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REPRESENTATION AND REALITY

Thesis submitted for the degree of
Doctor of Philosophy
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This thesis is all my own original work

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CHAPTER 9: REPRESENTATION, THOUGHT AND REALITY

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(and ABSTRACT)

The entire weight of Locke's philosophy of mind hangs on a theory of representation. What is at issue here is not just the representative theory of perception, with all its familiar problems. The failure of Locke's theory of knowledge to do the job it is supposed to do can be traced back to an inadequate account of what it is for the mind to grasp the reference, or the sense of a sign, i.e. to represent something. It is all the more strange, therefore, that Locke never discusses the question of what it is for something to represent something else. Although the Essay presupposes an implicit theory of representation over and over again, that theory is never made explicit.

But this remarkable omission is not confined to Locke. A concept of representation has played a part in almost all the classic theories of knowledge, for example, in Aristotle, Aquinas, Descartes, Berkeley, Hume, Kant, Husserl etc. In Wittgenstein's Tractatus Logico-Philosophicus we come much closer to an articulated account of representation in the 'picture' theory of propositions and states of affairs. But nowhere in these classic accounts do we find any explicit articulation of a theory of representation as such.

In more recent times there has been some opening up of the topic of representation as, for example, in Foucault's account of representation and signification in different 'epistemes' (Foucault, 1970); and in a recent colloquium on representation (Freed, Marras, Maynard, 1975). But discussion of representation are usually concerned with a particular form, e.g. political representation (Pitkin, 1967 and 1969), or representation in art (Scruton, 1974, chapter 13), rather than with the general question of what it is to use one item to represent another. There are, however, two areas of discussion which have raised some general questions about representation. One is semiotic theory, which deals with the topic of signification, and this as we shall see is closely related to representation; the other is cognitive psychology, in particular Piaget's account of thinking. For this reason a detailed examination of these two areas occupies a large part of what follows, even though they may not normally be regarded as areas of central interest in philosophy.
Perhaps the general lack of engagement with the topic of representation as such, especially by philosophers who have been preoccupied by the theory of knowledge and who might therefore be expected to face squarely the question of what it is for one thing to represent another, can be explained by the fact that the general concept is thought to be intuitively clear and does not need explanation. Thus, it might perhaps be thought that though there are special problems about particular kinds of representation, e.g. political representation or representation in art, and perhaps even more in the question of how it is that language manages to represent the world, these arise out of the special nature of the particular subject matter rather than from general difficulties about the relation of representation itself. In fact, however, these special problems which arise in special contexts - e.g. as questions about meaning and truth conditions in the philosophy of language - are often simply special aspects of a general problem about the nature of representation as such. For in the very basic conception of representation, as making one thing stand for another, all is not as straightforward as it may seem.

As we shall see in our study of Locke, it is precisely because representation seems to be so unproblematic, but is not, that problems arise unnoticed by Locke. These problems arise out of apparently uncontroversial situations which we may take for granted at a commonsense level. A photograph resembles its subject, but is it true to say that resemblance is a 'natural' relation which creates a link of representation? Does an icon simply point to some other item, in virtue of its resemblance? Peirce and others have thought so - mistakenly, as we shall see. Can non-language-using animals represent things, or understand representations? We might have good reason for thinking so. After all, cats and dogs respond to the rattle of plates (nowadays even to the sound of an electric can opener) as a sign of forthcoming food; we talk about 'sentinel' cockatoos which give 'warning' cries of 'danger'. In this sense, then, our intuitions, expressed in our ordinary language, are that animals do use representation. But there are differences. Dumb animals do not (as far as we know) intend to represent, and this fact has an important bearing on our understanding of representation. Are mental images representations? We almost always talk about them as if they were. For example, "I have an image of the circular window in Chartres Cathedral, but I'm not sure if I have all the right colours in it". Does this mean, then, that images are mental pictures which
resemble their originals, though imperfectly? How does the image come to represent the external item, how do I know what it represents?

These are some of the questions that we shall have to consider in the course of developing an account of the nature of representation. That is the major task of the first two parts of this thesis. In Parts I and II I shall develop an account which has as its central claim that representation is a three-term relation between representative item, represented item and some agent or individual who makes or understands the representational relation. The unpacking of this representational relation is another important question. No adequate account of the relation can be derived from a passive theory of mind (such as Locke's); active thought is essential to the establishment of the representational relation. Representation, as we shall see, is an intentional act - that is to say, an act of thought directed towards some object(s).

