Review of R. G. Millikan, On Clear and Confused Ideas

Philosophy and Phenomenological Research

1. Introduction

Ruth Millikan's On Clear and Confused Ideas (2000) is a carefully thought-out presentation of a radically externalist theory of concepts. The book has the rare merit of combining rigorous philosophical analysis with refreshingly original ideas. Sympathisers will enjoy getting to grips with a detailed and comprehensive version of externalism; opponents will benefit from an exacting foil against which to test their views.

Those who know Millikan only for her teleosemantics will find the themes in this book new. And those who think of Millikan as primarily concerned with empirical questions of biology and psychology may be surprised by her range of influences. The book features figures like Wilfred Sellars, P. F. Strawson and Gareth Evans as prominently as any more recent naturalist thinkers.

The structure of the book is not straightforward. The earlier chapters (chapters 1-7) are especially concerned with a specific type of empirical concept, namely concepts of 'substances'. The later chapters (chapters 8-15) develop some strongly externalist and anti-Fregean thoughts applicable to empirical concepts in general. But the division is not clear-cut. Some of the general externalist themes appear early on, in the course of explaining substances; conversely, Millikan continues to focus on substance concepts throughout the book, even when her themes are of more general significance.

In this review we shall have space only for these central themes of substance concepts and anti-Fregean externalism. This means ignoring a number of interesting further issues raised in the book. In particular, we will not discuss Millikan's useful notion of 'soft' information, which is presented in the appendices, and merits an article in its own right. Nor will we address her discussion of what it is to know what one is thinking of, and how an externalist can account for that phenomenon.

Our review will follow structure of the book. The first part (sections 2-4) will explain Millikan's theory of substance concepts, while also introducing some general externalist themes. After this (sections 5-7) we shall concentrate on the externalism, and in particular the rejection of Fregean senses.

2. Substances

Millikan starts with what she argues are the most basic empirical concepts, those of 'substances', in roughly the Aristotelian sense. She offers a detailed description of what she means by substance, and explains why concepts used to identify substances are more basic than concepts of properties.

Substances are characterised as subjects over which a <u>variety</u> of properties are projectible. Central examples of substances are people, other animals and spatiotemporal objects. As Millikan puts it, if I learn that Xavier knows Greek on one encounter, this will hold good on other encounters; and similarly with his having blue eyes, liking lobster and many other features. At a more general level, species and natural kinds are themselves substances. If I learn that one cat likes fish, I can infer that others will; and similarly for many other features of catkind.

This kind of projectibility of the properties of a substance will be grounded in some underlying real connection. There are two main types of such connection, eternal or historical. <u>Eternal</u> substances have instances with a common essence. Usually this essence is some inner nature which is responsible for observed properties, such as in the case of instances of chemical elements. The essence may also arise from the fact that all instances of the substance are formed of similar material by the same natural forces in similar circumstances, for example, asteroids. By contrast, the ground for <u>historical</u> substances lies primarily in the fact that all instances of the substance are copied from one another. In this way, the similarity between all printed renderings of <u>Magna Carta</u> is explained by the fact that they are all descended from copying the same original. Similarly, the members of species form a substance – not because they share some inner essence, but because they are historically related to each other. In addition to similarity grounded in copying, there are often conservation mechanisms which eliminate unfaithful copies; like proof-readers in the case of documents and natural selection in stable environments in the case of species.

Groups of substances fall under templates which determine the kinds of properties which are likely to project for substances of that kind. 'Human being', 'species' and 'chemical element' are thus substance templates. If I know that Xavier is a human being, I know that his eye colour and his linguistic abilities will transfer from encounter to encounter, but not his attire or his mood. If I know that aluminium is a chemical element, I know that conductivity and density will carry over from sample to sample, but shape and size will not. Often the very name given to an entity will indicate a relevant substance template and thus import a large amount of information as to which properties are likely to be projectible (eg, __ium for metals).

Substance is a vague category which tails off into borderline cases. There are three dimensions along which cases can vary. First, the reliability of the projections. Second, the number and variety of the projections. Third, the availability of a well-characterised substance template. Something is more centrally a substance the higher it scores on these criteria, and the more marginal the lower it scores.

