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THE OBJECTS OF PERCEPTION

1. Introduction

Our perceptions, beliefs, thoughts and memories have objects. They are *about* or of things and properties around us. I perceive her, have beliefs about her, think of her and have memories of her. How are we to construe this *aboutness* (or *ofness*) of our cognitive states?' There are four major choices on the philosophical market. There is an *interaction* approach which says that the object of cognition is fixed by and understood in terms of what cognizers physically and sensorily interact with - or, alternatively, in terms of what the information delivered by such interaction is about. There is the *satisfactional* approach which says that the object of a cognitive state is whatever satisfies the representation constitutive of that state. There is also a *hybrid* approach which requires both physical/sensory interaction and representational satisfaction in the fixation of the object of cognition. And there is, finally, the *direct acquaintance* approach which says that only an immediate cognitive contact with things and properties can establish them as objects of cognition. The latter, as far as I can tell, goes the way perception goes, so only the remaining three approaches look like serious contenders.

Suppose you are a naturalist epistemologist in search of the best bargain. (I assume and will later explain that our discussion makes most sense in the light of the naturalist perspective.) You know that perception provides our first contact with the outside world. Some defining object-aboutness must begin with perception. As a naturalist, you want to define perceptual aboutness in terms of *real* connections with the outside world, unaffected by whatever we happen to think and believe about the world, hence independently of how we mentally represent the world. You construe cognition as made of a sensory and a mental component. What you want then is to define perceptual aboutness in nonmental terms. Your choice must be the first, interactional approach, for it is the only one which does not go beyond the sensory component of cognition. You agree with the current notion that perception itself has three major components: an external

component (energy from source to receiver), a sensory component (stimulation and formation of the sensory representation) and a mental component (resulting recognition, belief, inference, etc.). Much as you would like it, the external component by itself cannot deliver a plausible type characterization of the objects of *perception since* we perceive much less than the environment proposes in its energy deliveries to our sensory gates. So you must also consider the sensory component. The choice now is to specify the objects of perception in terms of external delivery *and* sensory response to it. Let us call external delivery and sensory response *interaction*. This means that the characterization of the objects of perception must derive from an account of perceptual interaction. The notion of perceptual interaction has become known in the recent literature as *nonpropositional or object perception*. A theory of nonpropositional perception must explain what it is to perceive things, properties and events - as opposed to perceiving, propositionally, facts about them, which would involve mental representations, hence a satisfactional perspective. Since things, properties and events are the objects of perception, it is the task of a theory of nonpropositional perception to provide the conceptual and explanatory means to type characterize the objects of perception and indirectly those of cognition in general.

There are in principle two ways of carrying out the task. One is Dretske's, the other is Chisholm's. Dretske's way is to construe nonpropositional perception and its object aboutness in terms of basic, nonmental information and its primary sensory representation. Dretske's theory combines physical interaction with nonmental, sensory representation. It is a hybrid but nonmentalist theory of nonpropositional perception. Our hard-nosed epistemological naturalist may feel that, by employing such notions as information and sensory representation, Dretske's theory is too satisfactionalist in spirit if not letter; he may also fear that the theory is likely to slide on a mentalist slippery slope since there are arguments around showing that both information and representation require, in part, a mentalist explication. For the naturalist, then, Chisholm's way (pure interaction, no representation) is the only way to go. Although published more than 25 years ago in his excellent book *Perceiving (1957)*, Chisholm's account of nonpropositional perception remains a classic paradigm of a consistently nonsatisfactional, interactional approach to the objects of perception, still unsurpassed in its insight and simplicity. In more recent years, Chisholm appears to have moved toward a satisfaction theory of the objects of perception but this is a development which will not concern us here. For there is a very good reason to focus on and explore Chisholm's earlier, 1957, account, and that is that it provides a fruitful framework relative to which we can examine and test, beyond perception, our general understanding of a cluster of basic notions concerning the

intentionality of cognition, in particular, object aboutness, content, *de dicto and de re*. But we will get there only by carefully retracing Chisholm's steps leading to an interactional characterization of the objects of perception in terms of a nonpropositional theory of perception.

So the guiding question of this paper is going to be: Can a hard-nosed naturalist construct a theory of nonpropositional perception capable of type individuating and characterizing the objects of perception in an exclusively interactional manner, without appeal to representations of any sort? My working assumption is that if Chisholm's paradigm theory cannot deliver this result, given that it contains all the basic ingredients, then it is likely that no other theory in its class will, technical improvements notwithstanding'. What I want to show is that Chisholm's theory, hence any theory in its class, faces a basic problem, one of principle, not of technical detail. The problem, in a few words, is that, as a matter of fact, the objects of interaction are not necessarily the objects of perception, and, as a matter of theory, an interactional account of nonpropositional perception does not have the conceptual and explanatory resources to bridge the gap and isolate those types of objects of interaction which are also the objects of perception. I conclude from this that object aboutness, if viewed purely interactionally, is not a property of our *perceptual* states and therefore cannot be the output of a theory of some form of *perception, the nonpropositional* form. This is my narrow objective. The wider objective is to generalize the argument to cognition and show that the same is true of the object aboutness of beliefs, thoughts and memories. The upshot of all this is that if there is a purely interactional, nonrepresentational notion of object aboutness, it must be entirely *noncognitive*. This means that such a notion cannot be plausibly reconstructed in the principled vocabulary of philosophical and scientific theories of cognition. This in turn means that by essentially telling a causal story, the interactional analysis is only capable to track the token, but not type, identity of the objects cognition is about. As I will suggest, it takes representations to establish the type identity of the objects of cognition, after which a causal story can track their token identity. Finally, this also means that there are no *specific forms* of cognition, in perception or elsewhere, which are about objects - as opposed to other specific forms which are about facts about objects. Likewise, the distinction between *de re* and *de dicto* beliefs, thoughts and memories cannot be a *cognitive* one. There aren't beliefs or thoughts that specialize in being about objects and others that specialize in being about facts. This is not to say that an interactional notion of object aboutness is unmotivated or useless. Obviously, it is a very important notion which plays a major role in current theories of perception, meaning, belief and so on. Yet it is not a notion that reads cognition *as* cognition.