With a provisional account of representation worked out in the first two Parts, we shall turn in Part III to some of the broader implications of this account. What, for example, is the relationship between representation and thought, and between representation and reality? Piaget has claimed that representation is identical with (conceptual) thought. My claim is the more limited one that all conceptual thought involves an act of representation. The capacity for representation is, in fact, an important differentia between human thought and the thought of other animals. Representation gives us the means to summon up in thought what is spatio-temporally absent or non-existent. We may be tempted to think of the content of this thought (about some absent item) as detachable from the act of thought itself. Having done this, it is easy to succumb to the further temptation to think of this 'detached content' as some inner mental entity. When we analyse representational thought correctly, however, we shall see that it is an act of thought having as its ultimate object or reference some item of reality.

This, then, is a major theme of the thesis: that no signifier yields information by itself; it must be referred by some agent to some feature or features of the real world. But the dependence between representation and reality goes both ways. Our notion of 'reality' is in turn dependent on our capacity for representation. This is not the idealist thesis that the objects of the world have no existence outside the perceiving mind, but rather the phenomenological thesis that in apprehending what we think of as 'things in themselves' we bring to this
Representation is required for this synthesis. We grasp 'reality' through a network of concepts and past experiences. Were it not for the application of representation in this form to reality, not only could it not be recognised as reality, we should have no cognitive grasp of it at all. We should be in the same position as non-human animals which only respond to present items by means of simple stimulus-response mechanisms.

**ABSTRACT**

Part I raises the problems that will shape our investigation of representation. Locke's account is inadequate because of its failure to allow any role to an agent who creates or understands the representational relation. Representation occurs mysteriously by means of mediating entities. This inadequacy becomes even more evident in contrast with Aquinas' account of the activity of mind: representation for Aquinas is an act (not an object) of mind. A reading of Aquinas also illuminates the reasons for the extreme passivity of Locke's account, since its origins are clearly to be seen in the Thomist account, but Locke's version has lost the most important feature of the Thomist account. Descartes' conception of 'ideas' is ambivalent between act and object; and, in examining some of the problems of his account, we shall see the importance of an intentional interpretation of representation: that it is an act of thought about some object.

Part II develops the issues raised earlier within the particular context of signification and semiotic theory. The semiotic theories of Saussure, Peirce and Piaget are examined, with occasional reference to Frege. The theme of Chapters 4 to 6 is that a signifier is only as good as the intelligence which uses it. It is not because humans have a sign system that they can achieve 'disengagement' from any particular 'here-and-now' context: other animals also use representative items, but not in the same way as humans do. Something more is required than just the availability of some physical item which can stand in for something else. There are various kinds of signifiers - broadly speaking, those which are used unwittingly and those which are unwittingly used - and what gives a signifier its particular structure is the manner of its use. Part II, then, deals with questions about
the representative item and how it came to represent some other item. But this investigation reveals the importance of the representative act, and it is to this topic that we turn in the final Part.

Part III focuses on the activity of representation. What kind of act is it, and how is it possible? In Chapter 7 a distinction is made between active and passive senses of representation, and arising out of this distinction we study the particular case of images, considered as a form of representation. Chapter 8 presents a contrast between non-representational (animal) thought and representational thought, and this leads to a final discussion of the relationship between representation, thought and reality.
PART I

SOME HISTORICAL PERSPECTIVES
INTRODUCTION

Part I serves the purpose of bringing into focus some of the questions which will be explored in Parts II and III. The three classical accounts examined here do not on the whole deal explicitly with the topic of representation, but here as elsewhere in philosophies of mind there are implicit accounts of representation. Not surprisingly, since representation is inseparable from all conceptual thought, and is indeed tied up with all our transactions with reality. That, in fact, is one of the themes of this thesis.

Locke, Aquinas and Descartes raise problems of central interest and importance in our understanding of the nature of representation. For example: is representation just a representation (an entity or object) or is it rather a process, something which arises out of an act of thought? And how does the above question relate to the characteristically different 'active' and 'passive' accounts of mind by Aquinas and Locke? Can there be representation without some agent who creates the representation relation? Is representation always Intentional in nature?¹

The implications of active and passive philosophies of mind for a theory of representation is the main topic of the first two chapters. In Locke we find an account of mind which reaches the extreme of passivity. Aquinas, on the other hand, stresses the active role of mind in thinking and understanding reality. An examination of Locke's account reveals serious inadequacies in his implicit theory of representation. These inadequacies emerge all the more sharply when we turn to the contrast with Aquinas. Chapters 1 and 2, then, are concerned with the following:

1. The identification of passive models of mind;
2. The association between the passive model, and the lack of 'agency' in representation, that is to say, some agent or individual who makes or interprets something as a representation;

¹ In order to distinguish the above use of Intentional from the various other uses, I shall spell the word 'Intentional' (with an upper case initial) whenever it is used in the sense of Brentano's conception of Intentionality. This usage, however, should not be taken as conforming to any particular doctrine of Intentionality, but broadly within the tradition which understands Intentionality as a consciousness of or a directedness towards some object.
(3) Recognition of the impossibility of giving an adequate account of representation in the lack of sufficient emphasis on agency.