It is worth noting that these are all dimensions which make a difference to the <u>usefulness</u> of a substance concept. Whether it is worthwhile for humans to recognise a substance will depend precisely on how reliable are the projections it allows, how many there are, and how readily we can latch onto them. But we should not infer from this that substancehood is a subjective or epistemological matter. As Millikan sees it, substance is a metaphysical category, picking out genuine entities in the real world. Amongst all the varied substances that there are, a small selection are usefully recognised by human beings.

Substances contrast with properties. Whereas substance concepts are used for identifying entities, property concepts can be used to classify them. Millikan follows Strawson (1974) in using grammatical distinctions to motivate this contrast. Substance terms characteristically appear in subject position, can be singular or plural, and take both definite and indefinite articles. Properties exclude each other, in a way substances do not. Because of this, the identification of properties requires a richer cognitive structure, which includes negation and the ability to identify the complement of each property.

These grammatical themes, however, do not play a prominent part in the book. Rather she emphasises the psychological difference between substance concepts and others. In particular, she argues that abilities to recognise substances develop in children before abilities to recognise properties, and are evolutionarily more primitive. Children first keep track of substances, using an innate ability to track objects perceptually, and then learn which properties to apply to them. If substances were thought of as collections of properties projected together by classical induction, then regress would threaten when explaining how properties come to be identified. Millikan avoids this since substances are identified directly, not by first recognising their properties. This means that identifying a substance does not require grasp of a criterion of identity, nor of the underlying principles which ground the similarities found in the substance. Interestingly, some experiments suggest that children know that substances are governed by some such underlying principles before they have any grasp what these principles are.

3. Contents, Conceptions and Identifying Abilities

Millikan distinguishes concepts from conceptions. This distinction plays a central role in her anti-Fregean externalism. Conceptions are means by which a thinker identifies a substance. They include explicit beliefs about a substance as well as non-conceptual means by which the substance is identified. It is crucial for Millikan that conceptions play no role in determining the content of a concept. She entirely rejects the idea that the extension of a concept is something picked out by some description associated with the concept. Rather, extensions depend on purposes. The purpose of a substance concept is to identify a specific substance. Such purposes are not fixed by the conceptions associated with substance concepts, any more than the purpose of vision is fixed by our thoughts about vision.

A moderate externalism might allow that the world makes determinate indeterminacies left by our conceptions. Thus, our conceptions of water may leave it indeterminate whether our water-concept refers to H_2O or XYZ; external factors might then be thought to decide between the two. By contrast, Millikan holds that conceptions play no role whatever in fixing extensions. The conceptions by which a thinker identifies a substance need not match the ontological ground of the substance, and in general will not do so. There do exist ways of identifying substances which latch onto ontological grounds and so are particularly reliable (for example, using a mass spectrometer to identify chemical substances), but these are standardly too impracticable to play an important part in individual thinkers' conceptions. In addition, different thinkers will have different conceptions associated with the very same substance concepts. Indeed some thinkers' conceptions of a given substance may fail correctly to identify that substance.

How are the extensions of substance concepts determined, if not by conceptions? According to Millikan, a substance concept is an ability to identify a substance, and its extension is whatever substance it is the purpose of that ability to identify. As we might expect, Millikan herself thinks the purpose of a mental mechanism is given by its selectional-historical teleology. However, she intends her theory of substance concepts to be compatible with alternative accounts of the purposes of human abilities.

In her own treatment, Millikan develops the selectional-historical approach. The purpose of a mechanism is what it was selected for doing. The extension of a substance concept is thus whatever substance it was selected to recognise. 'Abilities' is a term of art here, since abilities are neither dispositions nor capacities. Rather, if past dispositions to recognise the substance S in some set of historical circumstances account for the current existence of a particular mental mechanism, then the thinker currently has the ability to recognise S, even in the absence of any current capacity to identify S, or any disposition to do so in any currently possible circumstances.