It reads cognition under a different light, as packets of matter and energy interacting with other packets of matter and energy, or something in that spirit. Reading cognition this way has a role in our overall scheme of philosophical understanding. The problem is neither to reify this interactional reading of object aboutness into a form of cognition nor to assume that the interactional reading can type characterize the objects of cognition. This is the problem that confronts Chisholm's theory of nonpropositional perception and our understanding of the aboutness of cognition in general.

II. Chisholm's Analysis

The analysandum of a theory of nonpropositional perception is S *perceives* x . Chisholm's analysis first approximates the latter as

(C1) x appears some way to S .

which in turn is explicated as

(C2) x causes S to sense in some way.

(C2) lets in too many causal conditions of sensing. Since we need only the external ones, the next step is

(C3) x stimulates the receptors of S and, as a result, S senses in some way.

(C3) lets in too many external stimulation conditions (light waves, etc.) and we need only the "proper stimulus", that is,

(C4) x is a proper visual stimulus for S provided (i) that light transmitted from x stimulates a visual receptor of S , and (ii) that this light, after being transmitted from x and before reaching the visual receptors of S , is not reflected.

With this, (C3) becomes

(C5) As a consequence of x being the proper stimulus of S , S senses in some way.

(C5) excludes improper stimuli such as light waves and electrodes in the brain but not causal byproducts of the proper stimuli, such as images, that may be seen instead. This can be taken care of by

(C6) (C5) and S senses in a way which varies concomitantly with variations in x.

If the additional condition in (C6) can be faked experimentally, by controlling the subject's imagery, Chisholm thinks that the appearance of the object must be made function of the stimulus energy it produces:

(C7) (C5) and in sensing some way, S senses in a way that is functionally dependent upon the stimulus energy produced in S by X.

This concludes Chisholm's account of nonpropositional perception. The initial concept of appearing is defined in terms of sensing plus causal concepts of physics and physiology and in turn defines nonpropositional perception of objects, as in

(C8) S perceives x = x appears in some way to S.

Chisholm thinks that a further mental condition should be added in order to adequately characterize the concept and attribution of nonpropositional perception. This additional condition is

(C9) S takes x to have some characteristic.

The argument is that if no mental use (as belief or categorization) is made of nonpropositional perception, then it is not clear that we want to attribute any perception at all. As Chisholm puts it, "we would hesitate to say that [someone] sees a dog if he didn't take it to be anything at all" (150). It is the addition of (C9) that can be construed as making Chisholm's overall analysis a hybrid one since (C9) invites a satisfactoral reading. Yet, as Chisholm's discussion clearly indicates, the mental condition (C9) is a condition on perception in general, *not* on its objects. The latter are still fixed by (C1) to (C8), which are conditions on interaction, reaching only as far as the sensory response.

III. The Problem: A First Formulation

Chisholm's theory operates on the programmatic assumption that an analysis of

(1) S perceives x

explicitly characterizes *aform or modality* of perception, for it answers the question, What is it to *perceive x*? At least implicitly, an analysis of (1) is also taken to characterize the objects of perception, for it also answers the question, *What* is (nonpropositionally) perceived? The answer to the first question comes in the form of energy input and the sensory response to it, the answer to the second in the form of distal items in the environment (subject to some conditions of propriety). As we have seen, the two lines of inquiry run together in Chisholm's analysis. The successive analyses were officially meant to answer, What it is to *perceive x*?, yet most modifications affecting these analyses were meant to better capture the proper objects of perception and thus answer our other question, *What* is perceived? We can then say that the notion of nonpropositional perception is fine-tuned by the analysis to zoom on the proper target, the object of perception. In other words, an account of (1) is also meant to be an account of

(2) x is the object of S's perception.

It is then a serious problem for the interactionist view if it turns out that its account of (1) fails to deliver (2), that is, fails to type-identify or characterize x as the object of *perception*. Yet, I want to suggest, this is precisely what happens.

Schematically, an interactional analysis explicates (1) as

(3) x interacts physically with S and triggers a sensory response.

Let us call the x in (3) 'the x of interaction' or ' $x(i)$ '. The x S is said to perceive in (1), being fixed by (3), is $x(i)$. That is,

(4) $x(i) = x$

and hence

(5) S perceives $x(i)$

since nonpropositional perception is nonrepresentational, therefore nonintentional. Its descriptions create transparent contexts where substitution of identicals is allowed.

