a causal theory of perception is a feasible move for both the Conscious Affordance Theorist and the Possibility Perception objector to take, if they want to stay true to our 'common sense' view of visual experience.

So for the Possibility Perception objector the causal claim about visual experience can be put to use in the following way. If a perceptual experience of a property is caused by that property existing in the world, then it is fair to say the property in question has a certain causal power: it has the power to cause visual experiences of its instantiation. So it follows that any property which features in visual experience must be of the right kind to cause that visual experience. For dispositional properties to be seen, they must have a certain causal power. What the Possibility Perception objector will claim is that dispositional properties lack this causal power, and this is why they do not feature in visual experience. Hence the claim against the Conscious Affordance Theorist can be reformulated thus: when the Conscious Affordance Theorist declares that dispositional properties can feature in the content of visual experience he is helping himself to an attribution of causal power to those dispositional properties, an attribution which he has no right to make. Let us now illustrate this rather abstract causal claim and its supposed phenomenological implications by way of an example.

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[6] Strawson, P.F. (1988) p.103. His discussion of the causal nature of perceptual experience when it is given a realist construal continues over p104 & p105.

An Example of Perceptual Causal Inefficacy

The claim is that whereas we might say a subject's experience of redness in front of him is caused by an instantiation of the property 'red' in front of him, we cannot make an analogous case with dispositional properties. We cannot say that an instantiation of the property 'within reach' in front of a subject causes that subject to have an experience of within reachness in front of him. The causal link between the property existing in the world and visual experience of that property, which occurs in the case of redness, cannot come about for the property of being 'within reach'. This is allegedly the case for all dispositional properties. To persuade us of his position, the Possibility Perception objector offers the following example.

Consider Bob who is looking at a round white tablet. The Possibility Perception objector will claim that whatever dispositional properties that tablet has, Bob will not be able to see them. The reason he cannot see them is that they cannot cause him to have a visual experience of their instantiation. Say the tablet happens to be soluble, that it has the dispositional property of 'solubility'. What the objector claims is that it does not make sense to say that the tablet's property of solubility will cause Bob to visually experience the tablet as soluble. The property of solubility is just not the right kind of property to make a causal difference to Bob's visual experiences.

The objector will agree that having the dispositional property of solubility makes the tablet "bound or liable" to start dissolving when it hits water, and he allows

that Bob can know the tablet has this property of solubility. If Bob chooses to dissolve the tablet, the fact that he knows it to be soluble will be part of the reason he places it in the water. Say we ask Bob to dissolve the tablet, and in a Strawsonian[7] vein we ask Bob to give us a run down of his visual experiences as he performs this activity. What Bob reports is that before he puts the tablet in the water, he sees a round white tablet in front of him. Then, when he puts the tablet into the water he sees the water fizzing, the tablet breaking down, the subsequent layers of bubbles, and eventually, a cup of still cloudy water. The objector will have the following question for the Conscious Affordance Theorist: where in this report is Bob's visual experience of solubility? Say we press Bob on this question, and ask him why he failed to report on his visual experience of the tablet's solubility. In answer Bob will certainly laugh at us: he is not able to 'see' such things! Of course he knew that the tablet was soluble, and now he has a cup of evidence for that solubility, but nowhere along the line did he have a visual experience caused by the 'solubility' of the tablet. Bob may try to correct us further by saying that just because an object is liable to do something in a certain situation doesn't mean it should 'look' as though it has this liability.

In the face of this example from solubility, I think we can make sense of Wittgenstein's remark on the perception of dispositions:

"to this "state" there does not correspond a particular sense experience which lasts while the state lasts".[8]

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[7] Strawson, P.F. (1988) for this kind of strategy see p.94.
[8] See Wittgenstein, L. (1958) p.101.

The state of Bob's tablet being 'soluble' does not correspond to its looking a certain way to Bob for as long as it is soluble. This lack of correspondence between being soluble and looking a certain way is being cashed by the Possibility Perception objector as the necessary absence of a causal relationship between the dispositional property of solubility and Bob's visual experience. There can be no "particular sense experience" caused by the tablets solubility. For the Possibility Perception objector, dispositional properties are just the wrong kind of thing, as it were, to cause visual experiences.

Now we understand the Possibility Perception objector's phenomenological claim as being grounded in the causal inefficacy of dispositional properties, there is the subsequent question of why this causal inefficacy should come about. Why should it be the case that dispositional properties cannot cause visual experiences?

Although I do not claim them to be exhaustive of the options, there are to my mind two avenues for the Possibility Perception objector to take at this point. The first is to situate the causal inefficacy of dispositional properties in regards to visual experiences within a general causal inefficacy of dispositional properties. On this approach, the general causal inefficacy of dispositional properties is proposed to explain their inability to cause visual experiences. The second avenue is to confront the Conscious Affordance Theorist head on and say more about why the 'abstractness' of dispositional properties presents a specific problem for the causal production of perceptual experiences. I want to make a brief case for the

first of these avenues, and show why I think it is not the right one for the objector to take, before moving on to a more detailed look at the second.

(i) General Causal Inefficacy

The Possibility Perception objector might deny that dispositional properties can cause perceptual experiences because he thinks dispositional properties are generally causally impotent. That is to say, he may claim that dispositional properties cannot cause perceptual experiences or anything else for that matter. If the Possibility Perception objector has an allegiance to the general causal inefficacy of dispositional properties then their causal inefficacy in regards to perceptual experience will certainly come as no surprise. Being unable to cause visual experiences will just be part of a larger package.

Why might someone think dispositional properties are so causally inefficacious? One reason is allegiance to the claim that "[c]ausation is the prerogative of categorical properties"[9]. Consider again Bob and his soluble tablet. How should we explain the event of the tablets dissolving? Did the tablets property of solubility cause it to dissolve? For an advocate of the general causal inefficacy of dispositions, to assert that it did would be to say something false: what caused the tablet to dissolve was the fact that it had a certain microphysical chemical structure. It was this categorical structure of the tablet that caused it to break down when it was exposed to water, not its dispositional property of solubility. There are

[9] Crane, T. (ed.) (1996) p.6.

several ontological positions on the nature of dispositions[10] that one might try to use in order to argue for their general causal inefficacy, but for our current purposes I am only considering the view that considers dispositions to be properties[11], and more precisely, considers them to be causally inefficacious properties.

Adopting this argument specifically for affordance properties, consider that a particular teddy bear is said to be 'squeezable': the current claim is that what causes this teddy bear to be successfully squeezed on any given occasion is not its property of 'squeezability' but its categorical structure. In short, the causal powers that the teddy bear has result from its possession of certain categorical properties, and any talk of the teddy bear's dispositional properties or dispositional characterizations of its properties will not be talk of causally efficacious properties. So if the Possibility Perception objector holds this kind of view about dispositional properties then it follows as a natural conclusion that dispositional properties are unable to cause visual experiences.

However, I think that framing the Possibility Perception objectors claim about the perceptual causal inefficacy of dispositional properties in this way is to potentially do him a disservice. Indeed, I think that to cash his causal claim using the model of general causal inefficacy would be to misrepresent the Possibility Perception

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[10] You may claim that dispositions are 'realised' by categorical properties, that they are identical with categorical properties (see Armstrong), that they are their own independent kind of property, and that they are simply a mode of presentation of a neutral property (for the last view see Mumford's account of neutral monism in Mumford, S. (1998)). See Crane, T. (ed.) (1996) for an interchange of Armstrong's, Place's and Martin's views on the topic. These authors do not all use their ontological positions to argue for the causal inefficacy of dispositions, these are just the kinds of ontological starting points available.

[11] Mumford, S. (1998) (p.121-125) mentions that perhaps this position is incoherent – a property existing but being causally inefficacious. I think this is an interesting question, but not one I am going to pursue.

objector's position for the following two reasons. Firstly, justifying the claim that dispositional properties cannot cause visual experiences by appeal to their general causal inefficacy fails to capture what is unique about the perceptual case. Given that the Possibility Perception objection is motivated by the perceptual case alone, the appeal to general causal inefficacy risks missing out on the heart of the Possibility Perception objection. What we want to know of the Possibility Perception objector is what it is about the specific causation of perceptual experience that is problematic for dispositional properties. If his answer is simply that dispositional properties are generally causally empty then he arguably sidesteps the core issue. Secondly, the Possibility Perception objector does not in fact need to be committed to any general claims about the causal inefficacy of dispositional properties in order to make his case about the causation of visual experience. To bring this out, consider that he may object to the claim that dispositional properties can cause visual experiences, whilst supporting the view that:

"a dispositional characterization of a property picks out a property whose possession makes a real difference to the object which has it, and which can contribute to the causal interactions in which that object participates"[12]

If he holds such a view he is in direct conflict with claims about the general causal inefficacy of dispositional properties, but his claim that dispositional properties cannot cause visual experiences is not similarly excluded. All the

[12] Crane, T. (ed.) (1996) p.6.

objector need do is claim that dispositional properties simply cannot input into one specific causal interaction in which their bearer participates: the causation of visual experiences. The point is that a Possibility Perception objector does not need to make claims about the general causal inefficacy of dispositional properties in order to get his objection off the ground. Although such a move may provide him with a general explanation for his position, I do not think either the Conscious Affordance Theorist, or the Possibility Perception objector himself, should be happy with this explanation.