A more subtle story is needed for abilities which are not themselves innate, but which arise from the operation of innate learning mechanisms. In such cases the purpose of the ability derives from the purpose of the learning mechanism. The latter was designed by natural selection to be tuned to reidentify substances of a certain sort. Past successes of the learning mechanism will be accounted for by its operation in a particular manner in accordance with some set of principles. When its current operation is viewed in the light of those principles, the purpose of the mechanism it produces can be seen as being to identify substance S, where S is like those substances which accounted for the historical success of the learning mechanism. For instance, my face recognition programme might allow me to learn how to recognise A by his (entirely novel) face. As it is recognition of faces which accounts for the past successes of this learning mechanism, my new learnt ability can be seen to have recognition of A's face as its purpose.

It will be apparent that the content of Millikan's concepts is at the level of extension or reference, not at the neo-Fregean level of sense or conception. However, these contents cut finer than predicate extension as normally understood. Millikan's ontology recognises substances and properties as real entities, as well as particulars and regions of space-time. And two substances can be different even if they cover exactly the same set of particulars, namely when they correspond to different collections of co-projectible properties and have different grounds. So the substance concepts 'word-processing programme' and 'Microsoft Word', say, need not co-refer, even in a world where they contain exactly the same set of particular instances.

A substance concept is thus an ability. The end or purpose of such an ability is to identify its referent. In addition, there is the means by which a thinker obtains this end. This means is the thinker's conception. In line with her rejection of conceptions as determining reference, Millikan also rejects counting abilities by means. She argues at length that there is no principled way to individuate various means for achieving the aim of identifying a particular substance. Accordingly, substance concepts should only be individuated by the substances they are designed to identify, and not by the conceptions they employ as means to that identification.

Millikan explains how substance concepts may fail to function according to their purposes in various ways. For example, a thinker may use a concept which is designed to refer to some S to mistakenly misidentify some other substance as S. Moreover, a thinker may have a quasi-concept which fails to track any real substance (reference failure), or a thinker could fail to unify what are in fact two concepts of the same substance (redundancy), or a thinker could even possess a single concept the referent of which is indeterminate between two or more substances (equivocation).

4. Substance Concepts Through Language

Millikan argues that identifying a substance through language is on a par with all other ways of identifying it. On her theory, 'Hey Guys, it's raining!' is just as much a sound of rain as the pitter-patter of drops on the window. She backs this claim with evidence that testimony feeds straight into belief, especially when listeners are distracted by concurrent cognitive tasks. In this respect, acquiring beliefs through language is just like perception.

Given this, Millikan argues that you can acquire a substance concept simply by learning a word for it, and connecting this with a substance template which tells you what kinds of properties you can expect to project over examples of the substance. By way of illustration, let us, following Millikan, offer our readers the concept of the African dormouse. Reading these last words gives you the concept, even if you have had no previous contact with this species. For the name alone tells you what kind of properties to expect to be projectible of this substance (biological, animal, and mammal properties). In effect, the new word, together with the substance template, acts as a 'seed crystal' around which a detailed conception may later be formed.

This role for language is reminiscent of Tyler Burge's view of concepts (Burge, 1979), but it functions in a significantly different way. Burge's story implicitly assumes that the community's experts fix the content of an individual thinker's concept. Similarly, Hilary Putnam (1975) relies on experts to allow him to talk about elms as opposed to beeches. Millikan does not require any expert identifiers. It is sufficient that the purpose of the concept is to track a particular substance, and that the associated word serves to collect beliefs and ways of identifying that substance. Of course, a concept couldn't have such a purpose if the only way anybody had ever acquired it was simply by hearing someone else use a word for it. But breaking out of this linguistic circle need not require that anybody be good at identifying the substance, just that the substance itself has somehow entered appropriately into the historical formation of the concept.