Now (5) is a very familiar and puzzling result. It allows us to infer that whenever S perceives a table he also perceives an aggregation of molecules, given that a table is an aggregation of molecules. (5) allows us to infer to a multiplicity of *types* of objects that S is said to perceive. This obviously creates a slippery slope: many types of components of $x(l)$ qualify as types of objects of S's *perception*, which is odd. What can be done? What are the options?

Option A: Reject (5) by appeal to metaphysical, logical or semantic considerations. Thus one can say that tables have some properties (e.g. solidity) that component molecules do not, so that one can perceive properties of tables but not of molecules. Or one can distinguish various senses of identity and choose that which blocks (5). Or one can find ambiguities in -particular instances of inferences to (5). Or other such niceties.

Option B: Accept but contain the slippery slope, and have the theory of nonpropositional perception account for these moves. This means' that, according to the theory, the nonpropositional form of perception must be sensitive to various types of objects a perceiver interacts with but not to others.

Option C: Reject (5) and like in (B) have the theory of nonpropositional perception account for the rejection.

Option D: Accept (5) in its strongest form, as a wild slippery slope, and conclude from this that there is no object-fixing form of perception that we can theorize about in purely interactional terms.

(D) is not an option for Chisholm because, as an interactionalist, he is committed to the notion that a theory of nonpropositional perception has to constrain or implicitly characterize the objects of perception. A mentalist theory of (propositional) perception can of course block (5) and the slippery slope by insisting that if $x(i)$ cannot possibly satisfy (C9), i.e. the mental condition, then it cannot be the object of S's perception. Although in general a hybrid theorist of perception, Chisholm does not have access to (C9) in fixing the *objects* of perception. (A) is not a plausible option either. The reason is that there are perceptually relevant redescriptions of the object of interaction $x(i)$, for example, surface granulations or any other vision-affording physical properties of $x(i)$,

which not only are allowed by Chisholm's analysis but which, independently, look like plausible candidates for distal sources of visual stimulation. We do not want metaphysical, logical or semantic considerations to preempt what looks like a nontrivial empirical issue. So (A) cannot block a mild slippery slope, nor (as far as I can tell) is Chisholm's analysis able to justifiably select what gets on the mild slippery slope and what does not. This also rules out (B) which was precisely meant to provide such a selection. Also, accepting a modest slippery slope, as (B) requires, conflicts with the ordinary talk of the objects of perception which is in terms of mid-sized objects, not of recondite even if perceptually relevant properties. The fact is that Chisholm's analysis is meant to capture and reconstruct such ordinary talk.

The issue becomes clearer now. Like any theorist of perception, Chisholm is concerned with distinguishing perception from its numerous necessary conditions. This must be true of both the relation (perception) and its basic relata (perceiver, object of perception). Given, moreover, that on the view under discussion an account of the relation (i.e. nonpropositional perception) is also designed to characterize a basic relatum (the object of perception), the risk is that various necessary conditions for the relation, if (mis)taken as sufficient, may end up characterizing the wrong relatum. This explains the various moves Chisholm makes to disqualify sense organs, then light waves and so on, from being objects of perception. But now notice two important features of Chisholm's effort in this direction. First of all, neither his move to (C3), the proximal stimulus, nor that to (C4), the distal object, are made from the standpoint and in terms of a theory of nonpropositional *perception*, in particular its sensory component. These moves are, as it were, *external* to the way sensory perception works. There is nothing wrong with making these moves. My point is: they do not originate in an account of, among other things, sensory perception, as option (B) requires. As a result, it is not the theory of a specific, i.e. nonpropositional, form of perception that helps characterizing the specific types of objects of that form. The connection between form of perception and objects of perception, on which Chisholm's analysis relies, is thus severed. (it should be added, incidentally, that even an account of the object of perception in terms of sensing, as Chisholm construes it, would not be likely to distinguish the proximal from the distal stimulus because sensing has access only to the former, qua light patterns. I will return to this point.) Second, however, these external moves to secure the distal object of perception still fail to remove it from the slippery slope. (C5) as well as the subsequent conditions in Chisholm's analysis allow an indeterminate variety of types of candidates for the distal objects such as parts, surfaces, subcomponents, elementary particles and so on. As far as light, the interaction carrier, is concerned, it may carry information

about any of these types of candidates. As far as sensing is concerned, if read merely interactionally, say, as neural firing, it may respond to information about any of those types of candidates. Surely, a neuron firing in the optic path can be, in theory, traced back to light carrying an energy pattern originating in an elementary particles reshuffle on the object's surface.

At this point we can try a first and rather sketchy formulation of the problem that, I think, confronts the interactional account. The energy delivery by light and the sensory response to it are the only basic components of that account. If they can't fix the object of perception, nothing can, because there is nothing left in that sort of account to do the fixing. In particular, if the interactional account is, among other things, meant to be an account of sensing and if sensing is defined strictly causally, in physical and physiological terms, then the various sorts of distal objects on the slippery slope are all legitimate objects of perception. This is not very nice.