Arising out of the above, we shall find two closely connected issues:
(a) the distinction between activity and passivity in models of mind;

and

(b) the tendency to postulate mediating entities in some (passive) theories of knowledge.

In Chapter 1 we shall examine Locke's account of mind with its emphasis on passivity, and 'ideas' as mediating entities. This examination leads us to an unfolding of his theory of representation, which has two curious features: the represented item is not only unperceived, but in principle unperceivable; and there is no room for any third term in the three-term relation of representative item, represented item, and some individual for or by whom the representation occurs.

Chapter 2 is concerned with the contrasting emphasis on activity in Aquinas' account of mind, and a correspondingly active account of representation. For Aquinas representation is not a matter of representative items lodged in the mind, but rather an act of the intellect. What is 'stored' in the intellect is not a representation (like a Lockean idea) but rather the means by which reality can be represented. In this chapter also we shall find the origin of Locke's mediating entities, in one element of Aquinas' theory of knowledge. That element takes on a very different character when transported from an active to a passive context. Finally in Chapter 2 we shall see some implications of the role of representative thought in our understanding of reality, a theme to which we shall return in Part III.

Chapter 3 pursues the theme of mediating entities in the context of Descartes' treatment of ideas - a treatment which falls somewhere between the extremes of Locke's passivity and Aquinas' activity. Or perhaps it would be more accurate to say that he vacillates between those two positions. The result is an ambivalent treatment of ideas which sometimes come out as acts, like Aquinas' Intentional acts of thought, and sometimes as objects, like Locke's mediating entities. An identification of this ambivalence in Descartes leads on to a discussion of his attempt to detach the content of a representative thought (e.g. about the sun) from the act of thought. His attempt fails, for reasons which we shall see, and which are in
general connected with the essentially Intentional nature of representative thought.

The task of Part I, then, is to begin to mark out the scope of our exploration of the nature of representation. Some of the conclusions of Chapters 1 and 2 will be pursued in the context of semiotics in Part II, while the main theme of Chapter 3, the fundamental Intentionality of representation will emerge again in the first chapter of Part III.
CHAPTER 1

LOCKE: THE 'PASSIVE' MIND

1.0 Introduction

Locke's account of representation offers a useful lead in identifying some important features of representation. Those features can be summed up by saying that there are three terms in a relation of representation: the reality which is represented, the representative item, and the agent or individual by or for whom the representation is made to exist. This, in turn, implies that the agent must have available to it both the other terms in the relation. It will be immediately obvious that the very possibility of this last condition is denied in Locke's account, where the represented items are not only unperceivable, but unperceivable in principle.

Locke's account of representation, then, seems to rest on the principle of causation alone, or perhaps on the assumption that ideas represent simply because of a 'natural' iconicity. Both of these as they stand in Locke's account are insufficient to establish a relation of representation. The reasons for Locke's failure to present an adequate account of representation are connected with his essentially passive account of mind. And this, therefore, will be the concern of the first part of this chapter: the fundamental passivity of mind, according to Locke.

As Locke himself says:

"...in bare naked Perception, the Mind is, for the most part, only passive; and what it perceives, it cannot avoid perceiving." (Locke, 1975, HU.II.ix.1)

According to Locke's theory of knowledge the external world becomes represented within the mind by mean of causal chains, beginning with the external world, and activated in a manner analogous to Hume's billiard balls or, in more modern terms, like the firing of neurones in a nerve fibre. The items which act on each other are ideas, self-contained capsules of thought, which transmit their 'messages' along the causal chains.

It may seem that this statement fails to do justice to Locke because after all simple ideas, the passive effects of perception, are only the first link in the chain towards knowledge. The mind itself forms complex ideas and carries out 'operations' of thought upon them. But, as we shall see, these operations have a strictly limited scope.
There is no real possibility for active thought in Locke's account. And this is the point that leads us into the second part of the chapter, which deals with the theory of representation.

At this point it may be necessary to make it clear that the target of criticism in this chapter is not the representative theory of perception (whatever may be wrong with that theory). It is true that some of the points made here (for example, the impossibility of perceiving the reality represented by ideas) may be taken as arguments against the representative theory of perception; but this is only incidental to our main concern which is to show that Locke gives an inadequate account of what it is for the mind to grasp the reference or the sense of a sign or, more simply, what it is to represent something. The demonstration of this inadequacy involves frequent references not only to representation but also to perception. But that is precisely because - significantly - Locke makes no real distinction between perceiving and knowing (or understanding). His account is derived from that of Aquinas who does make the distinction quite clearly, but that distinction becomes blurred in Locke.