This point is important for understanding the scope of Millikan's externalist theory of concepts. There is a perspective from which it can seem as if any viable externalism must assign a prominent role to community experts. After all, if the internal properties of thinkers do not suffice to target their concepts at a unique referent, then something else must do the trick. An externalist theory then has two options. It can narrow down the candidate targets on ontological grounds, or it can rely on experts to do the narrowing. Traditionally, the former option has involved restricting targets to 'natural kinds'. So, if we put the special case of natural kind terms to one side, it seems that externalism must hinge on the existence of

experts to whom ordinary thinkers defer. Pettit & McDowell (1986) put the point as follows:

> 'Burge's thought experiment turns essentially on divergences between individual misconceptions and communal standards of correctness. Apart from natural-kind cases, the idea that the world itself can serve as repository of the communal standards is not available …' (p. 9).

Millikan's theory avoids this limitation, precisely because she allows a far wider range of concepts than natural kind concepts to have their referents determined ontologically. Such determination occurs whenever it is the purpose of some concept to track some substance. The important point here is that there are plenty of substances which are not natural kinds: sofas, sealing wax, and sonatas, to name but a few. Any category forms a substance if properties are projectible over it by virtue of some ontological ground. Millikan's insight is that many concepts are teleologically constituted to seek out such substances, and so to home in on referential targets, even in cases where the substances are not natural kinds.

We said earlier that Millikan's general externalism is only loosely connected to her specific interest in substance concepts. But here is one point at which they relate. By focusing on substances, she greatly expands the range of concepts which have externalist contents in their own right, and not only at deferential second-hand.

5. Representing Sameness

We now turn to the second part of Millikan's book. Her main task here is to demonstrate that there is no coherent notion of meaning found at the level of Fregean sense, and that the semantic behaviour of empirical concepts can be explained without appealing to such senses. This leaves her with a radically externalist theory in which meaning exists only at the level of reference.

We shall begin by summarising Millikan's account of what it is for the mind to treat two representations as of the same substance, that is, for the mind to reidentify a substance. Millikan discerns a widespread philosophical tendency to project properties of the vehicles of representation onto the world, and vice versa, and offers a number of examples to illustrate this. In connection with reidentification, the moral is that intrinsically identical representations need not co-refer. Since factors outside the thinker's representational system determine what a particular representation refers to, co-reference cannot be constituted simply by repeating a mode of representational thought.

Millikan considers the case of Zak, a philosophy professor, who suffered selective amnesia following a stroke. He sees the same doctor every day and greets him each morning with 'Hello, Dr. Helm', taking the name from the doctor's name tag. Zak says that Dr. Helm is 'my doctor', but never remembers meeting him before and does not recall any of the daily routine. Millikan's intuition is that Zak does not have the ability to reidentify Dr. Helm, despite the fact that he (let us assume) repeats the same mode of representational thought every time he encounters Dr. Helm.

The same point applies in reverse. Just as intrinsically identical representation need not co-refer, nor does the mind need to use intrinsically identical vehicles of representation to represent properties or substances in the world as being the same. For example, simultaneity of events need not be represented by simultaneous tokening of representations.

Having thus distinguished sameness in vehicle from sameness in what is represented, and the converse, Millikan owes a positive account of what it is for the mind to treat two representations as of the same substance. Her answer is that the mind should treat the representations as of the same in certain kinds of later processing. An analogy illustrates the approach. Neural scientists worry about the binding problem. How does the brain treat attributes represented in distinct parts of the brain as all about the same object? Even when some property seems to be common to different parts of the brain which represent the same object, for example diverse regions of neural firing displaying millisecond synchrony, a further question remains. What shows that this is how sameness is represented, rather than a side-effect of the brain's representing sameness? A decisive answer would be to observe the brain treating synchrony as a marker of sameness when, as 'consumer', it makes use of the representations. Similarly, Millikan holds that two substance concept vehicles are reidentifying the same substance if and only if the mind treats them as representing the same in mental processing.

More precisely, for cognisers to reidentify substances is for them to be able, or for one of their subsystems to be able, to pair representations of those substances in perception or thought as a middle term in a mediate inference, for the purposes of guiding action, or for any form of amplificatory information processing. This comes on two levels: first vehicles are marked as identical, then they are actually treated as identical in use.