There is a further reason why, I think, Chisholm cannot exploit option (B). Any general account of perception has a problem if it fails to ensure, type-wise, an object aboutness continuity between sensation and mentation. Chisholm's addition of (C9), the mental component, to his analysis of nonpropositional perception may reflect this concern. After all, it is about (say) the table S perceives that S also forms beliefs and memories, not about its physical subcomponents or necessary conditions. The mild slippery slope allowed by option (B) breaks such (type) continuity in object aboutness between sensation and mentation.

What about option (C), rejecting the slippery slope and motivating the rejection in terms of an account of nonpropositional perception? This is not going to work, for reasons already surveyed in discussing option (B). Neither the interactional account of sensation nor that of the external delivery of input have the resources to prevent the slippery slope and thus bridge the gap between the objects of interaction and those of perception. All options seem to be closed.

IV. Causation versus Representation: The Problem Reformulated

Let us look now at the problem from a different angle. Chisholm's analysis of nonpropositional perception is committed to having interaction (that is, energy delivery and sensory stimulation) uniquely characterize the objects of perception in an objective, nonmental way. This means construing both the external delivery and the sensory reception in causal terms. The result of treating interaction this

way is an overall causal relation extending from a distal object to the mind. This overall causal relation is thought to ensure that the mind, through its sensory component, has a physically real and reliable hold on the objects its states are about. The aboutness of the sensory states is thus immune to mental idiosyncracies and accidental or fortuitous connections. Sensation can deliver object aboutness in causal terms.

There is a popular assumption at work here. The assumption is that, first, it takes concepts, beliefs, linguistic descriptions, and other such mental functions to form a representation; hence, second, a representation is inherently mental; and third, it takes a satisfaction relation to characterize the object of a representation. By contrast, sensory states do not presuppose mental functions, hence are not representational, and their objects can be specified in terms of a nonsatisfactional relation. This assumption is behind (what I will call) the *realist* interpretation of the contrast between the representational and nonrepresentational aspects of cognition. The realist interpretation picks out components of cognition which are representational (mental) and components which are not (sensory). But there is another, *explanatory* interpretation of the same contrast which is based on a totally different picture of cognition. On the latter, cognition is representational all the way through, from early sensation to high level mentation. A sensory state, like a mental state, is both a neural pattern, subject to causal influences and regularities, and a representational structure, subject to formal constraints. On the explanatory interpretation, we read a cognitive state (whether sensory or mental) causally or representationally depending on what we want to explain. Chisholm's account of nonpropositional perception takes the realist line, my criticism of it, the explanatory line.

At this point in the argument I have to provide a rough and minimal characterization of the notion of *cognitive representation*. I am assuming that our mind is populated with simple, elemental or contributing representations such as blobs, dots and other visual symbols (in perception) or signs and words (in language) and complex or structural or output representations such as images (in perception) or sentences (in language), made out of simple representations under specific rules and other formal constraints. I am also assuming that only structural, but not simple, representations encode information about facts and thus have a propositional content. Cognitive verbs like *perceive, think, believe, etc.*, when construed prepositionally, are here taken to characterize relations to and operations on representations as structural outputs. It is the output or structural construal that I am appealing to when talking of cognitive representation and of a representational reading of cognition.

What I want to show now is that Chisholm's interactional account displays the irresolvable tension created by a realist reading of the contrast between causation and representation in perception. The seeds of the tension are already present in the conditions (C6) and (C7) of Chisholm's analysis, conditions meant to provide further specificity to the distal objects of nonpropositional perception. Before reaching (C6) Chisholm rightly worries that mental representations such as images may fit his notion of perceptual object, that is, be the effect of some proper stimulus x and yet not be an appearance or sensing of x . For example, an image may be prompted by a proper stimulus but be actually manufactured out of memory items. It looks like the direct connection with the stimulus has been lost. In the good old days Hume and Berkeley could reestablish the connection by insisting that the sensory appearance have the strength, vividness, coherence, and above all the regularity that the memory image lacks. Unfortunately, these distinguishing features of the sensory appearance were internal and representational. When it came to the object of the sensory appearance, the good old theory was satisfactory. What Chisholm proposes instead is to retrieve the distinguishing regularity of the sensory impression causally, in terms of the nonrepresentational properties of the stimulation process itself. It is the concomitant variation of the sensory impression with the stimulus that makes the difference. "Our impressions", Chisholm writes, "unlike our mere ideas or images, will vary systematically with variations in the proper stimuli" (147). This is a critical step. It may be read representationally, in which case there is a satisfactory fixation of the object of perception, or it may be read nonrepresentationally, in which case there is no object fixation whatsoever. Again, a dilemma for a project like Chisholm's. The ironic side of this dilemma is that the latter reading almost captures an initial leg of cognition which seems inherently nonrepresentational and thus a perfect candidate for the realist construal of nonpropositional perception.