1.1 Locke's passive view of mind

Ideas are Locke's basic unit of representation. About simple ideas he says that they are:

"...the natural and regular production of Things without us, really operating upon us; and so carry with them all the conformity which is intended; or which our state requires: For they represent to us Things under those appearances which they are fitted to produce in us:..." (HU.IV.iv.4)

And right at the end of the Essay, when he discusses Semioticke, the doctrine of signs, he talks about ideas as representations in the following manner:

"For since the Things, the Mind contemplates, are none of them, besides it self, present to the Understanding, 'tis necessary that something else, as a Sign or Representation of the thing it considers, should be present to it: And these are Ideas." (HU.IV.xxxi.4)

At a very basic level, then, ideas stand in for objects in the world. They are the building blocks of all thought, and can be constructed and manipulated in various ways. But no matter how they are manipulated, the major weight of thought remains locked within the building blocks of ideas.
Locke's apparently frequent ambiguous use of the term 'idea' can perhaps be clarified if we see his classification principle as the following one (as reconstructed by Hacking):

"An idea is any object that can be contemplated by a thinking being without existential commitment to anything except that [thinking] being." (Hacking, 1975, p. 29)

All that we have direct knowledge of is the contents of our own minds; therefore anything that is known, is known as an idea. And ideas are always objects in the mind; not only when they are mental images or sense data, but also when they amount to what we should now want to call concepts. The word 'idea', says Locke, stands for "whatsoever is the object of understanding when a man thinks...whatever is meant by Phantasm, Notion, Species." (H.U.I.1.8) Once an idea has been produced in the mind it has an existence which is in a sense independent of any act of the mind. It is true that Locke speaks of ideas as being present in the mind only in the context of some mental operation such as a thought, but this operation is never intrinsic to the nature of the idea. It is more like the interpretation of 'mental illumination' which Aquinas rejects as a misguided understanding of Aristotle's intellectus agens: simply a light which illumines what is already present. This interpretation emerges very clearly from Locke's discussion of memory. He describes memory as the "Storehouse of our Ideas" (H.U.II.x.2). Retention is both the faculty of keeping an idea "for some time actually in view" (H.U.II.x.1), and the power "to revive again in our Minds those Ideas which after imprinting have disappeared, or have been as it were laid aside out of Sight" (H.U.II.x.2). He goes on to explain that our ideas, "being nothing but actual Perceptions in the Mind", cease to be anything when there is no actual perception of them. And that the laying up of ideas in the "Repository of the Memory" really means no more than the mind has the power to revive former perceptions, with the additional perception annexed to them that it has had them before. And in the following section he says that "attention and repetition help much to the fixing any ideas in the memory", and that the ideas which make the deepest and most lasting impression are those which are accompanied by pleasure or pain (H.U.II.x.3).

At this point his account has something in common with a modern neuropsychological account of memory in terms of chemical traces, synapses and neural pathways. He seems to be saying that talk about storage of ideas means the establishment of capacities to recreate certain ideas, in the same way that some neuropsychologists would say
that memory involves the laying down of 'neural pathways' which facilitate the future occurrence of synaptic connections which have taken place before. So in some ways Locke's account has a modern twist to it, or at least it sounds as if it can be explicated in terms of accounts that don't present thoughts and memories and images as entities in the mind. But what distinguishes neuropsychological theories about memory from Locke's account is that the former explain memory in terms of the acquisition of machinery (either physiological or mental) for creating a new thought about something in the past. Whereas on Locke's account, what is retained is the original thought itself, with a new thought annexed to it. It is true that Locke says that the thought does not literally stay in the mind when there is no perception of it.

Locke, in fact, appears to be inconsistent. He says on the one hand that ideas not actually perceived are not anything, but also that when they are not perceived they are in a mental cellar, ready to be brought back. The problem seems to be the following. Locke thinks that ideas are entities, that what gets stored is an idea (i.e. entity) rather than a process or machinery for creating new ideas. He cannot say, therefore, that a new idea arises in memory, as he could if it were only the process or machinery that were stored. Instead he must say that the stored idea reappears and, hence, becomes involved in problems about the ascription of numerical identity to thoughts. (It is worth noting here that Locke's account appears to be derived from Aquinas' account of the intellect as the 'locus' of the 'species intelligibilis'. And the word 'species' is the Latin equivalent of the Greek eidos, or idea. But Aquinas' species, unlike Locke's ideas, are not objects of thought but rather the means by which we can know objects. For Aquinas, then, what is stored in the intellectual memory is something much closer to a sort of machinery which can be used to produce a new thought about something we have thought about before.)