There is however a more fundamental reason for the Possibility Perception objector to avoid making his claim one about the general causal inefficacy of dispositional properties. The assumption that is often at work in a proposal of the general causal inefficacy of dispositional properties is that there is a kind of explanatory competition between categorical properties and dispositional properties. What this explanatory competition dictates is that there is only one causal explanation that is relevant to any given event, and that this one causal explanation involves an appeal to categorical properties. Take the cases mentioned above of solubility and squeezability: the 'real' explanation of why the tablet dissolved or the teddy was able to be squeezed was given by reference to their categorical properties. Any reference to the dispositional properties of 'solubility' and 'squeezability' was not needed for giving a causal explanation of why the tablet could dissolve or why the teddy could be squeezed. What this competitive stance takes for granted is that causal explanations are only informative when they pick out the molecular or categorical structures of objects. Certainly this kind of

explanation might be the only one appropriate within a scientific context, but from the standpoint of human psychology what are often more appropriate are explanations that appeal to the dispositional properties of objects. What the 'explanatory competition' fails to appreciate is that different causal explanations are appropriate in different contexts. Put slightly differently, the criterion for being an informative causal explanation is inherently context dependent: what is informative in one context may not be so in another. Consider Fred who is reading a deodorant canister, which says the molecules inside will gain high amounts of kinetic energy causing high pressure inside the can when it is heated. This warning about the causal effects of heat on the canister may be beyond Fred in the sense that it doesn't inform his decision of whether to leave the canister in burning sun or shade. On the other hand, consider that the canister reads: 'disposed to explode when heated'. In this case, Fred will have a clear idea of what will happen when the canister gets too hot, and so will put it into the shade. Say Fred forgets this warning, and leaves the canister in the sun. If the can blows up, it will presumably also be more informative to tell his wife that the can was disposed to blow up when it got too hot, rather than him launching into a scientific analysis of the behaviour of molecules charged with energy in confined spaces. It seems then, that the Possibility Perception objector can deny that dispositional properties are through and through causally inefficacious on the grounds that although the causal explanations they offer may be uninformative in one context, in another context those explanations may be just what are required. The point is that if we accept there is no explanatory competition between dispositional and categorical

properties, we have no grounds for saying dispositional properties are generally causally inert.

In consideration of these points, it seems that all the Possibility Perception objector should really be concerned with supporting is the more minimal claim that one particular causal relation presents a problem for dispositional properties: the causal relation between dispositional properties and visual experience. With this in mind, let us turn to the second avenue I claimed the Possibility Perception objector could take in cashing the perceptual causal inefficacy of dispositional properties.

(ii) Cashing Abstractness

I suggested above that the Possibility Perception objector has another avenue he can take in defending his claim about the causal inefficacy of dispositional properties in relation to perceptual experience. Unlike the first suggestion, taking this avenue requires no commitment to the general causal inefficacy of dispositional properties. Further, it promises to get to the heart of what it is about dispositional properties that makes them unable to cause visual experiences. What the Possibility Perception objector must do is to claim there is a constitutive feature of dispositional properties which makes them causally inefficacious with regard to visual experience. Which feature or features the Possibility Perception objector targets will be largely up to that objector. What I want to do is focus on what I see to be the most persuasive case for saying a feature of dispositional

properties makes them unable to cause visual experiences: one which focuses on the relational nature of dispositional properties.

The objector's proposal will be this: dispositional properties are too 'abstract' to cause visual experiences, and this abstractness can be cashed by appealing to their inherently relational nature. Consider again Bob's soluble tablet. According to Bob's descriptions the tablet looked to him to be 'round' and 'white'. It did not look 'soluble'. The reason for this was said to be that although the tablet could possess all three properties, only the former two could have a causal effect on Bob's visual experience. The claim to be added now is that this difference in causal power between the properties is due to the relational nature of the property of 'solubility'. The tablet is round because of the shape that it is, it is white because of the color that it is, but it is soluble because it behaves a certain way relative to a certain fluid: for most, if not all, dispositional properties, possessing them puts the possessor into a relation with something other than itself. Saying the tablet possesses the property of solubility is to say that it stands in a certain relation to water, and the proposal here is that although Bob sees the tablet, and many of its non-relational properties, he cannot see the relation in which that tablet stands to water.

The Conscious Affordance Theorist's Response

I think there is a sophisticated, and a not so sophisticated, line of response that the Conscious Affordance Theorist should make to what has been said so far by the Possibility Perception objector.

Starting with the less sophisticated line of response, the Conscious Affordance Theorist might deny that the claims formed using the case of Bob and the soluble tablet have any implications for conscious affordance perception. The reason for this response is that 'solubility' is not the right kind of dispositional property with which to draw analogies to affordance properties. This is not simply because solubility isn't an affordance property, but because it corresponds to something the Conscious Affordance Theorist delineated as being separate from affordance properties back in Chapter 1.

Recall in Chapter 1 that a distinction was made between the cultural or social functions of objects, and the basic affordances of those objects. The definition of the latter was those interactions subjects could perform with an object despite having no prior knowledge of the functions of that object. It seems that in the case of solubility we are referring to a disposition of an object that is akin to the category of 'cultural function' in the case of affordances: just as a power tool can afford 'drilling', this tablet is disposed to be 'soluble'. In neither case would we expect someone to 'see' the affordance of the drill or the disposition of the tablet if they had no supplementary knowledge about the functions of these objects. According to the Conscious Affordance Theorist, we won't be able to see the solubility of a tablet, but we will be able to see that it can be picked up. For the Possibility Perception objector there should be no difference between these cases,

given that they are both dispositions they should both be unobservable. For the Conscious Affordance Theorist however there is a clear distinction to be drawn: to be soluble is a non-observable function of the tablet, whereas to be pickupable is an observable basic affordance of the tablet. Both are dispositional properties of the tablet, but possessing the former grants the object a function that is unrelated to its visual appearance. In other words, what the Conscious Affordance Theorist is saying is that Bob would be right to laugh when asked about his perception of the tablets solubility, as solubility is not the kind of dispositional property we expect to cause visual experiences. The reason this is important is that cases such as solubility may be at the forefront of the generalized intuition that dispositions as a class of properties cannot be visually experienced. If the Conscious Affordance Theorist agrees affordances are a kind of dispositional property, then it is crucial that he fights this inaccurate generalization by showing that there are dispositions it does not apply to.

If the Possibility Perception objector thinks that all dispositional properties are causally inefficacious when it comes to visual experience, then he should be happy to consider other dispositions in his examples. In particular, cases that the Conscious Affordance Theorist agrees are not unobservable functions of objects: for instance, the dispositional properties of being 'fragile', 'slippery', 'within reach' and 'graspable'. The last two are clearly affordance properties of the basic kind defined in Chapter 1, whilst the former two are dispositions that the Conscious Affordance Theorist claims are not unobservable functions of objects, and can therefore be picked up in visual experience. To be clear, for the Possibility

Perception objector none of these properties, being 'fragile', 'slippery', 'within reach' or 'graspable', can cause visual experiences as they are just too abstract. For the Conscious Affordance Theorist on the other hand, there is reason to think all of these properties can cause visual experiences.

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The more sophisticated (and perhaps more interesting) response from the Conscious Affordance Theorist takes issue with the claim that the relational nature of dispositional properties makes them abstract in a way that prevents them from causing visual experiences. The Conscious Affordance Theorist has two options at this point: either deny the relationality of dispositional properties or deny that this relationality is a problem for their having the power to cause visual experiences. I will be pursuing the latter option.

Let us recast the supposed problem of the relationality of dispositional terms using our new examples: what it is to be fragile is to break relative to an amount of force, what it is to be slippery is to be unsupportive relative to an amount of mass, what it is to be within reach is to be reached relative to a particular reacher and what it is to be graspable is to be grasped relative to a particular grasper. What the Possibility Perception objector has claimed is that it is these relational commitments of dispositional properties that prevents them from being able to cause visual experiences. Something about the relational nature of dispositional properties makes them unable to cause visual experiences.

Supposing for a moment that this were right without any further qualifications, what is visual experience supposed to be reserved for? Presumably visual experience of objects and their properties would have to be solely constituted by the perception of non-relational properties, as only non-relational properties can cause the subject to have visual experiences. Seeing an object as a tree, as being green leaved, and as bearing fruit, is presumably a paradigm case of seeing the 'non-relational' properties of an object[13]. Although these properties no doubt cause visual experiences, the claim that they are the only properties that cause visual experiences cannot be right. The immediate worry is this: if relational properties are unable to cause visual experiences a subject would not be able to see what are quite basic relations between the objects in his environment. Surely the Possibility Perception objector doesn't want to rule out that a subject looking at a tree can see that tree to be larger than the other trees in the orchard, or as being located in the middle of five other trees? If the relational nature of dispositional properties makes them unable to cause visual experiences, then the subject should not be able to see these basic non-dispositional relational properties of the tree.

The objector will begin the qualifications of his account at this point, saying that of course he does not want to deny that such basic relational properties can cause visual experiences. Indeed, his target is not relational properties in general. What the Possibility Perception objector will say is that his concerns do not apply to relational properties per se, but only to a particular kind of relational property. It is this special kind of relational property, of which dispositional properties are an

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[13] Of course, presuming we agree that these properties are non-relational. If colour is problematic, other properties such as size and shape can be substituted for it.

example, which cannot cause visual experiences. He will claim that the relational properties he is concerned with are those which involve a 'hidden' or unobserved relatum in their constitution. In the four examples we are working with, fragile, slippery, within reach and graspable, the hidden relata are the force needed for breakage to occur, the mass needed for slipping to occur, and the reacher and grasper needed for reaching and grasping to occur. What the objector wants to claim is that owing to the fact that these relata are not available for the subject to visually experience, the relations involving them must be similarly unavailable. The involvement of hidden relata makes these cases of relational properties fundamentally different to the spatial relational properties of the tree mentioned above. In the case of the tree, all of the constituents of the relation - the tree in question and the other trees in the orchard - are present to visual experience.

There are two responses the Conscious Affordance Theorist can make to this qualification.

