

REFERENCE  
AND  
CONSCIOUSNESS

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## Introduction

It is experience of the world that puts us in a position to think about it. Without experience, we would not know what the world is like. Those who have experiences of which we know nothing may be able to think in ways of which we know nothing. Those who do not have our experience of the world will not be able to think of it as we do. These points show up even at the simplest levels. Someone who has never had experience of the colours will not be able to understand the concepts of the different colours. As Locke said, a scholarly and indeed brilliant individual born blind, on pursuing an investigation into the nature of the various colours, may eventually say of scarlet, "Tis like the sound of a trumpet!", but this will not reflect any knowledge of what scarlet is. Or again, if I have picked something up and I conceal it from you, I may make a series of remarks to you about 'this extraordinary object', but the most direct way for you to interpret my remarks is by experiencing the object itself; seeing the object would mean that you knew what I was referring to.

This connection between reference and consciousness is one that has been lost sight of. The complexity of the issues surrounding the two topics individually has led to a fragmentation of effort in theorizing about them. Reference is one problem, consciousness is another. This means that it is easy to lose sight of ways in which the two problems illuminate each other. We understand reference better when we keep in view that it is at bottom a phenomenon of consciousness. We know better how to think about consciousness when we know that, whatever else is true of it, consciousness of objects is what provides knowledge of reference. This gives some discipline to theorizing about consciousness: of what we say about consciousness, we can ask whether it contributes to explaining how consciousness can be what provides knowledge of reference.

There is a way of focusing discussion of this connection which appeals to the notion of attention. Reference and attention are generally taken to be different topics. Reference is one of the fundamental problems in philosophy, though the nature of reference is not often directly discussed by scientists: the general problem is how our thoughts and words connect to the things about which we think and talk. Attention, in contrast, is little

discussed by philosophers, but one of the most intensively studied phenomena in cognitive science. To see why attention seems important in cognitive science, suppose for a moment that you think about a human being as an engineer might view the thing. There is a lot of machinery here, in the human being, which can be deployed now on this task, now on that. What makes the difference between the machinery being deployed on this object as opposed to that object, is a difference in what you are attending to. Attention is an element in the control of the whole system. So reference and attention seem individually to be important topics, in philosophy and psychology respectively, yet to have little to do with one another.

Suppose, though, that you and I are sitting side by side looking at a cityscape, a panorama of buildings. If I am to think about any one of those buildings, if I am to formulate conjectures or questions about any of those buildings, if I am to be able to refer to any one of those buildings in my own thoughts, it is not enough that the building should simply be there, somewhere or other in my field of view. If it is simply there in my field of view, though unnoticed by me, I am not yet in a position to refer to it; I cannot yet think about it. If I am to think about it, I have to single out the building visually: I have to attend to it. And if I want to refer to that building, to make a remark about that building for your benefit, I have to draw your attention to it. That is what pointing is. Pointing is at once the most basic kind of reference to objects, and the single most useful way of drawing someone else's attention to an object. So reference and attention are not just different topics. When we think about demonstrative reference in particular—that is, reference made to a currently perceived object on the basis of current perception of it—it seems that reference to the object depends on attention to the object. So we should expect that philosophical problems about reference and psychological theorizing about attention should be capable of illuminating one another.

It is attention as a phenomenon of consciousness that matters for knowledge of reference. If I am to understand a demonstrative referring to an object, it is not enough merely that the object be there somewhere in my visual field; I have to attend to it. But the attention that is needed here is, as it were, a matter of experiential highlighting of the object; it is not enough merely that there be some shifts in the architecture of my information-processing machinery, remote from consciousness. To understand how knowledge of reference depends on attention we will have to understand the relation between the experiential highlighting of an object and underlying shifts in the configuration of information-processing machinery.

We can make a rough division between a description of what knowledge of reference is, and a description of what knowledge of reference does. When I say that knowledge of reference is provided by conscious attention

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to the object, this is a description of what knowledge of reference is, and I will amplify it by looking in detail at what conception of consciousness, and what conception of conscious attention in particular, we need to be appealing to here. But we also have to look at what knowledge of reference does—what the significance is of knowledge of reference. I think that, given a preliminary characterization of knowledge of reference as provided by conscious attention to the object, we can get at this by looking at the functional role of conscious attention, and, in particular, by articulating the relation between attention as a phenomenon of consciousness and attention as an information-processing phenomenon. The general line of my argument is this. There are many information-processing systems that run automatically, in parallel, and they are not, usually, directly affected by attentional shifts. For example, low-level vision or reflex movement may be of this type. But sometimes information-processing is carried out under more central control. For example, the motor processing involved in executing a voluntary action is not run automatically: it is responsive to the conscious intentions of the subject. Similarly, if you are, as it were, visually interrogating a scene, for example if you are a policeman looking for signs of trouble, the visual information-processing you are performing is in the service of your conscious objectives; once you believe you are off-duty your vigilance may relax and the information-processing is simply no longer performed. This implies that conscious attention to an object—the experiential highlighting of that aspect of your perception—means that this aspect of your experience has a different functional role to the functional role it had when it was not so highlighted. That aspect of your conscious experience is now connected to certain information-processing machinery in a way in which it was not previously so connected. It is one of the factors which cause that information-processing machinery to swing into play, and it also defines the objective of the information-processing machinery. So we can ask the question just how conscious experience of the object manages to identify the target of the information-processing machinery. Rather than seeing consciousness and information-processing as systems causally insulated from one another, we have to see them as causally explaining each other's movements, and we have to find the commensurability between the way in which conscious experience identifies the objects we think about, and the way in which the targets of information-processing are identified.