One thing that is clear, however, in all this rather confusing discussion of memory is that here as elsewhere ideas are always inert objects which contain frozen instants of mental activity, which need only to be surveyed to be reknown.

Once we have established that ideas are objects in the mind which represent various forms of reality, we may ask, first, how do ideas become lodged in the mind; and, second, how does any active thought process take place.
The answer to the first question brings us to the causal chain model. On Locke's causal theory of perception, ideas become the end products of causal chains. Ideas do not always resemble their causes: that is the case only with simple ideas of primary qualities (HU.II.viii.15). But all ideas are representative entities and all are the products of causal chains. Ideas of sensation are the results of the impingement of external objects on our sense organs (HU.II.i.2,3) and ideas of reflection are caused by "the internal Operations of our Minds, perceived and reflected on by ourselves" (HU.II.i.2,4). (The mind's operations are thinking, doubting, believing, reasoning, knowing, willing and so on.) Ideas of reflection therefore depend on ideas of sensation. They presuppose that we have something to think about. Provided that we keep our eyes and ears - and other sense modalities - open, we cannot but receive ideas of sensation: they "force an entrance to the Mind" (HU.II.i.6). At Locke's second level of representation, ideas of reflection which arise out of the mind's perception of its own operations (thinking, doubting, believing, willing etc.) also seem to be the products of causal chains. The account given of these second-order ideas parallels the account given of the first-order ideas. It is true that in some places Locke writes as if the mind is more active in the case of ideas of reflection than it is in the case of ideas of sensation. For the formation of ideas of reflection the soul must "reflect on and consider" the mind's operations (HU.II.i.4). This sounds like some activity of the mind. But at the end of the same chapter Locke says:

"the Understanding is merely passive...the Operations of our minds, will not let us be without, at least some obscure Notions of them. No Man, can be wholly ignorant of what he does, when he thinks. These simple Ideas, when offered to the mind, the Understanding can no more refuse to have, nor alter, when they are, imprinted, nor blot them out, and make new ones in itself, than a mirror can refuse, alter, or obliterate the Images or Ideas, which, the Objects set before it, do therein produce. As the Bodies that surround us, do diversely affect our Organs, the mind is forced to receive the Impressions; and cannot avoid the Perception of those Ideas that are annexed to them." (HU.II.i.25)

It sounds, then, as if Locke is saying in the same chapter first that ideas of reflection arise only when the mind actively attends to and thinks about its own operations (in other words only when the mind is active), and second that the mind in forming ideas of reflection is just as passive as it is receiving ideas of sensation. In both cases if
the appropriate cause is present the effect will follow. But perhaps Locke is not being as inconsistent here as it might seem. One way of interpreting what he says about the need for the mind to attend to and consider its own operations is that we must keep our channels of 'inner' perception open in order that we can have mental 'vision', in the same way that we must keep our eyes open if we are to be able to see the physical world. External objects cannot cause ideas in our minds if the causal chains are cut. If our eyes are closed we cannot see. Likewise if our mental vision is blocked we cannot perceive what is going on in our minds. In both cases there is a failure to register anything which would produce an idea. The first few pages of Book II, Chapter I seem to support this interpretation. When Locke introduces ideas of reflection he uses a perceptual model. He talks about the perception of the operations of our minds, on the analogy of an 'internal sense'. The source of these ideas (of reflection)

"though it be not Sense, as having nothing to do with external Objects; yet it is very like it, and might properly enough be call'd internal Sense." (HU.II.i.4)

External, material things (the objects of sensation) and the operations of our minds (the objects of reflection) are "the only Originals, from whence all our Ideas take their beginning". The causal model is suggested in the discussion of children and ideas of reflection. This shows that ideas of reflection are caused, but in the case of children, operations are too ephemeral to produce lasting effects.

"Because, though they [operations] pass there continually: yet like floating Visions, they make not deep impressions enough, to leave in the Mind clear distinct lasting Ideas..." (HU.II.i.8)

The parity of accounts of the two kinds of ideas is demonstrated by passages such as the following:

"Light, and Colours, are busie at hand everywhere, when the Eye is but open; Sounds, and some tangible Qualities fail not to sollicite their proper Senses, and force an entrance to the Mind..." (HU.II.i.6)

and

"unless he turn his Thoughts that way, and considers them attentively, he will no more have clear and distinct Ideas of all the Operations of his Mind, and all that may be observed therein, than he will have all the"
particular Ideas of any Landscape, or of the Parts and Motions of a Clock, who will not turn his Eyes to it, and with attention heed all the parts of it." (HU.II.i.7)

So far, then, it looks as if for Locke to think about the world is to have the world represented in the mind. And to have the world represented in the mind is to have an idea lodged in the mind as the causal outcome of one's senses being confronted by the world.