Let us begin with the representational reading. An impression, as Chisholm seems to construe it, is a sensory representation. In using the idea of concomitant variation Chisholm may have construed the sensory impression as an *analog representation*, that is, a representation of some continuous function or dimension such as, say, light intensity. The causal reading of the stimulation process can now be matched by a representational reading of the steps as well as of the output of the process in question. But now a satisfactory individuation of the object of sensory perception is just around the corner. For now we can say that to be the object of sensory, nonpropositional perception is to be the object of an analog representation. This means that something can be the object of perception only if it can be analogically represented. Not everything that causally interacts with a

perceiving organism gets analogically represented. The frog does not analogically or otherwise represent the static fly, although we may assume that light waves from the fly reach the starving beast, if we so set them up. So we must explain what gets represented by appealing to design constraints on the organism's representational capabilities. Although nonmental, these constraints are formulated from the standpoint of the organism's perception and thus satisfy the requirement that an account of perception contribute to the fixation of the objects of perception. But the price to be paid for this result is that the account is representational and provides a satisfactorily individuation of the objects of perception, something it was not supposed to do according to Chisholm's interactional program.

There is also another, nonrepresentational and hence less problematic reading of what Chisholm is doing. On this reading, the very notion of analog representation is inconsistent. It is a process which is continuous, hence analog. A representation is always digital. A digital representation can represent a continuous process or dimension (music represented by digital records, for example), but that does not make the representation itself analog. There are many psychologists these days who think that perception and mental imagery produce digital representations of continuous processes. On this reading, then, what Chisholm characterizes in (C6) and (C7) is not some sort of representation but in fact the very first leg of sensory perception, a process which goes these days by the name of *transduction*. This is said to be an analog form of processing information which maps proximal stimuli (say, light and sound waves) onto covarying neural signals. Transduction thus transforms patterns from one form of energy (light) into patterns in another form of energy (electrochemical impulses). It is the lawful covariation that makes the format of processing information analog. This does not mean, however, that (while transduced) the information is represented anywhere, just as, when carried by light, information is not represented anywhere. It is transduction thusly construed that Chisholm needs for (C6) and (C7). The reason is that transduction looks like a specific, independent form of sensory cognition which is nonrepresentational, hence nonpropositional, and which also is fully identified by a realist interpretation of nonpropositional perception.

This may well be a fair reading of Chisholm's analysis of sensory, nonpropositional perception. It is consistent with an adverbial understanding of sensing which Chisholm also subscribes to. The adverbial view need not posit representations as either intermediate steps or outputs of the sensing process. If we look back at Chisholm's analysis and ignore for the moment his

representational talk of impressions and images, we notice that there is no place between (C 1) and (C7) where Chisholm says that S has a representation of *x*. All he says is that S is subject to all sorts of processes ⁶ So, on this nonrepresentational yet realist reading, when Chisholm is talking adverbially of sensing, we could construe him as talking of transduction and of nothing else. It would then seem that my earlier criticisms would not apply.

I am not so sure about that. One problem is whether Chisholm's notion of sensing is indeed transduction. The other and more critical problem is that, even if nonpropositional sensing is transduction, it does not follow that it can token (let alone type) identify the objects of perception, as Chisholm's project requires. The first problem first. To begin with, although (C1) to (C7) employ only causal, nonrepresentational concepts, together these concepts are deemed sufficient to define *S perceives x*, which Chisholm describes as a "familiar, nonpropositional use" of the verb *to perceive*. I do not think many people would find it that familiar if no perceptual representation of *x* is involved. In other words, the transition from (C 1)-(C7) to a full blown concept and use of *perceive* remains unmotivated unless perception is also understood representationally, not merely adverbially. Chisholm may dismiss this criticism by saying that it foists an explanatory reading of perception on the common sense understanding and use of *perceive*, whereas he finds common sense inclined to read nonpropositional perception realistically. But then recall an earlier difficulty. In introducing (C6), Chisholm appears to talk in a literal and familiar sense about sensory impressions and compares them to ideas and images. The latter are obviously representations. The comparison has no point if sensory impressions were mere adverbial, process characterizations of the causal patterns involved. The fact is, in either ordinary or technical talk of perception, it is next to impossible to use the verb *perceive* and yet avoid any representational implication. Therefore, if transduction is entirely nonrepresentational, there does not seem to be any sense of *perceive* which, realistically, picks it out.

Now the second, more critical problem. Suppose, for a moment, that nonpropositional perception, qua sensing, is transduction. The current and still fluid view of sensory, premental perception is that the latter is made of two basic sets of systems, transducers and computational modules. The transducers have access only to the proximal input, that is, light waves. Only the computations of the modules reach back, inferentially, to the distal objects that light informs on. So an earlier puzzle is back to bother us: If the analysis of sensing involves only transduction, then the analysis can place no (perceptual) constraints on the *distal objects* of perception, because transduction by itself does not reach that far, and is

moreover compatible with countless objects, real or fake, of all sorts. Transduction cannot help with the slippery slope. Impasse again.

V. The Problem Generalized

Suppose that our S, besides doing a lot of perceiving for us, also thinks and believes something, say, about an absent friend. How are we to construe the objects of his thoughts and beliefs? How, in general, are we to construe the object aboutness of thoughts, beliefs, memories and other mental states? The competition, again, is ' between an interactional account centered on the notion of causal relation and a satisfactional account, centered on the notion of cognitive representation. If you are a naturalist, you must choose the former account. How would that account fix the object (absent friend) of S's thoughts and beliefs? The causal story might go like this. Assuming that we have the resources, we can start from S's current neural patterns constituting his particular friend-thoughts and beliefs and go backwards, first, to prior neural patterns (say, in memory) causally responsible for the current ones and then from there back to earlier neural tokenings of the perceptual states involved, then the earliest states of transduction, step outside S's body, consider the relevant light patterns carrying friend-information and so on until we reach the friend's skin. The story has been entirely nonrepresentational, or so it seems.