Let me set this project in context. One of the defining problems of twentieth-century philosophy of language was the relation between knowledge of the reference of a term, and the pattern of use that you make of the term: the inputs and outputs to propositions involving the term, the ways in which you verify or act on the basis of propositions involving the term.

The difficulty is this. There is a common-sense picture of the relation between knowledge of reference and pattern of use. On the common-sense picture, your knowledge of reference controls the pattern of use that you make of the term. You use the term the way you do because you know what it stands for. In the later Wittgenstein and in Quine, the problem is that they think the common-sense picture cannot be sustained. There is only the pattern of use: there is no such thing as a knowledge of reference which controls the pattern of use, and to which the pattern of use is responsible. In later Wittgenstein, the form the resulting problem takes is that the pattern of use now seems arbitrary, since it is no longer thought of as controlled by knowledge of reference. This is the issue he confronts in his discussion of rule-following. In Quine, the form the problem takes is that when we have only the pattern of use to consider, we find that it seems to leave under-determined the ascription of meaning to the terms of a language. This is Quine's problem of the indeterminacy of translation. In the ensuing discussion, amazingly, the common-sense picture—that you use the word the way you do because you know what it stands for—is all but lost sight of. I am suggesting that, by thinking of knowledge of reference as explained by conscious attention to the object, we can see how to reinstate the common-sense picture.

Just to illustrate again the fundamental point about conscious attention, suppose that you are sitting in a lecture and your mind wanders off a little, the lecture fails to grip. So you look around idly at the other people in the audience, your gaze resting now on this person, now on that. In effect, you highlight now one aspect of your experience, now another. In effect, you put a yellow highlighter now over one or another part of your visual experience, as you wonder about this or that person. Now suppose that as you sit there, your neighbour whispers in your ear, 'Who's that man there?' To understand the remark you need to know who he means. So you need to single out the right person visually. It really is conscious attention that matters here. If, as you listened to your neighbour, the neural circuitry underpinning visual awareness blinked out of operation, leaving your visuomotor circuitry intact, it could happen that your visuomotor system, remote from consciousness, managed to lock on to the right person, so that you could, to your surprise, point to the right person. Perhaps in some sense your finger might be said to know who was being referred to. But you would not know who was being referred to until normal service was resumed and you achieved experience of the person.

Of course, in an ordinary case it can happen that I am consciously attending to, for example, one building, while you are talking about another one in front of us. In such a case I might still understand exactly what you are saying in your use of the demonstrative 'that building', because I

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am relying on my having consciously attended to the referent a moment ago. I shall mostly ignore such complications in what follows. Or again, it can happen that I understand you perfectly, even though I am not 'giving you my full attention', as we would ordinarily say, perhaps because I am simultaneously worrying about my debts. But that is consistent with my understanding of your remark depending on my having singled out the object in experience, even if I subsequently made little of your remark. Or again, it can happen that I am consciously attending to the building to which you are referring, even though I do not realize that it is the building to which you are referring. Conscious attention to the building is not in itself an understanding of your remark: I have to make a link between that conscious attention and the demonstrative you use. In the first two chapters I will begin on the characterization of that link, and pursue it through Chapters 6 and 7. Finally, there are subtle and delicate cases in which an understanding of the demonstrative may involve some combination of descriptive knowledge and conscious attention, cases such as those in which I refer to the cast shadow of an object I can see, a gleam of light on a car roof, or a reflection in a puddle. Demonstrative reference in such cases may involve thinking of the referent as dependent on a substantial thing. But I will set aside the exact analyses of such cases in what follows, concentrating on the primal case of reference to the substantial objects themselves.

Summing up, there are three levels we can look at. There is the level of conceptual thought about your surroundings. There is the level of conscious attention to your surroundings, which is more primitive than the level of conceptual thought, and which explains your capacity for conceptual thought by providing you with knowledge of reference. And there is the level of the underlying information-processing systems, such as high-level visual processing or the visuomotor system, which conscious attention can cause to swing into play. It is the liaison between conscious attention and the underlying information-processing sub-systems which provides you with your capacity to use the term, to verify propositions involving a term, or to act on the basis of such propositions.

The problem which led both the later Wittgenstein and Quine to abandon the common-sense picture on which knowledge of reference controls the pattern of use that you make of a term was what we might call the derivation problem. They held that there was no way in which the pattern of use of a term could be derived from knowledge of the reference of the term. So Wittgenstein spoke about the lack of any blueprint from which we could derive knowledge of how to use a term, and Quine spoke of the myth of meaning laid up in a museum from which a pattern of use could be derived. But by focusing on the liaisons between conscious attention and

the underlying information-processing involved in verifying or acting on the basis of propositions, we can see how to solve the derivation problem, reinstating the common-sense picture of use as controlled by knowledge of reference.

The basic parallel is between the way in which conscious attention to an object can control the information-processing involved in acting on that object, or verifying facts about that object, and the way in which knowledge of the reference of a demonstrative term means that you can act intentionally on the object, or verify demonstrative propositions about the object. This is what makes it possible to identify conscious attention to the object as what provides you with your knowledge of the reference of the demonstrative. But further to making remarks about its functional role, we have also to consider what conscious attention to an object intrinsically is, that it can constitute knowledge of reference. Conscious attention is not merely a subjective state. It is a relation between the subject and the thing experienced. So it is not exhausted by the liaisons between conscious attention and the underlying information-processing.

Russell thought of acquaintance as a cognitive relation more primitive than thought about an object, which nonetheless, by reaching all the way to the object, made thought about the object possible. I will argue that this provides a model for the way in which we think of conscious attention to an object. It is a state more primitive than thought about the object, which nonetheless, by bringing the object itself into the subjective life of the thinker, makes it possible to think about that object.