But what about the second of the two questions that were raised earlier? How does Locke deal with active thought processes - thinking, perhaps, as distinct from perceiving? After all, the causal theory belongs only to perceptions; and when Locke talks about ideas as representing the world, he may mean no more than a theory of perception. A theory which may be said to have limitations, but does not necessarily lay him open to the charge of omitting an essential aspect of representation - namely, the active aspect of agency. So let us leave the ideas of reflection, which are caused by "the perception of the operations" (HU.II.i.4), and turn to the operations themselves. These operations are the "powers" of the thinking substance. Here perhaps we shall find some active aspect of mind - in the way we put to work the ideas of sense and reflection which are causally lodged in the mind by perception.

Let us take, for example, the account of judgement and knowledge. Knowledge is the power of the mind to perceive "the connexion and agreement, or disagreement and repugnancy of our Ideas." (HU.II.xxii.5 and IV.i.2). Locke allows for the possibility of falsehood: for the mind to be mistaken or to have ideas which are false representations of the world. If the mind were entirely passive, if the model of causal chains and effects were the complete story about the mind, and if the mind had no control over its own processes, then surely he could not give any content to the notion of wrong judgement, of error or falsehood? On the causal model, provided that all the causal conditions for x to occur are fulfilled, then event x occurs. In Locke's model, the necessary conditions would be the proper functioning of the perceptual organs, standard physical conditions (such as a colour judged in normal light), presence of material substance etc. Provided that all these are fulfilled there is no possibility of error in the formation of simple ideas. The fulfillment of all the necessary and sufficient conditions always results in the same effect. Nevertheless Locke does give an account of error or falsity in which all the appropriate conditions are fulfilled, and yet an error can be made and a false idea formed. There are two
aspects to Locke's treatment of error, both of which suggest the possibility that activity might be incorporated into his epistemological framework. One is his account of the formation of complex ideas; and the other is his treatment of judgement and knowledge.

Only simple ideas arise as the effects of external objects. The mind "exerts several acts of its own" (HU.II.xii.1) to frame other ideas out of those simple ideas. It combines simple ideas into complexes, it sets two ideas together into a relation, and it abstracts from simple ideas to form general ideas. If we put together a number of simple ideas in a manner which does not conform to the pattern of qualities in their 'real existence' in a substance, then we have a false idea. 1

The other apparent opportunity for activity of mind is knowledge ("the perception of the connexion and agreement, or disagreement and repugnancy of any of our Ideas". HU.IV.i.2) and judgement ("whereby the Mind takes its Ideas to agree, or disagree" HU.IV.xiv.3). 2 Here, as in the case of the combination of simple ideas into a complex idea, the mind has the freedom to manipulate elements within the mind. Ideas are brought together and compared, and either their agreement or disagreement is clearly perceived (knowledge), or a judgement is made as to the presumed agreement or disagreement of ideas. So at this level, it seems, the mind genuinely acts.

It is certainly true that at this level Locke appears to want to break away from the sort of causal model he employed for ideas of sensation and reflection, where ideas are the end products of causal chains that begin in the external world. Here the mind itself seems to be acting with the freedom, for example, to make decisions about the agreement or disagreement of ideas. But what kind of activity is this? The definition of knowledge gives us a clue: "the perception of connexion and agreement or disagreement" between ideas. It seems that here, as elsewhere, all the weight of knowledge remains locked within the building blocks of ideas. The mind simply perceives, shuffles and perceives the result. What goes on here is not strictly thought; rather it is passive contemplation of that which contains thought. But as we saw in our examination of ideas themselves there is really no room for

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1. Actual falsehood and truth properly belong only to propositions, yet says Locke, "Ideas are often times termed true or false." (HU.II.xxxii.1)
2. Knowledge is distinguished from judgement thus: knowledge is that which is "certainly perceived"; judgement applies to cases which are not certain, but there is a 'presumed' agreement or disagreement between ideas. (HU.IV.xiv.4)
thought within these entities either. They are, as it were, representatives which have become lodged within the mind, further items which might provide objects of thought, in just the same way as the world itself provides objects of thought. But then the manipulation of these entities (in the formation of complex ideas, knowledge or judgement) does not allow the possibility of any such complex activity as thinking, since it seems to consist only in perceiving agreements or disagreements between perceptible elements. In this model of knowledge there is no interchange between the idea and 'activity' of the mind. The idea is a self-contained unit which is simply manipulated, whether into a complex idea or into knowledge or judgement. Thinking consists in arranging particular elements. It is the sort of activity which Sartre refers to when he describes the way in which many psychologists explain thinking as:

"A selective and organising activity which fishes for its images in the unconscious to arrange them and combine them according to circumstances: the thought stays strictly on the outside of the images it gathers together." (Sartre, 1948, p 110)

So again when we examine Locke's conception of the mind's acting in making judgements, where we thought we might find some evidence of thinking, as distinct from the contemplation of the products of causal chains, we come across much the same story as before.