How do we want to read this story, realistically or explanatorily? The realist reading, as we saw in the case of perception, is very tempting to an epistemological naturalist because it is uncompromisingly nonrepresentational, hence nonsatisfactional. The realist reading must *then pick forms* of thought, belief and the like which are about objects. These must be *nonpropositional or de re* forms of thought, belief and the rest. The model is *S perceives x*. On this model, we must have a non-propositional, direct object use of *thinks, believes, plans, intends, and* so on. We must, in other words, be not only able but used to say things like *She thinks table or He intends cat*. But we are not. (Paraphrases will be discussed in a short while.) We do not think and talk in *these* terms. Why not? What is the difference between perception and thought on this score? In both cases we may have good reasons to merely track (or token identify)7 their objects and ignore how the objects are represented, hence type identified. The same causal moves will be involved in both cases: particular perception and thought tokens will be read neurologically and then we will reconstruct backwardly the causal chains leading to the particular objects in question. (One may even argue, as many would these days, that the "causal concepts of physics and physiology" involved in these object-tracking moves cannot tell the difference

between percepts, thoughts and beliefs.) Then why the difference? Is it because of the object proximity or stimulus-response covariation which we find in perception but not in thought? Not likely. These may be differences affecting the structure of the neural tokens involved but here we are only interested in how those tokens allow us to track their causal sources. If the causal tracking of the objects of perception motivated a realist construal of nonpropositional perception, a similar tracking of the objects of thought (belief, etc.) should also motivate a realist construal of nonpropositional thought (belief, etc.). We would say then that there is a specific, independent form or modality of thinking, nonpropositional (*or de re*) thinking, which is to propositional thinking what nonpropositional (*or de re*) sensing is to propositional perception, and which of course is exclusively sensitive to the objects of thinking. And we would say the same about believing, intending and the rest. But neither ordinary talk nor philosophical reflection support such an inference from causally tracking (or token identifying) the objects of some mental state to reifying that state into an exclusively nonpropositional, object-tracking state. But then we have a *reductio*: given that the motivation to reify is the same for nonpropositional, object-tracking forms of perception as it is for nonpropositional, object-tracking forms of thinking, believing and the rest, if it does not work for the latter, it cannot work for the former either. Equal treatment of cognitive states and processes, as far as their object aboutness is concerned, therefore recommends rejecting the notion of nonpropositional perception as a *cognitively motivated* modality of perception. We have come back full circle to our earlier conclusion.

I have said a few paragraphs ago that we do not normally engage in nonpropositional talk of thoughts, beliefs or intentions, not in the specific form of *S thinks x* or the like. It looks like ordinary talk acknowledges the intrinsic representationality, hence propositionality of mental states. But we do ordinarily say things like *I thought of you recently* or *She believes about him that such and such*. In such locutions, we seem to intend and focus on the token object aboutness of my thought or her belief. So what is going on here? I think that the words, *of, about and that* as well as their positions in a regimented reconstruction can give us a handle on the difference involved. My generic reconstruction of the sentences just mentioned will be

(6) About/of *x*, *S* thinks/believes/intends that *p*

or, slightly differently,

(7)[about/of object] thought/belief/intention [that *p*]

or, finally,

(8) [*de re*] thought/belief/intention/etc. [*de dicto*].

At the right of the cognitive operator, within its scope, is a propositional representation, a dictum. At its left, outside its scope, are the objects the representation is about, its res. The positioning of the *de re* clause outside the scope of the cognitive operator is indication that object aboutness is established externally and independently of our mental representations, say, in causal terms. On this reconstruction, *I thought of you recently* becomes [*of you*] recently *I thought that [whatever]*.

Given my earlier arguments, I will treat even those locutions, like *perceive and remember*, which place the objects they are about within the scope of the cognitive operator, the way I treat the other, definitely mental operators. That is to say, *perceiving/remembers x* becomes

(9) [about/of x] perception/memory [that pl.

One can only speculate why, unlike thought and belief verbs, perception and memory verbs have natural and direct nonpropositional uses. One likely explanation is that the latter are success verbs in a very specific sense. When we ask, *Can you see him? or Do you remember Pusha?*, we may be asking, *Can you form a (visual) representation of him (whatever its particular content)? or Do you store a (memory) representation of Pusha (whatever its particular content)?* The nonpropositional use may thus result from this sort of bracketing out the specific propositional content involved. As I have been arguing, what we cannot plausibly be asking is, *Does your nonpropositional component of perception/memory sense or resonate to him/Piisha?*, for there is no such component as an independent cognitive unit to do those things. If, on the other hand, we mean such questions in a causal sense, that is, we focus on the token object aboutness of our cognitive states, then we are equally entitled to ask them about thoughts, beliefs and other mental states as well. Another likely and related explanation is that, of all modalities of cognition, perception and memory are precisely those where representations are in existence, as it were, either formed or stored. So asking questions like those above is asking, *Are the representations (about x or y) there?*