The first is that even in the case where the relata of a relational property are not both present to visual experience, subjects can still experience the presence of the relational property. Consider our four examples: fragile, slippery, within reach and graspable. The first thing to get clear is that in our examples the reason for the 'hidden relatum' is not the same in each of the four cases. Suppose a thief is looking at a Ming vase in the middle of a slippery floor. The claim that he cannot see the fragility of the vase turns on the fact that the force needed to break the vase is not present in his visual experience. The claim that he cannot see the slipperiness of the floor, or the within reachness and graspability of the vase as he

approaches it, are all supposed to turn on a different kind of invisible relatum. In these three cases, it is the thief himself who is the hidden relatum: he is not present as a component of his visual experience and yet he is the relatum to which the floor is slippery, and to which the vase is within reach and graspable. So the question is this: is it the case that because the subject cannot see himself or the force needed to break the vase he cannot see the vase as being fragile, within reach and graspable, or the floor as slippery? The Conscious Affordance Theorist claims not. The thief will see these properties of the vase simply by looking at the vase. Consider back in the orchard that the subject not only sees that the trees are spatially related to one another, but he also sees that one tree appears 'closer' than the others. What he is seeing in this case is that one tree is closer to him than the other trees are. This basic spatial relation is not a mystery to him, despite the fact that he, the second relatum of the relation, is not represented in the content of his visual experience. If this non-dispositional case is unproblematic, why should the cases of 'slippery', 'within reach' and 'graspable' not be similarly unproblematic? The onus is surely on the Possibility Perception objector to show why they are different. Furthermore, consider that one of the trees in the orchard has been blown down in recent gales. Can the subject not see this tree as having 'blown down'? Certainly he cannot see the force of the wind as he visually experiences the knocked down tree, but surely he can see the tree as having blown down? According to the Conscious Affordance Theorist he can see the tree as having blown down, as relational properties can cause visual experiences whether or not

their 'realizing conditions' are present. The point is that the relational property itself is present, and that is what causes the experience.

The second response from the Conscious Affordance Theorist is this: the heart of the issue cannot be the fact that dispositional properties are relational properties that involve hidden relata, as there are cases of dispositional properties that do not involve such hidden relata which the Possibility Perception objector will maintain cannot cause visual experiences. Consider the case of something being slippery. If a subject is watching a clown walking towards a patch of wet floor, he seems to have both relata needed for seeing the relational property of being slippery: he can see the patch of wet floor and the mass walking toward it. If both 'ingredients' are present, why can the subject not see the floor as slippery for this clown? Indeed, it may be the linchpin of a slapstick comedy act that the subject can see the floor as slippery for the clown in question.

It seems that what the Possibility Perception objector is after is a more intangible claim, such as the claim that relations themselves just cannot be seen regardless of whether or not their constituents are present to visual experience. But if so, it needs spelling out what exactly this kind of claim means. As it stands, it is not clear how the Possibility Perception objector could maintain this kind of claim whilst conceding the observability of non-dispositional relational properties. In other words, if he is to deny that 'relations' can be seen for some reason or another he is back at the beginning, denying that one tree can look larger than its neighbours.

For the Conscious Affordance Theorist, the causal argument has turned out to be unconvincing. The claim has been that dispositional properties are causally inefficacious when it comes to visual experience. The reasons proposed to explain this causal inefficacy have been the general causal inefficacy of dispositional properties, and the fact that dispositional properties have an abstract relational nature that prevents them from causing visual experiences. Neither reason has convinced the Conscious Affordance Theorist of the causal inefficacy of dispositional properties when it comes to visual experience.

What I want to do now is move on to the second of the strategies I outlined in the introduction to this chapter, and see whether this strategy offers a more fruitful way for the Possibility Perception objector to defend his claim about the unobservability of dispositional properties.

The Argument From Phenomenology

So leaving the causal argument behind, I want now to turn to what I claimed to be the second line of argument the Possibility Perception objector might take in making good on his claim that dispositional properties cannot enter into visual experience. The current line of argument works from the standpoint of phenomenology, and it uses the claim that there is no visual phenomenology that we can readily associate with 'seeing a disposition' in order to argue for their unobservability.

When a subject visually experiences a categorical property of an object, it is often said that there is something it is like for him to have that experience: having a visual experience of 'redness' or a visual experience of 'squareness' will each have a distinctive phenomenology to it. The question is; is there also something it is like to see 'fragility'? The Phenomenological Argument says there is not. If we try to imagine 'seeing fragility' we cannot bring to mind anything it is like for us to have that experience. If we imagine seeing 'squareness' we can easily bring to mind what it is like to see a square shape, but what is brought to mind when we think of seeing 'fragility'? Nothing is brought to mind according to the Phenomenological Argument. Yet, if dispositional properties actually feature in visual experience, then bringing to mind their distinctive phenomenology should not be a problem. Hence, the rhetorical question levied at the Conscious Affordance Theorist is this: if dispositions are visually experienced, then what is it like to see one? Given that the proponent of the Phenomenological Argument thinks this question cannot be answered, he concludes that it is a mistake to think dispositional properties can feature in visual experience.

Although this line of argument is in principle separate from the one involving claims about the causal inefficacy of dispositional properties, the two arguments are certainly complimentary insofar as this line of argument promises to provide a kind of evidence for the truth of the causal claim. If dispositional properties were able to cause experiences, wouldn't there be something it is like to experience them?

One way of elaborating the intuition at work in this objection is by applying it to the Thought Theorist's position from Chapter 3. Recall that the Thought Theorist is someone who thinks affordance awareness is a matter of having causal indexical thoughts, and not visual experiences. A Possibility Perception objector could combine the Thought Theory and the Phenomenological Argument to say that the lack of phenomenology associated with the idea of dispositional property perception is a symptom of the fact that the Conscious Affordance Theorist is conflating visual experience with thought about visual experience. In making such a conflation he mistakenly thinks that what we visually experience are the dispositional properties of objects, when in reality the dispositional properties of objects are something we only have thoughts about. This could certainly be how the Thought Theorist would use the Phenomenological Argument.

Let us now see how a proponent of the Phenomenological Argument, an objector to the Conscious Affordance Theorist, might go about establishing his intuition that dispositional properties have no associated visual phenomenology. More will need to be said by way of establishing this intuition because at this point the Conscious Affordance Theorist will simply object that there is a distinctive visual phenomenology associated with seeing something as within reach or fragile, just as there is with seeing it to be square. What the proponent of the Phenomenological Argument needs to do is convince us that the Conscious Affordance Theorist is mistaken in his intuition: although there might be something it is like to have the thought that an object is fragile, there is nothing it is like to see that object as fragile. In order to convince us of his position, what the

proponent of the Phenomenological Argument needs to do is isolate a level of basic visual phenomenology that has all thought stripped away from it. At this level, he needs to show there is nothing it is like to see a dispositional property, where there remains something it is like to see a non-dispositional property. In other words, what he needs to do if his intuition is to triumph is to separate a subjects ability to apply concepts to his experience from the basic visual phenomenology the subject enjoys by having that experience. The claim will then be that in order for conscious affordance awareness to qualify as a genuinely visual experiential phenomenon, there must be something it is like to see an affordance property at this basic, non-conceptual level. If there is no such basic phenomenology associated with affordance perception, then the conclusion is that affordance properties are not components of visual experience. Let us move to seeing how the proponent of the Phenomenological Argument might make his case in these terms.

Take an example of two subjects looking at a glass sphere situated between them. Bill is a concept user, whilst Bob is not. What we will say of Bill is that he sees 'a sphere' in front of him. For Bill to have such an experience requires that he possess the concept sphere. Bob on the other hand does not have the concept 'sphere' as he is not a concept user. So what does Bob see when he looks at the sphere? By definition Bob cannot see 'a sphere' as Bill does. But do we not want to say that the sphere still has a causal effect on Bob's experience? Do we not want to say that Bob is still seeing what Bill and you or I would call 'a sphere'?

According to the current line of argument pursued by the Possibility Perception

objector, we should say that Bob would have a visual experience that is in some crucial respect the same as Bill's. All that will be missing from Bob's experience are the concepts needed to describe that experience. So what is this 'crucial respect' in which Bill and Bob's visual experiences are the same? The claim is that there is a basic visual phenomenology that comes with seeing what is in fact the glass sphere, and this basic 'what it is likeness' remains separate from the tools used to describe that experience. It is this basic phenomenological visual experience that is the same for both Bill and Bob. The same properties that are affecting Bill's experience will affect Bob's experience, and this provides a level of phenomenological commensurability between their experiences: they will enjoy, as it were, the same visual snapshot of the sphere. The difference between them is that Bill's visual snapshot also happens to be permeated with concepts, whereas Bob's experience is by definition free from these concepts.

The next step in the argument is to claim that the property of being 'spherical' is entirely different to the properties of being fragile, slippery, within reach and graspable. In the case of these dispositional properties it would make no sense to say there would be any commensurate visual phenomenology between Bill and Bob's experiences, where Bill is able to use the concepts fragile, slippery, within reach and graspable and Bob is not. The reason for this is that there is supposedly no 'basic phenomenology' involved in being aware of a dispositional property, and so no such phenomenology can be shared between the two men. Unlike the case of Bob's experience being affected by the de facto shape, structure and texture of the

glass sphere, we cannot imagine Bob's experience being affected by the de facto fragility, slipperiness, within reachness and graspability of that sphere.

This may seem strange, as prima facie the same intuition that tells you Bill and Bob both see what is in fact 'sphericity' without Bob knowing what sphericity is should tell you that Bill and Bob both see what is in fact 'fragility' without Bob knowing what fragility is. The Phenomenological Argument claims this intuition is disappointed in the case of fragility, that Bob's visual experience does not have a commensurability with Bill's that we can only explain by saying that what they both see is the de facto 'fragility' of the sphere. The reason for this claim is that in the case of fragility Bill isn't having a visual experience of fragility at all. If he were, there would be a basic visual phenomenology associated with that experience, and it would be this phenomenology that Bob could still pick up on despite his lack of the concept 'fragile'. According to the Phenomenological Argument, what is really happening in Bill's case is that when he looks at the sphere he has a thought about its fragility: any distinctive phenomenological experience Bill has when noticing the sphere's fragility should be attributed to this thought, and not to anything he visual experiences. In sum, the proposal is that neither Bob nor Bill will have a visual experience of the sphere's fragility, but what can happen in Bill's case, unlike Bob's, is that Bill may have a thought about the sphere to the extent that it is fragile, and it is this conceptual thought that Bob will fail to have.