How then does the mind mark representations for identity? Here Millikan defends a radical view: for the purpose of mental processing, marking two vehicles of representation as identical is exactly equivalent to typing the two symbols as of the same type. Just as in formal logic rules of inference may in general be exchanged for axioms, and vice versa, so may acceptance of identities be exchanged for symbol typing rules. Intuitively we may want to distinguish between accepting an identity of the form 'a=b', and tacitly adopting a symbol typing rule which treats 'a' and 'b' as symbols of the same type. But Millikan argues that for mental processing this is a distinction without a difference. Either the mind treats the symbols as identical, in which case they are the same symbol for the mind, or not. No sense can be made of an identity which does not destroy the distinction between the symbol types.

So for Millikan the effect of accepting an identity statement is functional, not propositional. You reorder your mental economy to treat as identical two symbols which you previously treated as distinct. If concept vehicles are viewed as attached to files of information, then the process consists of type-identifying the symbols and merging the files of information. Before the identification you had a faulty conceptual system–you had two different symbols for the same substance. Repairing this is not a matter of acquiring a piece of information, but of removing the conceptual redundancy.

Here Millikan is at one with the 'dot-merging' model of identity statements developed in Strawson's Subject and Predicate in Logic and Grammar (1974, pp. 54-55). But she is also concerned to stress that the same moral applies to alternative models of sameness marking,

among which she discusses a 'duplicates' model, an 'equals sign' model, a 'synchrony' model, a 'Christmas lights' model, and an 'anaphor' model. At first sight these models seem different. But Millikan argues, at a functional level they must operate similarly, and in particular must all treat identity statements as functional reorganisations rather than propositional additions.

6. Modes of Presentation and Attitude Attribution

A central concern of Millikan's book is to attack neo-Fregean senses. She sees no virtue in typing concepts by 'modes of presentation', or in other similarly fine-grained ways. Typing by reference is typing enough.

One suggestion, found in Dummett (1973) is that a mode of presentation is a method or procedure for arriving at the referent of a concept. Millikan objects that this is just a way of identifying a referent, and not something that constitutes your concept as a referring term. You can have a concept of something even if you have no real 'procedure for arriving at it', as when you have learnt a word for it but nothing more; conversely, your 'procedure for arriving at something' may pick out something other than the real referent of your concept. Millikan also has more detailed objections to modes of presentation. She argues that there is no principled way to individuate methods for identifying a substance, nor to distinguish methods for identifying a substance from a thinker's beliefs about that substance.

Given her rejection of modes of presentation, Millikan clearly owes some account of our practice of propositional attitude attribution. Since she doesn't recognise Fregean senses, modes of presentation, or anything of that ilk, she can't tell the standard story in which referring terms shift their reference to such Fregean items when used in opaque attitude contexts. Her alternative is as follows. Psychological explanation generally works on the default assumption that thinkers recognise true identities. But sometimes this assumption is defeated, and then:

> 'we describe thoughts by reference to rough aspects of the conceptions involved . . . we may refer to identifying knowledge that forms part of a person's conception of an object, or make reference to a name by which they recognise an object' (p. 175).

That is, we can explain another thinker's reasoning on the basis that he or she has conceptual redundancy, and that some particular conception is associated with only one of the redundant concepts. What Millikan denies is that a stable level of shared 'mode of presentation' exists or is required for these explanations. Full psychological explanation can be given with the machinery of conceptual redundancy together with our ability to convey something about thinkers' idiosyncratic conceptions on a case-by-case basis.

Some readers may wonder whether this does full justice to our actual practice of attitude attribution. There seem to be some cases at least where we use shared conventions for attributing standard conceptions to thinkers, rather than appealing to the pragmatics of the particular case. When I tell you that Jim doesn't know that Cary Grant is Archie Leach, I expect you immediately to understand what I mean, even if you know nothing about the idiosyncrasies of Jim's worldview. In this context 'Cary Grant' is standardly understood to

refer inter alia to a conception portraying a film star, who lived in Los Angeles, and so on, whereas 'Archie Leach' refers to a conception portraying someone who grew up poor in Bristol, England, and was a circus performer when young, and so on.