What is the moral of all this? Think of a cognitive operator such as *perceive, think, believe, remember*, and the rest in a neutral way, as an incomplete

description (or a function) in need of further qualifications (or valuation). If we want to specify the token object aboutness of a particular operator, we turn to its left and fill the aboutness clause with the appropriate token candidate for *x*, after consulting and then bracketing out the rightmost, representational or content clause. (I will explain the latter moves in a moment.) In doing so we *read* the operator causally. If, on the other hand, we want to specify the informational content of the operator, we turn to its right and fill the content clause with the appropriate token candidate for *p*, after bracketing out but not necessarily consulting the object aboutness clause.⁸ In one case we read the process or state designated by the operator as a hardware process or state with a causal story, that is, *de re*, in the other we read the same process or state as a cognitive process or state with a certain representational content, that is, *de dicto*. About *res*, we perceive, believe, say (etc.), dicta. This, you will recall, is the *explanatory* interpretation of the contrast between the nonrepresentational (hence nonpropositional) and representational (propositional) aspects of cognition: one interprets the cognitive operators one way or the other depending on what and how one wants to individuate, characterize and explain."

The present explanatory interpretation is committed to the view that a cognitive representation, whether sensory or mental, is a physical (or hardware) structure, with a certain functional profile, immersed in various causal interactions. Some of these interactions may lead us back to the objects a representation is causally about. But not on their own, as it were. As shown, a mere causal or interactional reading of some cognitive state cannot by itself type identify the object aboutness of that state because it cannot avoid the slippery slope and hence cannot type identify the objects of interaction which are cognitively accessible to that state. One must first appeal to the representational content of the state in order to type-identify the object in question. After that, the content can be bracketed out and the focus switched exclusively to tracking the aboutness of that state, in particular, the token identity of the objects concerned. This is what I meant a few lines ago by *consulting and bracketing out the content clause*. A mere causal reading may give us a handle on a cognition-initiating lump of matter producing some energy changes in another cognition-instantiating lump of matter but, without appeal to what and how the latter lump represents, that reading Kant (as it were) type individuate the former lump as the object of a *cognitive* state. The explanatory interpretation thus vindicates the hybrid view of object aboutness: we type identify the objects of cognition with the right, representational hand, and token identify them with the left, causal hand, in that order.

VI. Concluding: A Caveat and Something About Naturalism

It is, I think, the merit of Chisholm's insightful and precise analysis of nonpropositional perception to have so well illuminated the question of object aboutness in perception and beyond. It is possible that, contrary to my reading, Chisholm may have taken the mental condition (C9) as a constraint on the admissible types of objects of perception, perhaps in the sense of my consulting-and-bracketing out manoeuvre. In that case, he would hold the hybrid view of object aboutness. In recent years Chisholm's analyses of the *de re* or object aboutness of perception, belief and other mental states seem to have gone the satisfactorily way. This caveat aside, our initial questions are still with us: can a purely interactional (specifically, causal) analysis of nonpropositional, *de re* cognition fix the objects of cognition? And can such an analysis realistically single out and characterize nonpropositional or *de re* forms or modalities of cognition? Both answers, I have argued, must be negative. On the other hand, with respect to perception, I have construed Chisholm as either supporting affirmative answers to these questions, or else providing enough elements and clues out of which affirmative answers can be manufactured. In the process of articulating and defending my answers I have often appealed to the position of the epistemological naturalist. This is not a position I would necessarily attribute to Chisholm. The point of introducing the naturalist position was rather dialectical. For this, I think, is the position which would benefit most if the answers to the two questions were affirmative. If we look at things this way, at least for dialectical purposes, we get a better picture of what is at stake in our discussion. Let me therefore conclude with a few remarks in this direction.

The epistemological naturalist is a latter day foundationalist. He is looking for items of conclusive, foolproof knowledge and forms of cognition capable of producing them. In the good old days the foundationalist was assuming or arguing that various forms of cognitive *representation*, such as clear and distinct ideas or basic intuitions or sense data or the like, can deliver the goods. But, for all sorts of reasons, this is no longer the game to play. Representations cannot be trusted, epistemically. We need a more direct, natural and reliable access to the world around us. Wouldn't it be nice if we can find *a form* of cognition, of perception in particular, which can do the job, that is, somehow get a firm (causal and/or lawful) hold of the things, properties and events around us, *before* cognitive representations of all sorts get into the act and spoil the whole thing? This form of cognition and its outputs would then constitute the new foundations for knowledge. This, very roughly, is the epistemological motivation behind the

naturalists realist search for nonrepresentational, nonpropositional, hence nonepistemic forms of cognition. "