The aim of this Phenomenological Argument therefore is to claim that because there is no basic phenomenology that comes to mind with the idea of seeing

something as fragile, slippery, within reach, or graspable, these properties should not be thought of as constituents of visual experience. So the Possibility Perception objector can use this argument to claim that if dispositional properties only supposedly have an effect on visual experience when concepts are present in that experience, this is a symptom of the fact that we are not dealing with perceptual experiences here at all: we are dealing with thoughts about experience. Indeed, the Conscious Affordance Theorist is being accused of being a kind of 'thought theorist' in disguise.

The Conscious Affordance Theorist's Response

So the Phenomenological Argument has two main claims: (a) visual experience has a basic non-conceptual layer which subjects can enjoy without possessing concepts, and (b) at this level of experience there is nothing it is like to see an affordance property. I want to consider two responses to this argument. The first response denies that (a) is true of human experience, and so is untroubled by (b). This is what I will call the Bold View of perceptual experience. The second response takes a more liberal stance, and claims that although the Bold View may be right that much of our mature human visual experience is imbued with concepts this is not enough to deny that there is a basic non-conceptual layer to that experience. Further, it is by appreciating this kind of basic layer in visual experience that we understand the perceptual experiences of animals. I will call this the Liberal View of perceptual experience, and the way in which it defends

against the Phenomenological Argument is to accept (a) but deny the truth of (b), and this denial is made on the grounds that the Phenomenological Argument fails to appreciate what a non-conceptual layer of experience can make available.

The Bold View

The claim from the Bold View is that any prima facie intuitive power the Phenomenological Argument has relies on us holding a mistaken view of mature human visual experience. Once we make clear what human visual experience is like, the Phenomenological Argument will no longer seem appealing. The view has two main components. The first component denies that the Phenomenological Argument singles out a genuine level of visual experience, and so denies that for something to count as a visual experience it must have a non-conceptual phenomenology. The second component claims there is something it is like to see a dispositional property just as there is something it is like to see a non-dispositional property, but that both kinds of visual phenomenology depend on the presence of concepts in experience.

So the Phenomenological Argument only goes through if there is a 'basic' level to experience, where objects and their properties can feature within a subjects visual experience without his having the concepts with which to identify those objects and properties. What the Bold View does is just deny that such a basic

level of visual experience exists when it comes to the case of mature human visual experience. In the case of viewing the glass sphere, the Bold View admits there is no shared 'basic' level of experience between someone who has the concept of fragility and someone who does not, but also claims there is no shared 'basic' level of experience between someone who has the concept of sphericity and someone who does not. The reason for this is that if a subject lacks the concepts fragility and sphericity he will not recognize the presence of those properties in his environment.

In effect what the Bold View wants to do is press the Phenomenological Argument on what exactly it means to have 'an experience of something that is in fact a sphere' when one lacks the concept 'sphere'. The Phenomenological Argument claims that the subject of this concept free experience would still experience the object that we would call a sphere. This was the case of non-conceptual Bob and the glass sphere: his experience supposedly presented to him a shaped, transparent object located in his visual field, despite the fact that he lacked concepts with which to characterize that experience. For the Bold View this is simply nonsense. In order for Bob to have a visual experience that presents to him the de facto glass sphere Bob would need (at least) the concept 'sphere'. He wouldn't be able to single out or attend to the sphere or any of its properties without possessing the concept 'sphere'. The point is that for the property of sphericity to grab Bob's attention, for him to notice any causal effect it has on his experience, Bob would need to be able to single out and identify the property of sphericity. To do this, Bob would need the concept of sphericity. If Bob has no

such concept, then we should not say that he notices or is in any meaningful way 'experientially aware' of the presence of that property in his environment.

So why does a proponent of the Bold View place such emphasis on the need for concepts in visual experience? According to the Bold View our common sense notion of mature human visual experience has two important features: firstly it is realist, and secondly it is conceptual. For the Bold View, the realism of perceptual content is inherently dependent on the conceptuality of that content. It follows that if a subject were to have non-conceptual experiences those experiences would not be experiences of a mind independent world. What the Bold View claims is that mature human visual experience does present us with a mind independent world, and it does so via its infusion with realist concepts. For Strawson, these two fundamental features of experience are exposed by the fact that we could not make the perceptual judgments that we do about our experiences unless those experiences were permeated with realist concepts:

"Our perceptual judgements, as Ayer remarks, embody or reflect a certain view of the world, as containing objects, variously propertied, located in a common space and continuing in their existence independently of our interrupted and relatively fleeting perceptions of them. Our making of such judgements implies our possession and application of concepts of such objects. But now it appears that we cannot give a veridical characterization even of the sensible experience which these judgements, as Ayer expresses it, 'go beyond', without reference to those

judgements themselves; that our sensible experience itself is thoroughly permeated with those concepts of objects which figure in such judgements"[14]

So for the Bold View the only level of "mature sensible experience"[15] that we can make sense of is one that is inherently imbued with realist concepts. We cannot tease apart a non-conceptual layer of that experience when asked to do so: if someone were to try describing seeing a glass sphere without taking for granted the realist concepts imbuing his experience, the best he could do is to say 'it looks to me as though I am seeing something that I would call a glass sphere'. In other words, there is no more basic characterization of his experience to be had, either from the point of view of having that experience, or from the point of view of describing it.

Schematically then the situation looks like this: the Phenomenological Argument says that if a property only affects a subject's visual experience through that experience being imbued with the concept of that property, his awareness of the property is actually an instance of thought rather than visual experience. The rationale for saying this is the proposal that there exists a phenomenologically basic, concept free layer of visual experience in which any property has to feature in order to count as being visually perceived. The test for whether or not a property does feature in this level of experience is whether or not there is anything it is like for a non-concept user to experience that property. The Bold View has now claimed that this phenomenologically basic layer of experience does not exist in

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[14] Strawson, P.F. (1988) p.95-96.
[15] ibid. p.93.

the case of mature human visual experience. The actual criterion for whether or not a subject visually experiences a property obtaining in his environment is whether or not his experience is imbued with a concept of that property. As a result, for the Bold View affordance properties such as 'graspability' are akin to shape properties such as 'sphericity' when it comes to being phenomenologically present: if a subject's experience is imbued with the concepts of graspability and sphericity, then the presence of those concepts will bring a distinctive 'what it is likeness' to his visual experience. The mark of a property featuring in visual experience is not the presence of a non-conceptual phenomenology that comes with seeing that property, but the presence of the concept of that property in experience.

The Liberal View

What I want to suggest is that in their own ways both the Phenomenological Argument and the Bold View misconceive the reality of human visual experience. Starting with the Bold View, by tying conceptual awareness to being conscious of properties in one's environment it fights off the Phenomenological Argument at the cost of being unable to explain the perceptual consciousness of non-concept users[16]. If we agree that the Bold View is right, then we will be unable to conceive of the kind of visual consciousness that animals possess, if indeed we have reason on this view to say they possess any at all. On the Bold View for us to be visually

[16] I do not include infants here, as there is contention over whether infants are in fact primitive, proto concept users. If this is true, then infants are not obvious subjects of non-conceptual perceptions. I stay with the animal case to keep points as clear as possible.

conscious of a property obtaining in our environment just means for us to have a visual experience imbued with a concept of that property. If an animal were to have a visual experience of a property obtaining in its environment without its experience being imbued with a concept of that property, we would be unable to understand its visual phenomenology. The same goes for non-concept users perception of affordances: if in fact they do consciously perceive affordances in the same way they perceive other properties we would be unable to understand what it is like for them to do so. As the Bold View ties perceptual consciousness to concept use in the human case, any visual consciousness enjoyed by non-concept users will be a form of visual consciousness that we cannot understand. For the Liberal View, this is a limitation that is unacceptable and should be taken as symptomatic of the inadequacy of the Bold View. Although it may be true that much of adult human visual experience is conceptual, it is too strong to say that the mark of our conscious visual experience is its permeation with concepts. The reason it is too strong is that contrary to the Bold View we have a powerful intuition that animals are perceptually conscious in a way that we can understand or analogize with on the basis of our own perceptual experience. It is because of this that we also have an intuitive sense that there must be something it is like for animals to perceive affordances despite their being unable to conceptualize those affordances.

The first thing the Liberal View suggests we should do is recast what we take to be the trademark or defining feature of visual experience. For the Bold View the mark of visual consciousness is its conceptuality. To have a conscious visual

experience you have to be a concept user. For the Liberal View on the other hand, visual experiences can be conscious just because they are had from an attentive point of view, regardless of the involvement of concepts. Once we have a subject who can attend selectively to parts of the world he is located in, we have the notion of a subjective conscious point of view on that world[17]. The core claim of the Liberal View is that there is a layer of non-conceptual visual experience that can be enjoyed by anyone with a conscious point of view on the world. Unlike the Bold View, what the Liberal View suggests is that animal and human subjects can be conscious of their environment without having conceptual awareness of that environment.