In the following section I shall explore the consequences of this passive view of mind, with a more detailed focus on representation. We shall see that what is essentially lacking from Locke's account of representation is any notion of an agent - some individual who intends to represent or who understands something as a representation.

1.2 What is lacking in Locke's account

Before engaging more fully with Locke's account of representation let us consider some remarks about representation made by other writers. C.S. Peirce in his discussion of signs defines representation as follows:

"To stand for, that is to be in such a relation to another that for certain purposes it is treated by some mind as if it were that other. Thus a spokesman, deputy, attorney, agent, vicar, diagram, symptom, counter, description, concept, premiss, testimony, all represent something else in their several ways, to minds who consider them in that way." (Peirce, 1931-35, 2.272)
As we can see, two distinct senses of representation are implied in this statement. One of these uses of representation means to make something such as a picture, a sign, a diagram, etc. stand for something else, or the substitution of some object for some other object. Thus a portrait is a representation of a person, a piece of language, such as a description, is a representation of some state of affairs, a mask is a representation of some quality or state such as evil or horror, a green traffic light is a representation of the fact that the way ahead ought to be clear and traffic may proceed, and so on. The other use of representation in Peirce's statement concerns the notion of 'acting for', in the sense of one person speaking for or looking after the interests of another person or group of persons. For example, an individual appoints a lawyer as his representative in court; or a group of persons elects or appoints some individual to be their intermediary in negotiation or communication with some other group in diplomatic relations; or some group of persons elects some individual to represent their interests politically - in parliament or through a trade union. For the sake of convenience I shall refer to the former of these two senses as representation 1 and the latter as representation 2. Hanna Pitkin, who has traced the origins of these two senses of the concept, notes that representation 2 - the sense in which a person presents or represents the views and interests of other persons - is a relatively modern use of the concept (Pitkin, 1967, 1969). It did not emerge until the Middle Ages (the first sense had been known at least as far back as the Greeks), and it came into widespread use in the Civil War period in England, when representation became an important political concept - almost certainly a use that Locke would have been very much aware of.

If we look at the two senses that we have noted in the concept of representation, we can see that there is an important aspect to each of these two senses. This aspect, which comes out rather differently in each of the two senses, is the idea of agency. In representation 1 someone has to intend or apprehend the sign as 'standing for', and the item which does the representing can be said to represent something else only insofar as it is made to, and seen to, stand for something. It is not necessarily the case that the symbol or representative stands for something which is directly known, as for example in the mathematical case where we have a dummy variable, 'let x stand for ---', and we may not know what object or value should fill the gap. So here we can say we have some representation, where the item which is being represented is
not directly known. Nevertheless we do know something about the item which is being represented: we know what kind of thing it is, we know that the item which would fill the gap is, for example, a numerical value. Or if the variable stands in for some proper name or general name, we may know the logical category of the gap-filler. In other words, we know the domain of appropriate gap-fillers. More importantly, the representative value of the symbol or object lies in the fact that someone creates just that relationship - representation - between the object and its representative, by the act of letting or making one thing represent another.

In representation agency takes the form of the representative's acting for other persons. There is a double aspect to agency here: the intention of the individual or group who appoints the representative, and the conscious acceptance of the mission by the representative.

How do these two versions of the concept of representation - each of them essentially involving agency - bear on Locke's treatment of representation?

First we might ask if Locke makes use of the notion of representation, making or recognising one thing as standing for another. From what we have noted about his doctrine of ideas as representing things in the world (or of higher-order ideas, which are derived from simple ideas), it might well seem that Locke has something like representation in mind, especially as in the case of primary qualities at least Locke speaks of ideas as resembling their archetypes (those items in the external world which produce within us the ideas of primary qualities). It seems as if what we have here, then, is something like a picture or a portrait which resembles and represents that for which it stands.