There will be scope for this kind of understanding whenever some mechanism causes different people share a common conception of some object. Everybody who knows about Cary Grant from films and film publicity will have a 'Cary Grant' conception; those who know something of his early life will also have the 'Archie Leach' conception. It is not hard to think of other cases where common mechanisms ensure that many people have similar ideas about some object, or ways of recognising it, and in many such cases we can expect these shared conceptions to be conventionally associated with specific public words.

Millikan does not deny these last points, though she does not make them in the present volume (cf. Millikan (1984), p. 150 ff). Note that they fall well short of allowing full-blooded Fregean modes of presentation. It is one thing to accept that individuals' conceptions can sometimes be grouped together into rough similarity classes which cut finer than a classification by reference, and that in some such cases we have public conventions which allow us directly to say that someone's conception is in such a similarity class. It would be quite another to say that such conceptions constitute concepts. Millikan could allow the occasional rough grouping of conceptions and conventions for naming them, and still continue to insist that conceptions are merely associated with concepts, and not the basis of their referential power.

7. Doubting Identities

More serious worries seem to face Millikan in connection with identity propositions.[1] As Millikan sees it, accepting an identity is functionally equivalent to merging two dots in a Strawsonian model, or equivalently to coming to treat two vehicles of a concept as the same in inferences. She maintains that,

> '. . ., it is better to say that, as distinguished from an identity statement or assertion, there is no such thing as an identity judgement. It is not the job of an identity sentence to induce a belief. Its job is to induce an act of coidentifying.' (p. 172-3)

Similarly, one takes it, she holds that rejecting an identity is simply to fail to embrace it in this way, to fail to merge the dots.

This is a clear picture, but there is room to doubt that it can deal with all psychological phenomena. For a start, we have attitudes to propositions of identity other than acceptance or rejection. We can entertain such a proposition, and wonder about it. (Is Cary Grant the same person as Archie Leach?) It is not obvious how Millikan proposes to deal with such attitudes. Perhaps she would say that someone wondering about an identity is somehow poised to mark the vehicles for identity but is not yet committed to doing so.

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[1] Guy Longworth impressed this point on us.

Even if this works for wondering about identities, consider the more difficult case where someone comes to embrace an identity, and then wonders whether it is true after all. I have spent most of my life believing that Cary Grant is Archie Leach, but then a paragraph in a magazine glimpsed over someone's shoulder in the tube makes me think I may have been confused, and perhaps it is Clark Gable who is Archie Leach. The trouble for Millikan is now that she can't even view my doubts as a readiness for conceptual reorganisation, since I won't anymore have a distinct Archie Leach notion to structure this readiness. Since I long ago merged my 'Archie Leach' and 'Cary Grant' dots, I don't anymore have a distinct 'Archie Leach' notion available to merge with 'Clark Gable'.

Millikan does discuss this issue (p. 168). She argues that in breaking an identity we have to engage in theoretical reconstruction in order to put the right pieces of information with each of the resultant new concepts; and she doubts that this is usually possible. Millikan insists that when we do attempt to unweave the items of information associated with an existing conceptual dot, we do so not on the basis of some kind of stored memory of their provenance, but rather by post hoc speculation on the matter.

We are not convinced. Millikan's account may fit some cases, but there surely remain plenty of others where people accept substance identities and yet retain the ability to doubt them without speculative reconstruction. We have already met the Archie Leach and Cary Grant type of examples. Here are some more. Am I quite sure that Jim was the man I saw robbing the grocery store? Maybe water isn't H_2O after all. It seems to us that the Millikanian programme needs to say something further on this point. We shall conclude by briefly considering some options.