The second thing the Liberal View suggests is that once we have recast our notion of visual experience we are free to admit that animals experience affordances. That is to say, animal and human subjects who are visually conscious of their surroundings will experience the affordances of those surroundings regardless of whether or not they possess concepts of those affordances. This is where the Liberal View starts to take issue with the Phenomenological Argument. The Phenomenological Argument, like the Bold View, ties conscious affordance perception to concept use, but it does so because it thinks affordance awareness is not a genuinely visual phenomenon. For the Phenomenological Argument, affordance awareness is a matter of thought, not perception, and this is indicated

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[17] Eilan, N. (1995) expresses a version of the view that selective attention brings with it perceptual consciousness: "Perceptions are conscious just so long as they are the possible contents of focal attention, where being a possible content of focal attention just is a matter of being within the attentional field" p.351. It is also an interesting question to what extent non-visual perceptual attention could bring with it the idea of a conscious subject.

by the fact that there is nothing it is like for a non-concept user to see an affordance. However, according to the Liberal View the proponent of the Phenomenological Argument is simply misconceiving what is made available by his own notion of non-conceptual experience. Admittedly the non-conceptual phenomenology of seeing an affordance property may be nothing like the non-conceptual phenomenology of seeing a categorical property, but we shouldn't be misled by this into the conclusion that there is nothing it is like to see an affordance property at the non-conceptual level. Indeed, the Liberal View will claim, this conclusion goes against our natural intuitions that animals are conscious affordance perceivers: that despite his lack of concepts we want to say there is something about a giraffe's conscious visual experience that causes him to reach for one set of branches over another, where only the first are within his reach. For the Bold View we can make no comment on this giraffe's 'visual experience' as it falls beyond the remit of our human notions of 'visual consciousness' and 'affordance awareness' by virtue of being non-conceptual. For the Phenomenological Argument, although the giraffe may be visually conscious, his reaching for one set of branches over another can be no more than luck, instinct, or the work of non-conscious mechanisms. For the Liberal View however, the giraffe is both visually conscious and able to choose which branch he reaches for on the basis of how those branches look to him. To make his choice, he relies on a non-conceptual form of conscious affordance perception. The upshot of the Liberal View is that there is a visual phenomenology attached to conscious

affordance perception just as there is to shape or colour perception, and this phenomenology remains when we strip away the concepts from visual experience.

If the Liberal View is sustainable then the Conscious Affordance Theorist can make the following two moves. Firstly, he can refrain from committing himself to the Bold View and the claim that we cannot, by way of principle, understand how non-concept users consciously experience affordances. Indeed he can avoid the general claim that if non-concept users are conscious at all they are conscious in a way incommensurable with the human case. Secondly, he has materials to reject the Phenomenological Argument posed by the Possibility Perception theorist. The argument was that affordance perception has no distinctive non-conceptual phenomenology to it, and therefore seeing an object as affording a specific activity is actually a form of thought and not visual experience. What the Conscious Affordance Theorist can do, using the Liberal View, is reject the claim that there is no such thing as non-conceptual conscious affordance perception. The reason he can do so is that the Liberal View makes only the minimal claim that conscious experience is tied to the ability to selectively attend to one's environment, and not to having conceptual awareness of that environment. What both the Bold View and the Phenomenological Argument do, albeit to serve different ends, is to make the unjustified and quite weighty assumption that conscious affordance awareness and conceptual awareness are inherently tied. This is an assumption the Liberal View rejects. For the Liberal View, any subject that can visually attend to a property in his environment will have a visual experience of that property, where this includes affordance properties. On this view, affordance properties are akin to

shape properties when it comes to visual experience: an experience of an affordance property has a distinctive phenomenology to it just as the experience of a shape property does. These phenomenological experiences may be quite unlike one another, but this is only what we should expect given that they are different kinds of properties.

In the next, and final chapter I want to look more closely at how allegiance to this Liberal View on perceptual experience enables the Conscious Affordance Theorist to propose a minimal definition of conscious affordance perception that can apply to concept users and non-concept users alike. The aim of the chapter will be to provide an explanation of why it is that a subject's selectively attending to his environment can cause him to experience the affordance properties of that environment. For now, I want to end this chapter by asking whether the Conscious Affordance Theorist has succeeded in defeating the Possibility Perception objection.

The Possibility Perception objection made the claim that because affordances are dispositional properties they cannot feature in visual experience. The reason they cannot is that dispositional properties have a 'potentiality' to them which makes them unsuitable candidates for visual experience. I considered two expressions of this objection. Firstly, the 'Argument from Causal Inefficacy' that claimed dispositional properties are unable to cause visual experiences. Secondly, the 'Argument from Phenomenology' that claimed dispositional properties have no basic visual phenomenology attached to them. It does not seem after discussion that either of these expressions of the main objection presents an insoluble

problem for the Conscious Affordance Theorist. As to the argument from causal inefficacy, the onus is on the proponent of this argument to find a convincing way to ground and explain his claim that dispositional properties are unable to cause visual experiences. As to the argument from phenomenology, the proponent of this argument needs to support his rather stipulative claim that affordance awareness is different to categorical property awareness insofar as it relies on the subject possessing concepts. At the least I think he needs to find fault with the Liberal View's minimal claim that visual experience provides for non-conceptual awareness of affordance properties just as it provides for the non-conceptual awareness of categorical properties.

Chapter 5: Primitive Perceivers & Affordances

By adopting the Liberal View of perceptual experience the Conscious Affordance Theorist commits himself to two claims. The first claim is that there is an element of commensurability between the visual experience of concept users and the visual experience of non-concept users. The source of this commensurability is a shared level of basic visual phenomenology which results from objects and their properties making a difference to visual experience regardless of whether or not a perceiver possesses concepts of those objects and properties. The second claim is that any subject with a conscious point of view on the world, such that he can selectively attend to that world, will be a conscious affordance perceiver. All it takes for a subject to consciously experience the affordances of his environment is that he be able to attend to those affordances. Again, a subject will not need to possess concepts of affordances in order to experience them. What I want to suggest is that allegiance to both of these claims provides the Conscious Affordance Theorist with a minimal definition of conscious affordance perception: if a subject has a conscious point of view on the world enabling him to selectively attend to the contents of that world, he will be able to visually experience the affordances that are present within that world. In this chapter I want to look more closely at what this minimal definition of conscious affordance perception involves, and see whether it is a minimal definition that the Conscious Affordance Theorist should be adopting.

One prima facie response to this minimal definition of conscious affordance perception may be that it is equivocating the terms 'subject' and 'agent': can we not imagine a subject who is perceptually conscious and able to attend to the world in which he resides without his being able to act upon that world? If so, why would he experience 'affordances for his action'? The intuition is that he would not. In that case, we have a subject who defies the minimal definition of conscious affordance perception: he is visually conscious and able to selectively attend to his environment, but he does not experience the affordances of that environment. However, even if we overlook the fact that such a case would be an extreme one, there is a much larger question to be answered about what this subject's attention to his environment is supposed to be doing for him. What I want to suggest later on is that in the majority of cases concept-users and non-concept users employ their visual attention to the environment in the service of their action. That is to say, they visually attend to aspects of the world in order to answer questions about how they should or could go about acting in that world. This proposal will be spelled out in the case of both concept-users and non-concept users alike in the sections below. For now, I want to be clear on the role selective attention is playing in this minimal definition of conscious affordance perception.

The first thing to make clear is that there are two ways in which we can cash the notion of objects and their properties making a difference to basic, non-conceptual visual experience, and the minimal view of conscious affordance perception is only interested in one of these ways. Consider the property of redness that an object might possess. There are two ways in which this redness might causally

affect a non-concept using subject's visual experience. On the first way, all we should say is that the redness makes a causal difference to his experience. On the second, we should say that the redness not only makes a causal difference to his experience, but that he is able to notice the redness. In understanding the difference here, let us consider an example from John Campbell concerning colour properties[1]. In tests for colour blindness, arrays of dots that differ only in their colour are presented to a subject. Whereas colour blind subjects see only an array of dots, those with intact colour vision see a number situated within that array of dots. The reason for this is that a line of similarly coloured dots traces through the array, spelling out a number. For Campbell this is an example of how colour properties can have a causal effect on a subjects experience without those properties being noticed by the subject. Although a subject might not be attending to the colours of the test diagram, those colours are having a causal effect on his experience: they are enabling him to see the number. The claim is that a subject who lacks all colour concepts, and has never in his life attended directly to a colour property, could still pass this number test providing he has normal colour vision. As Campbell puts it, the property of colour is acting as an object-defining characteristic without itself being noticed. This is not the way in which the minimal notion of conscious affordance perception wants to conceive of affordance properties making a difference to a subject's experience. For the minimal definition, the subject has to be aware of the affordance properties that are

[1] Campbell, J. (2006).

causally affecting his experience[2]. That is to say, only subjects who are able to attend to the affordances of their environment will count as conscious affordance perceivers. The ability to visually attend to an affordance is a prerequisite for what the minimal definition means by being 'conscious' of that affordance.

There are two questions that I want to levy at this minimal view of conscious affordance perception: firstly, is this commitment to attention actually a commitment to concepts in disguise, and secondly, what is it that makes a subject attend to the affordances in his environment? To put the second question differently, if selective attention makes a subject aware of the affordances of his environment, what guides that selective attention?

Let us start with the first of these questions, and then move onto the second using the rest of this chapter. It does seem that the Conscious Affordance Theorist can bring in the necessary involvement of attention in conscious affordance perception without claiming that subjects also need concepts in order to attend to the affordances of their environment. Another example from Campbell brings out what is perhaps a basic distinction between being able to use attention to perform a task and being in possession of concepts. Again, using the case of colour properties, Campbell claims that we can make sense of a subject who is able to match, sort and group coloured objects or colour swatches without having any colour concepts. Although this subject clearly attends to the colour at hand, given that it is the relevant task variable, he has no concept of that colour. For Campbell

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[2] He does not have to be aware of how those properties are affecting his experience – he does not need to know about objects and their properties, or the causal enabling conditions of perceptual experience, for instance. All the subject need be able to do is visually attend to the properties affecting his experience.

these abilities are insufficient for having a grasp of colour concepts, as grasping colour concepts requires a subject to be aware of colour properties as something upon which causal intervention is possible. This idea of causal intervention and its relationship to concept grasp will be returned to later when we look at how concept users treat the affordances they experience. For now, suffice to say that we can make sense of the role selective attention is playing in the minimal view of conscious affordance perception without having to introduce concept grasp to that minimal view.