The naturalist motivation is also very powerful and effective in recent philosophy of mind and language. In these areas the burning question is, *How do mental states and words latch on to the world?* If we say, *By representing the world*, we get into all sorts of familiar troubles. But if we take the interactional line, then we have our naturalist answers, *Names refer to, and various mental states are about, objects (i.e. things, properties or events) because there is a causal and/or lawful relation between the former and the latter.* The critical problem is how to read this answer. No quarrel here if we read it from the explanatory stance. But quite often there is a subtle, often unrecognized yet powerful pressure to read it realistically, in the sense of there being privileged (*de re*) cognitive states which somehow directly resonate to the causal and nomological inputs sent by the world. Why this pressure? Several answers come to mind. For one thing, like in the epistemological case, it is felt that representations cannot be part of a firm, reliable, natural commerce with the world whereas the object aboutness of names and mental states seems often to be part of such commerce. Also, we are all too frequently told by token, or anomalous, physicalists and functionalists that we don't conceptualize and explain cognitive representations the way we explain physical matters. And the fact is that this is exactly how normal, physical laws abiding, naturalist folks want to explain object aboutness, namely, the way we explain physical matters. Finally, there is a technical side to the pressure I am talking about. Language is a system of representation. If we want to truly *explain* how it links with the world, we would better do it noncircularly, by going outside the circle of representations. The same would be true of representational cognition in general. Recent attempts to naturalize the notion of intentionality go, I think, in the same general direction, with the same general motivation. In matters of mind, language and knowledge, the naturalist has therefore a distinct and motivated interest in construing object aboutness interactionally and in realistically isolating forms of cognition which secure that object aboutness without representational interference. As I have construed and generalized it, Chisholm's account of nonpropositional perception throws a clarifying light on the prospects of *this sort* of naturalist project. If I am right, the prospects are not that good. 12

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Notes

1 I am not assuming that this question is necessarily about intentionality since I am not assuming that intentionality reduces to object aboutness.

2 Fred Dretske can sometimes be read as an interactional and sometimes as a hybrid theorist of perception in his (1969) and (1981). Various causal theorists will also qualify as interactionalists. The satisfactoral approach has been the most popular since Descartes. The hybrid view was held by Locke and is very popular these days in the form of the twotrack (i.e. functional and semantic) approach to mental states in general, perceptual in particular. Russell was the most prominent advocate of the direct acquaintance view.

3 It should be very clear that I am not construing Chisholm as a naturalist theorist of perception because he is not one. I am only focusing on his account of the *objects of perception* in terms of *nonpropositional perception*. It is also a historical fact that this latter and very specific *sort* of account is needed by epistemological naturalism for *its* type characterization of the objects of cognition. Then, my claim is, if Chisholm's specific interactional, nonpropositional account of the objects of perception (which *is* part of his more general mentalist theory of perception) fails, so does epistemological naturalism.

In what follows Chisholm's (I 957) is the text to which I will constantly refer unless otherwise indicated.

4 I use *characterize or fix* as a synonym for *type-identify*. It should become apparent that my critique of the interactional approach is directed at its inability to type identify the objects of perception. Its ability to token identify them is not being challenged. But my argument will be that the latter ability is dependent on a prior type identification ability which I attribute to the representational mind.

5 If I am asked the tough question of distinguishing physical from representational structures, I will have to say (among other things) that the latter, unlike the former, must involve a nonrandom, rule-governed loss of information (call it abstraction, digitalization or what have you); and that in general the behavior and functions of representational, but not physical, structures obey formal rules and constraints which are demonstrably irreducible to physical (up to neurological) laws.

6 Consider another adverbialist position which explicitly motivates the refusal to read cognition representationally. This is Geach reacting to Fodor's methodological solipsism:

"If a representation is a product, for example, a picture or a written description, then of course we can describe the arrangement of pigment-spots or letter quite apart from anything that is meant to be represented. But if a representation is [construed only adverbially or process-wise as] an act of an agent, a reaction of a living being to his environment, why should we look for a way of describing this reaction quite independently of what it is a reaction to?" (Geach, 1980, p. 80; my square brackets interpolation).

Methodological solipsism aside, my answer to Geach's question is going to be this: If we do not describe the organism's reactions in terms of representations, as products under rules, we cannot type identify the objects (things, properties, events) of the organism's cognition and therefore cannot adequately explain the very reactions in question. Living beings such as frogs react to flies (thusly type identified), not to packets of elementary particles. The adverbial reading of a "representation" as physical process can at most track the token identity of the item reacted to. This is the limitation of the adverbial reading. '

7 I will use the concept of tracking in the sense of a causal form of token identifying specific spatio-temporal objects of cognition.

8 Propositional contents can be formed and be functionally active in cognition even when their causal object aboutness is absent.

9 Some years ago Jaakko Hintikka (1975, ch. 4) has drawn an interesting distinction between descriptive (or physical) and perceptual identification of the objects of perception. He has used a scope distinction similar in spirit to the one outlined here. But Hintikka's discussion is more confined than mine. First of all, it deals specifically with how we recognize things in perception. Second, his

notion of perceptual cross-identification is more subjective and qualitative (since it allows sense data) than the notion of representation assumed in this paper. Other philosophers have also noted the noncognitive, merely causal character of the nonpropositional talk of perception. See, for example, Armstrong (1980), p. 122.

10 See his (1977) and (1981), ch. 8 in particular.

11 Dretske's approach, mentioned in the first section, appears to have the same motivation, except that it takes and expects very basic forms of sensory representation to satisfy the naturalist constraints.

12 My good friends at Tulane and the University of New Orleans are warmly thanked for forcing me to rethink and clarify a number of points. They always do this to me.

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