(A) Modularity

Perhaps the mind sometimes thinks about some entity in more than one 'medium'. I can have a visual concept of a circle, say, and also a theoretical concept of a locus of points equidistant from a given point. Maybe the visual and theoretical media are too encapsulated for these concepts ever to be properly 'merged'. The most the mind can do is create a channel between them, allowing information to be transposed from medium to medium as needed. Millikan does suggest (pp. 200-201) that such a constrained cognitive system may fail to have the generality required for true 'thought' or 'judgement'. Maybe so. But this does not rule out the possibility that in some cases it is precisely such constraints that lead the human mind to preserve distinct conceptual vehicles even after accepting an identity.[2]

[2] Perhaps this is part of the reason why materialism about consciousness faces such an uphill struggle. Maybe we have two sets of concepts both of which in fact refer to the same conscious states: material concepts of brain states, and phenomenal concepts which represent conscious states by simulating them. Materialists think that the states here referred to are identical. But, even so, they may be unable to 'merge' the concepts, because the brain realises them so differently. See Papineau (forthcoming), chapter 6, for further discussion of this point.

(B) Meta-representation

We argued in section 6 above that our practice of propositional attitude attribution is often informed by a systematic understanding of the kinds of conceptions different individuals attach to their concepts. Perhaps our occasional ability effortlessly to doubt believed identities derives from our turning this meta-representational facility in on ourselves. We know that it is common enough to have unmerged concepts associated with distinct 'Cary Grant' and 'Archie Leach' conceptions, or 'water' and 'H_2O' conceptions, or 'Jim' and 'man robbing the store' conceptions. And so we wonder whether we might not be better off having such unmerged concepts ourselves. True, this suggestion does imply that doubting accepted identities is always a meta-representational matter, and this may seem unattractive. Still, there is no doubt that meta-representational epistemological reflection permeates human cognition. It is not entirely implausible that such reflection may be involved whenever we come to doubt firmly believed identities.

(C) Descriptions

Perhaps some of the cases where people doubt believed identities can be understood in terms of their having a description on one side of the identity sign. ('Is Jim the man who robbed the grocery store?') Millikan does not say much about descriptions. It is clear that, when a substance term is introduced by a description, she would not regard the description as contributing anything to the semantic value of the substance term, even in the most graphic cases. ('Let the inventor of the zip be Julius.') But she will surely allow that there can be identity claims involving Russellian descriptions with quantificational content.

(D) Caginess

The problem we are pressing is that, on Millikan's account, someone who comes fully to believe an identity will thereby destroy the conceptual wherewithal needed to doubt that identity. Perhaps the simplest response to this worry is to say that fully believing anything is rarer than we think. From a Bayesian point of view, full belief is a very abnormal state (indeed an irrational one, precisely because it precludes second thoughts). So maybe what we normally count as embracing identities is something less than full belief. In the terms suggested above, it would be a matter of being very ready to treat the vehicles as identical, without doing so fully. And this would then immediately explain how we can come to be more sceptical about the identity, for the dots wouldn't yet have been merged.

One form of less than full belief in an identity would be for the brain to treat two types of vehicle as identical for some purposes but not for others. Vehicles which are intrinsically indiscernible for one piece of processing might retain features which allow them to be distinguished for another piece of processing (since they remain different tokens). Millikan's insight is preserved: for a particular piece of reasoning identifying concepts is equivalent to symbol-typing their vehicles as identical. Our suggestion is that the identity need not carry over to other pieces of reasoning.

We think that all these four options are generally consonant with Millikan's programme. The first two, it is true, require her to retract some of things she says; but they don't seem to undermine any of her central claims, and in particular her central theses that the referential power of concepts is independent of associated conceptions, and that when identities are accepted (within a single medium) this is equivalent to merging concepts. The last two suggestions, while additions to what she herself says, don't even require any retractions. Still, the final suggestion might reduce the interest of what she says, and runs against the spirit of her views, since it would suggest that the mind rarely makes full use of the flexibility that she argues derives from merging dots.

8. Summary

Millikan's *On Clear and Confused Ideas* offers us a carefully thought-out theory of substance concepts and a vision of semantics without neo-Fregean senses. We have pointed to various difficulties occasioned by rejecting senses, and in particular relating to propositional attitude attributions and identity judgements. Even so, we think that Millikan has bravely adopted and explored a radically externalist theory, and our criticisms only reflect the fact that it is an arduous task. We are left with an important and original contribution to the literature on concepts, which it has been a pleasure to read.

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10 May 2001

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