A Modified Minimal View

I want now to make progress on the second question we introduced above, the question of why a subject selectively attends to affordances, by starting with a possible concern one might have with the minimal view of conscious affordance perception. It may seem that the minimal view alone is not enough. The intuition here is that in order for a subject to consciously experience the affordances in his environment he not only has to be capable of attending to those affordances, he surely has to be looking for those affordances in the first place? According to this intuition, we might think a 'modified' minimal view is more suitable for the Conscious Affordance Theorist to adopt: on this modified minimal view there are two steps to establishing the minimal notion of conscious affordance perception. Firstly there is the claim that subjects are conscious perceivers able to attend to the various parts of the world they encounter. This is the claim made by the minimal

view of conscious affordance perception. The second claim however is that conscious affordance perception results from a subject asking questions of his environment. According to this modified minimal view of conscious affordance perception, taking the second step places the first step in a kind of context: subjects visually attend to their environments, and the reason they do so is to answer questions which they direct at those environments. Together, these steps provide the modified minimal view of conscious affordance perception: if a subject can consciously attend to his environment in the service of answering his action related questions, he will be a conscious affordance perceiver. Consider an example: if a subject is keen to get to the buffet table at a reception, he will be looking for how he can successfully get through the crowds. According to the modified minimal view of conscious affordance perception, this is the kind of situation where we should understand conscious affordance perception as happening. In other words, when the subject looks at the crowd, he is attending to the spaces between the people looking for those spaces which afford him passage. His visual experience of a space as 'affording passage' comes as a result of his asking the environment where he is able to move.

What I want to do is suggest that although there is something right about this modified minimal view, it is unable to serve as the minimal definition of conscious affordance perception. After demonstrating in the next section why I think it cannot serve as this definition, I will move on to looking at the details of how I think it can contribute to our understanding of conscious affordance perception.

The modified minimal view of conscious affordance perception claims that conscious affordance perception only happens when a subject is trying to acquire knowledge about his environment in the service of his action. According to this modified view, subjects will intentionally seek out the affordances of objects in order to fulfill their intentions to act in certain ways. For instance, if a subject wants to swat a particularly annoying fly, he will look around his office searching for an object that affords swatting. Had he not been attending to the environment in the service of this question, he would not have consciously perceived any of its objects as affording 'swatting'.

Something about this has to be right, insofar as we sometimes see affordances that we would perhaps not usually see: i.e. that a textbook affords swatting. The problem is that the modified minimal case is tying together intention and conscious affordance perception too strongly, such that conscious affordance perception is being said to work only in the service of a subject's intentions. This same impression may have been given from Chapter 2, where it was claimed that conscious affordance perception plays an essential role in the formation and explanation of intentions to act. What I want to suggest is that this is just one role that conscious affordance perception might play, and hence, the modified minimal view cannot serve as the minimal view of conscious affordance perception.

Precisely, I want to claim that conscious affordance perception can influence a

subject in more primitive ways than causally affecting his intentional action. Conscious affordance perception can influence both a subject's perceptual experience and his behaviour without him either intending or inviting this influence. I think initial support for these two influencing effects of conscious affordance perception can be found by looking at (a) the effects of emotion on perceptual experience and (b) the effects of habit on behaviour.

The claim then is that selective attention and conscious affordance perception do not operate exclusively in the service of a subject's intentional actions. Let us start by considering the effect emotions might have on selective attention. Emotions are not under our control in the same way that decisions are; yet it seems that our emotions can influence the way we attend to our environment, and therefore they can influence the kinds of conscious affordances that we perceive. Consider the case of sudden emotional states. Imagine a subject standing in his kitchen at night when he hears a crash coming from the living room. Without consciously asking any questions of his environment, or forming any particular intentions, he may suddenly find his attention drawn to the weapon-like items surrounding him: he may see that a particular heavy pan is within reach, or that a particular knife on his left is graspable.

Whether or not the emotion case counts as an example of involuntary selective attention, there are cases where the involuntary nature of attention can be made quite explicit. There are cases where selective attention can actually work against a subject's intentions or goals. It is not just that these acts of attention are involuntary; it is that they are counterintuitive given the intention the subject has

in mind to execute. In some cases, a subject can attend to the world, see an affordance, and act on that affordance, whether or not doing so concords with his current intention or goal. There are everyday examples of a phenomenon we can call 'action slips'[3], where a subject intends to do one thing and ends up doing another more familiar (or perhaps desired) activity. However, as always, the most striking example of this phenomenon is to be found in neuropathology.

Riddoch et al.[4] worked with a subject, ES, who would on occasion display a loss of task based or intentional control over her actions. In some experimental setups ES made behavioural responses that "were activated from learned associations between visual representations and actions"[5] rather than being caused by specific task instructions. In other words, something about the experimental setup would cause ES to perform a habitual action rather than the one she was being asked to perform. For Riddoch et al., the behaviour of ES is interesting because of what it tells us about the relationship between intention and the causation of behavioural responses, specifically that bottom up or stimulus driven factors can influence behavioural responses alongside intentions. For the Conscious Affordance Theorist the behaviour of ES should be interesting because it can be interpreted as an instance of conscious affordance perception operating against intention.

Let us give an example of ES's behaviour to see whether the Conscious Affordance Theorist would be right to interpret it this way. ES was asked to pick up one of two cups in front of her, using a particular hand. The two cups were aligned in front of her left hand and her right hand respectively, and this alignment

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[3] See Reason, J. (1984).
[4] Riddoch, M.J. et al. (1998) ES suffered cortico-basal degeneration.
[5] Humphreys, G.W. & Riddoch, M.J. (2003) p.208.

decided which hand she was supposed to use to pick up the 'test' cup: if it was in front of her right hand, she should use her right hand, and if it was in front of her left hand, she should use her left hand. However, each cup had a handle, aligned at 90 degrees to ES, and these handles pointed either left or right. The alignment of the handle, whether it pointed to the left or the right, was used to distract ES from following the task requirements. To follow the task requirements, ES would have to ignore handle position. Of course, the natural thing to do if reaching for a cup with the handle pointing right would be to use your right hand, but in this task if that cup were located on your left you must use your left hand. ES frequently gave in to her 'natural' responses regardless of task instruction: she made frequent 'cross body' errors where she grasped the cup depending on its handle alignment rather than its positioning on her left or right hand side. In other words, she would reach across her body with her right hand to pick up a cup situated on her left, just because its handle pointed right.

According to the minimal view of conscious affordance perception the best way to interpret her errors is through appeal to stimulus driven conscious affordance perception. Upon looking at the cup, ES became distracted by the handle orientation: the cup looked 'graspable like this' where 'this' is to be cashed as the use of the experimentally inappropriate hand. To be clear, ES was intentionally engaged in a task that would use conscious affordance perception, 'picking up a cup', but she was distracted by a more specific conflict of affordances: a conflict between grasping like 'this' or like 'that', where the two affordances are to be differentiated by the use of a handle-commensurate hand or a handle-

incommensurate hand. When she made an inappropriate response ES was distracted by seeing the affordance of grasping like 'this', where 'this' involved the use of the handle-commensurate hand. That is to say, seeing a cup with its handle pointed right caused ES, and would cause most of us in non-experimental conditions, to see the cup as 'graspable like this' (with her right hand): the visual appearance of the handled cup made her act in a way contrary to her intention. This idea of seeing something to be graspable in a certain way is no different really to the cases of seeing something to be 'jumpable' or 'kickable', where this means seeing that one can do 'this', or 'that', where these two demonstratives pick out certain familiar leg movements and accompanying bodily efforts[6]. In sum, unlike cases where subjects intend to look for an affordance property of an object, ES found herself distracted by an affordance property. Whereas her reaching with the correct hand on error free trials still involved her being able to see the cup to be 'graspable', on incorrect error prone trials she was distracted by a stronger affordance, 'graspable like this', where 'like this' involved reaching with the handle aligned arm and not the cup aligned arm. One thing to note is that ES was not conscious of doing the 'wrong thing' in these tasks, and this may, prima facie, indicate a lack of attention on her part. If so, her case provides no evidence of intention and attention coming apart in conscious affordance perception. However, I think we can suggest there to be a difference between conscious attention that allows a subject to perform an action, and conscious attention that works in the

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[6] Milner and Goodale (1995) observe that performing a particular action with an object requires that one intend to adopt a certain type of grip and not just 'any' grip: it is perhaps a rare occasion where they allow intentional influences on subpersonal level actions. See p.203.

service of intention. When we perform action slips, such as William James'[7] example of getting into bed when one meant to change for dinner, we do not think of ourselves as zombies. Quite the contrary, we are not mystified as to how we ended up in bed, as though aliens transported us, we are simply mystified at why we went through the motions of doing it when we meant to do something else. Far from being absent, conscious attention seems to be to blame: our attention was distracted away from serving our intention, by the presence of familiar affordances.

So conscious attention to an object can make a subject aware of the affordances of that object. In most cases, this link between attention and conscious affordance perception may work in the service of intention: if a subject intends to obtain the doughnut in front of him, he will attend to its affordance properties of 'reachability' and 'graspability', and not be distracted by it's colour, texture or 'squashability'. By committing himself to the modified minimal view of conscious affordance perception, which says such affordance perception only happens when a subject is pursuing deliberate goals or intentions, the Conscious Affordance Theorist is unable to account for the effects of emotion or habit on conscious affordance perception. Hence, I suggest he adopts only the original minimal view that says as long as a subject can consciously attend to the world he will be able to see its affordances. Conscious affordance perception can be driven by affordance properties themselves, or intentions, desires, emotional states and sheer familiar habits on the part of the subject. As long as the subject can consciously attend to it, he will be able to consciously perceive an affordance.

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[7] James, W. (1890) p.115.

I suggested above that there was something right about the modified version of the minimal definition of conscious affordance perception. It does seem to be the case that subjects can use their conscious attention to the world in order to answer questions about that world. What I want to look at now is how this higher level or intention driven use of attention in conscious affordance perception might find expression both in the case of a concept using subject and a non-concept using subject. The position I suggest the Conscious Affordance Theorist adopt is one that proposes a bifurcation in how deliberate or intention driven conscious affordance perception can operate in the case of non-concept users and concept users respectively. Although both may be able to use their visual attention in the service of discovering affordances of the environment, the procedures vary in their cognitive depth and the significance of the perceptual experience to the perceiver. Schematically, the process of experiencing affordances as a result of questions that one directs at one's environment remains the same across concept users and non-concept users, and so it is true that if one lacks concepts one does not miss out on deliberate conscious affordance perception. However, the reason we need a bifurcation here is that in the case of non-concept users this process of applying visual attention to the world in the service of answering questions about that world is much less sophisticated or reflective than in the case of concept users. That is to say, what the non-concept user misses out on is a level of significance to his

actions and his experiences that the concept user possesses, and this is why we need a bifurcated account of how conscious affordance perception can input to intentional or deliberate action.

To begin with perhaps we should say a little more about whether the Conscious Affordance Theorist should support the basic notion that non-concept users can consciously perceive affordances. The minimal view says it is the case that any subject who can consciously attend to his environment will be able to experience the affordances of that environment, but should the Conscious Affordance Theorist really apply this to the case of animals? That is to say, having a Liberal View of perceptual experience might allow us to say that animals are conscious affordance perceivers, but is this a good enough to reason to accept that they are? Why should the Conscious Affordance Theorist not concede that we describe animal action using the language of affordances: the cat reached for *x* because *x* was within reach, the dog jumped *y* because *y* was jumpable, whilst insisting that these causal indexical terms are just something we, as observers, use to cash the situation. By doing so what he would not countenance is that by his standards the animals themselves are conscious affordance perceivers, where this would mean the cat reached for *x* because he saw *x* to be within reach, or the dog jumped *y* because he saw *y* to be jumpable. To claim this, he might say, would be to wrongfully over-interpret their behaviour.

One independent reason (independent insofar as it does not involve claims about whether the Liberal View of perceptual experience or the minimal view of conscious affordance perception are right) for thinking non-concept using animals

must be granted the ability to consciously perceive affordances comes from considering the kinds of concepts that are at stake here, and in particular the kinds of explanatory work those concepts are being called on to do. Normally, when we say that animals lack certain concepts it seems rather unobjectionable given the context in which those concepts are put to use. If we don't think animals are engaging in the kind of discriminatory activity we are concerned with, i.e. choosing between a leather sofa and a mohair sofa for the living room, we don't think it troublesome that they lack the requisite concepts. Affordance concepts however are used in cashing what is presumably quite a primitive link between conscious experience and action, a link which animals surely make use of. To put it bluntly, although we don't find it troublesome that a hermit crab fails to notice the difference between a Rembrandt and a Picasso, we do expect him to stay in his shell until he sees a fish that we would describe as within his reach. Indeed, his very survival demands such discriminatory ability. According to the minimal view of conscious affordance perception if the crab is able to selectively attend to the fish then he is indeed a candidate for conscious affordance perception. If he reaches for one fish and not another, we can explain this in terms of how that fish looked to him. Although we may not want to say animals experience the world in terms of conceptualized affordances, we should not equate this to saying they do not experience affordances at all. That is, we should claim that consciously perceived affordances play a causal role in animal action regardless of whether that animal can conceptualize those affordances.

What I want to do now is focus on spelling out the bifurcation between how it is that a concept-using subject experiences affordances as a result of his deliberate attention to his environment, and how it is that a non-concept using subject does the same.

The Concept-Using Subject

Let us start then with the case of a concept using subject and see how he might use his attention to the world in order to seek out affordances in answer to his questions. I want to start by making it clear what being a 'concept-using subject' actually involves.

The mark of the concept-using subject in this context is his ability to use and apply affordance concepts to his experiences, such that he sees objects to be 'within reach' and 'graspable' and the like. To understand such concepts he arguably needs a grip on the following three things: the meaning of action concepts, a simple theory of his perceptions and how it is that one can causally intervene on an affordance.

As to the first of these requirements, if a subject is to understand the affordance concepts 'within reach', 'graspable', 'jumpable' and so on, he needs to be aware of the kinds of actions that these concepts involve. Furthermore, he needs to be aware that he can perform those actions if he is to have an experience imbued with those concepts. So to have an experience imbued with the concept 'reachable' a subject needs to understand (a) what reaching is, and (b) that he is able to reach.

The second requirement is somewhat primordial to the first. It requires that the subject be able to "think of his perception of the world as being simultaneously due to his position in the world, and the condition of the world at that position"[8]. In other words, to meet this requirement the subject needs a grip on the fact that he occupies just one spatial position in what is an objectively connected spatial world. What he sees will not just be a matter of where he happens to be, but also what it is like in that part of the world in which he is located. Why is this requirement primordial to understanding the meaning of affordance concepts? A subject cannot understand that something is 'within reach', say, without knowing what it means for something to be within reach, where knowing what it means for something to be within reach is a matter of appreciating the objective spatial facts of a situation. That is to say, the subject will need to understand that he is located at a point in objective space and in possession of an arm span that is conducive to his reaching an object located at a nearby point in that same objective space. Say for instance a subject sees a plate full of cakes in the centre of the table, and asks himself whether any of them are within his reach. He needs to understand that whether or not his attention returns to him an experience imbued with 'within reachness' will be the causal upshot of where he is relative to the plate of cakes. Understanding what it means for an object to be 'within reach' just is a matter of understanding that objects can occupy certain spaces relative to one's own space. Having a grip on the spatial conditions of perceptual experience can be central to understanding the meaning of some, if not all, affordance concepts.

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[8] Evans, G. (1982) p.222.

Similarly, understanding the spatial conditions of perceptual experience plays a role in the third required type of understanding a concept-using subject must possess: it plays a role in a subject's understanding of how to causally intervene on an affordance property. Firstly, what does it mean to treat a property as something upon which causal intervention is possible? Recall from Campbell that treating a property as something upon which causal intervention is possible is very different to simply responding to, or recognizing the presence of, that property in your environment. To be able to causally intervene on a property involves knowing how and why a property obtains, whilst responding to or recognizing the presence of that property requires no such knowledge. Like colour properties, we might not want to say that affordance properties can be intervened on directly. Consider pressing a sphere of dough to turn it into a disc: here one changes the shape property of the dough by intervening on it directly. As Campbell rightly states, colour properties are not like this. If you want green dough you cannot causally intervene on its yellowness in the way you can its sphericity. What you do is add colouring, and the colour changes as a result of this chemical intervention. Similarly, if you want to make the dough afford coverage of a pizza tray, you cannot act on its current inability to afford coverage directly. What you must do in this case is act on the shape and size of the dough in order to create the affordance of 'coverage'. However, just because the causal manipulation of affordance properties, like colour properties, is somewhat indirect, it does not take from the truth of the claim that concept using subjects can treat affordance properties as properties on which they can causally intervene. How then does a subject's having

a simple theory of perception become important for his understanding of how to causally intervene on an affordance property? Having a simple theory becomes important for a subject's understanding of what he is doing when he causally intervenes on an affordance property. Consider that if a concept using subject sees a plate of cakes, and sees that none of them are 'within reach', he will see how to make the necessary changes in order to have an experience imbued with their within reachness. By looking at the cakes, he can see that all he needs to do is bring them closer in order for them to be within reach. He may not need a simply theory of his perceptions in order to act in this way[9], but he does need a simple theory in order to understand his own actions. He can rationalize to himself why he feels inclined to act this way when he perceives the cakes by understanding that something being located out of reach means that either the object or the perceiver needs to move closer in order to make that object within reach. What he needs to understand are the objective facts of the situation: that he is located at a spatial position relative to the cakes, and that by reducing this distance the cakes will become within his reach.

So the basic claim is that for a subject to have affordance concepts imbuing his experience he needs to have a simple theory of his perceptions in order to understand those concepts, and he needs to be aware of how to causally intervene on affordance properties.

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[9] As I suggested in the discussions of Thought Theory, vision plays an important role here insofar as subjects do not simply 'know' what to do to alter an affordance property: they 'see' what to do. The relationship between having a simple theory of one's perceptions and being able to 'see' what to do in order to causally intervene on an affordance property is an interesting one, but not one I can deal with properly here.

How then does this kind of concept user put to work his visual attention in answering questions about the affordances in his environment? Let us start with the more basic question of how a subject might use visual attention to answer questions, whether or not the answers to those questions involve conscious affordance perception. According to Eilan and Roessler we should understand subjects as playing an active role in bringing about the contents of their perceptual experiences[10]. As Hoerl and McCormack put it: "[t]he key notion that, according to Eilan and Roessler, is needed to explain this sense in which perception involves an active ingredient, is that of attention."[11]. The proposal from Eilan and Roessler is that we should understand subjects as asking questions of their environment to which their visual attention provides answers. Visual attention serves the aim of answering the questions that a subject poses at the world. Instead of simply passively perceiving the contents of the world, the subject can use his visual attention to bring parts of that world into focus. As Roessler puts it, "having a particular experience can be an achievement on the part of the subject"[12] This Gibsonian-like approach to perception, one focused on the role of active attention in vision[13], gives us a subject who is not simply saddled with perceptual beliefs, but who "is actively and rationally involved in the picking-up of information"[14]. The subject's involvement in bringing out what he perceives counts as rational because he is attending in the service of a specific goal that he is pursuing: he has

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[10] Eilan, N. (1998) Roessler, J. (1999).
[11] Hoerl, C. & McCormack, T. (2005) p.266.
[12] Roessler, J. (1999) p.57.
[13] J.J.Gibson (1968) See p.47-58 especially. Eilan does suggest that the Gibsonian metaphor of 'direct pick up' will not suffice for our understanding of perception, and that some appeal to information processing is necessary. For a rejection of the direct pick up metaphor in terms of its denial of visual representations see Jacob and Jeannerod (2003) p.181-182.
[14] Hoerl, C. & McCormack, T. (2005) p.266.

a reason for attending to one place rather than another, or one property rather than another, for instance[15]. Certainly this process of rationally attending in the service of acquiring knowledge about the world is not intended as a replacement for the idea that perception has an essential passivity to it. On the contrary, the role of active attention is not to replace, so much as 'influence' passive perception:

"what is happening is that the subject is actively selecting information to be processed. Most of the steps in the processing are the passive, because non-conscious, cognitive component in the activity of asking and answering questions about the environment"[16]

We can therefore take a Jamesian view of attention which claims "attention is the selection of information for further processing"[17], such that the subject can be said to use his attention to direct what is essentially passive further processing in the service of answering his questions about the world.

Let us move on to affordance properties. Consider a subject who is asking of the world whether or not a particular puddle that he sees is jumpable. According to

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[15]This may bring to mind associations with sensorimotor theory, but I see sensorimotor theory to be concerned with a different project to the one I am engaged with. Precisely, I take sensorimotor theory to present an argument for saying that perceptual experience is not something in the head, as it were, but something that we do. Although I am claiming there is an active element to perceptual experience insofar as we attend to the world and put ourselves in spatial locations in order to see things, I am not concerned with giving a theory on how we do this. My concern seems to be with a later stage of perceptual experience: once we have perceptual experience, what can it contain? The claim that subjects implicitly 'know' how to crane their necks to see around obstacles and the like is something I take to be tangential to my claim that subjects experience objects as affording them various activities. I think there are probably interesting points of comparison, but on the whole I take our concerns to be different: sensorimotor theory wants to claim that perceiving is acting; I want to claim that perceiving is causally and rationally related to acting.

[16] Eilan, N. (1998) p.193.

[17] Eilan, N. (1998) p.192.

what has been said, what this subject is doing is posing a question at the world to which he intends to get an answer by visually attending to the puddle. If he attends to the puddle with this question in mind, then he may (or may not) arrive at an experience of the puddle as 'jumpable'. If he indeed has such an experience it is because his visual attention singled out the affordance property of the puddle, causing him to have an experience of that puddle imbued with the concept 'jumpable'. It is worth reflecting that his question need not have been so specific: he may only have asked of his environment 'what can I do here?' where jumping the puddle may simply have offered some form of entertainment, or passage to something more interesting.

What we have then, is a concept using subject who can direct his attention to the world in the service of his intentions to act: he can look to see where he can hide, which objects can be jumped, which balls can be caught. What the concept-using subject has are experiences imbued with affordance concepts that can come as a result of his asking questions about how he is able to act in the environment that he is in. By having knowledge of affordance concepts, a concept-using subject is not only able to have conceptual experiences of the affordances in his environment; he is able to causally intervene on those affordance properties. A concept-using subject can deliberately investigate the affordances of the world around him, and he possesses the understanding to causally alter those affordances[18].

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[18] There is of course a question to be asked as to how, and to what extent, knowledge of how to causally intervene on a property serves as a sufficient criterion for grasping the concept of that property. For instance, as Andy Clark has pointed out to me, Kohler's apes could push a chair in place in order to reach bananas – does this show they have knowledge of how to causally intervene on the affordance properties of the environment? Although I will not deal with this issue as part of my present project, I think it is a crucial one to be addressed.

The Non-Concept Using Subject

As paradigm non-concept users, animals lack not only knowledge of affordance concepts, but also the kinds of sophisticated understanding that underlies having knowledge of affordance concepts. Firstly, intuitively it does not seem right to attribute animals a grip on the meaning of action concepts such as 'grasping' 'reaching' 'jumping' and so on. Although they can perform these actions, we do not suppose that they can conceptualise these actions, think about them reflectively, or analyse how these actions are performed. It seems equally as wrong to attribute animals a simple theory of their perceptions: they do not understand they are but one object located in an objective spatial world, and that their experiential content is causally related to the condition of the objective world at that location. Animals may live by tracing a subjective route through an objective world, but we do not expect them to realize it. For a start animals are said to lack the kind of substantive self-awareness needed to get this kind of understanding off the ground[19]. Moreover, the spatial understanding animals such as rats demonstrate is thought to fall short of the kinds of objective spatial understanding that we attribute to humans[20]. As a result of these claims, I want to further suggest that we lack reason to attribute animals a grip on the causal significance of properties,

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[19] Some animals lack even a very basic sense of self-recognition or self-awareness, as illustrated by their inability to pass the "mirror test": they fail to touch or attend to new dots of paint on their heads when they stand in front of a mirror (test devised by Gordon Gallup). Having substantive self-consciousness, being aware of oneself as an 'object' of sorts located in an objective world, is an advanced form of self-awareness.

[20] Campbell, J. (1997) p.274-275. Also see Campbell, J. (1994) Chapter 1, on 'Frames of Reference'.

insofar as they do not treat the properties of objects as something on which they can causally intervene.

There is an important difference however between saying animals lack certain forms of understanding and therefore only have non-conceptual perceptual experiences, and claiming that they cannot use their perceptual experiences in order to answer questions about their environment. According to the bifurcated notion of intentional or deliberate conscious affordance perception that I think the Conscious Affordance Theorist should adopt, a lack of conceptual understanding does not prevent animals from being able to selectively attend to the world and so there is no reason why they cannot use that selective attention in the service of their interests or goals. Though lacking complex forms of understanding about objective space, their location in that space, and the nature of object properties, they can still see the affordances of objects when they are deliberately looking for them.

Let us start again with the basic structure of employing selective attention to answer questions about the world. Recall we said above that subjects are active perceivers insofar as they can pose questions at the world they inhabit to which they seek answers using visual attention. In the human case this was cashed as a matter of subjects applying their conceptual understanding of the world to both ask questions of that world and rationally seek out answers to those questions. In asking a question of his environment, the subject needed to appreciate that the project at hand was one of finding out about a mind independent objective world:

"And, in order to appreciate how perception can yield an answer to such a question, you must be able to make sense of how the circumstances you are aware of in perception might have obtained without your being aware of them"[21]

In the human case, understanding the mind independence of the world being perceived is central to the process of asking, and finding answers to, questions about that world. If animals do not have a grip on the objectivity of the world then why am I claiming they can still ask questions about that world? Furthermore, if they do not have a grip on affordance concepts, how are they supposed to understand the answers to their questions? Although we should concede that animals do not reflectively formulate questions about their environment, it seems equally obvious that they will have vested interests that they are using their conscious perception of the environment to pursue. Surely animals search for such things as food, shelter and water, and even escape routes from situations? If so, then we should allow that they can employ their selective attention in asking primitive, non-conceptual questions of the world. But what is a non-conceptual question? I think the best way to cash the intuition that animals make enquiries of their environment is to appeal to the wants and desires that animals have. What they look for are things they are interested in, and upon attending to those things they see whether or not they are obtainable, or useable in the way that they desire. Consider a giraffe reaching for leaves in a tree. The giraffe is in the general pursuit of food, and upon selectively attending to the leaves his desire targets towards those particular leaves. Now, if one branch of leaves is within his reach and one is

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[21] Hoerl, C & McCormack, T. (2005) p.265.

not, according to the minimal view of affordance perception we should say that the giraffe, upon selectively attending to the branch that is within his reach, would reach for that branch rather than the other. So when we speak of animals having their questions 'answered' by the world, what we mean is something like this: upon seeing the branch that, in a de facto sense, affords reaching the giraffe has the inclination to reach. This is what it means to have his question 'answered'. Whereas a reflective concept user would see one branch as being within reach and the other not, the giraffe simply experiences those branches with or without the inclination to reach. Having the inclination to reach when he enjoys a certain perceptual experience is what it means for the giraffe to consciously perceive the 'within reachness' of the branch: he has a visual experience whose occurrence is characterized by the accompanying inclination to act in a certain way. He does not see the property of 'within reachness' as the property of 'within reachness'; he merely makes use of its presence. Neither does he see the property as something on which he can causally intervene: his desire to reach or not is merely present or absent; he cannot go about rationally creating a scenario where his desire is present. This doesn't mean that animals cannot on occasion help themselves out – for instance, the giraffe might instinctively walk to the other side of the tree in order to reach the currently out of reach branch. The important point is that the giraffe is not moving by way of rational decision: he is not aiming to causally intervene on the affordance properties of the situation. Given that he doesn't engage in practical reasoning, and is never called upon to rationally justify his

intentions to act, his acting upon consciously perceived affordances without being able to understand their causal grounds is simply not a problem for him.

In sum, according to the minimal definition of conscious affordance perception any subject who is able to selectively attend to his environment will be a conscious affordance perceiver, whether or not he is a concept user. What changes with the acquisition of concepts is that the subject gains reflective awareness of how his affordance perception comes about, and he is therefore able to treat affordances as properties of objects, and properties on which he can causally intervene. This is a minimal view of conscious affordance perception that I think the Conscious Affordance Theorist would be wise to adopt.

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Has the Conscious Affordance Theorist succeeded in overcoming the obstacles and objections presented to him in this thesis? Has he given a persuasive and well-argued account of his own positive position? I hope the answer to both is yes. At the very least, I think he has demonstrated that there may be inherent problems with the obstacles and objections he has faced, giving us cause to wonder whether they present a genuine challenge to his position.

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