However, representation does not for Locke necessarily mean resemblance, or imply the crude notion of a replica of some external or internal object. In fact he makes it quite clear in the extensive discussion of Book II, chapters viii and xxiii, that although ideas of primary qualities are resemblances, ideas of secondary qualities are not. Nevertheless all our simple ideas (of both primary and secondary qualities) can be signs of their archetypes in virtue of their causal relations with their archetypes. On the other hand, ideas of substances can never be more than inadequate representations for two reasons, one of them contingent, the other a matter of principle. The former is that
the mind can never hold before itself all the simple ideas that make up the complex. But even if the mind did as a matter of fact have the capacity to contemplate all the simple ideas simultaneously, the latter reason would still hold - the mind would not be able to represent a substance adequately because it could never get at the underlying substance which holds together all the qualities. However, in spite of this inadequacy of representation of substance, only with substances do we seem able to give content to the notion of resemblance, because in this case there is a patterning and structuring of qualities which reproduce the pattern in nature. So in the case of substances it seems easy to treat ideas as pictures, even though they are not perfect pictures because they do not contain all that is to be found in the archetype.

It is worth digressing briefly here to look at a possible response to my treatment of Locke up to this point. McRae (1965, pp. 177/8) claims that Locke himself did not maintain that all ideas are representative objects, because representation had to do with complex ideas which we form. And only in the case of ideas of substance is there any intention on our part that the ideas should represent beyond themselves. All other complex ideas:

"...being Archetypes of the Mind's own making, not intended to be copies of any thing, nor referred to the existence of any thing, as to their Originals, cannot want any conformity to real Knowledge. For that which is not designed to represent any thing, but it self, can never be capable of a wrong representation, nor mislead us from the true apprehension of any thing, by its dislikeness to it: and such, excepting those Substances, are all our complex Ideas." (HU.IV.iv.5)

Hence, according to McRae, Locke would say that the idea of a hippogriph does not represent anything at all, because as a fiction it is not intended to do so. While this may be true - that fictional complex ideas do not represent any existing substance, it does not seem to be equally true that only those complex ideas which we intend to represent are representative. In the section immediately before the one just quoted Locke talks about simple ideas as representative. As we saw earlier he says that simple ideas:

"...represent to us Things under those appearances which they are fitted to produce in us:..." (HU.IV.iv.4)

So here it appears that ideas which are both simple (not complex) and not intended as representative can represent. Furthermore in the final
chapter of the Essay Locke discussing Semiotike, the doctrine of signs, says that ideas are signs or representations of things that are not present to the understanding. And here he seems to mean not just complex ideas.

It might be true, therefore, to say that only complex ideas of substance are thought by Locke to be representative of objects, but not true to say that only these ideas are representative. Perhaps McRae assumes that simple ideas could not be representative, just because they are produced in us by external causes, quite independently of any willing or intention on the part of the passively receiving mind. But all this goes to show is the peculiarity of Locke's notion of representation, as I shall be arguing here. It does not show that Locke did not think of simple ideas as representative.

Clearly then Locke wants to distinguish between resemblance and representation, not all representations being resemblances. He does seem to think of most representations as being pictures or images, but not necessarily likenesses, not picture which resemble those items which they represent. For example, secondary qualities do not resemble what they represent. About secondary qualities, Locke says that our ideas of them cannot but be adequate because they are "nothing but the effects of certain powers in things" (HU.II.xxxi.2). And what he means by 'adequate' ideas are these which "perfectly represent those Archetypes, which the Mind supposes them taken from" (HU.II.xxxi.1). Ideas of secondary qualities, then, represent certain characteristics about the external object, even though they do not resemble them.

We noted above that there seem to be some grounds for supposing that Locke sees ideas as standing for the external world in much the same way as a portrait stands for a person, and this interpretation was supported by the notion of resemblance. But what happens to the notion of representation when resemblance is lacking? In the case of secondary qualities, representation seems to get a foothold only through causal connection. But is causal connection alone sufficient to yield the notion of representation?

It is interesting to notice that Berkeley evidently thought that something more than causal connection is needed in order to say that one thing represents another. Berkeley introduces God as the agent. God creates ideas as signs, God therefore makes the connection of letting something act as a sign, and God puts the ideas in our minds as signs of
other things. So Berkeley introduces the notion of agency into his account of representation by making God the agent who makes something represent another thing. In this case we might say that there is an act of representation, even where the human user of the sign does not himself create the signifier/signified link. But this does not solve all the problems, as we shall see later.

It seems obvious that causal connection alone is not a sufficient condition to allow us to say that we have representation. It lets in unwanted cases. Any effect could then be said to represent its cause. Consider the case that gives Peirce some problems - that of the bullet hole in the mould (2.304). Should it or should it not be regarded as a sign? The answer seems to be that the causal connection between the firing of the gun and the bullet hole exists irrespective of there being anyone who sees the bullet hole. But the bullet hole can be called a sign of the firing of the gun only if someone sees it or knows that the bullet hole is there and so interprets it. A bullet hole of which there were no human knowledge could hardly be a sign. Similarly a footprint in the sand may be a sign that a person recently passed by, or the 'warning cry' of the sulphur-crested cockatoo may be a flight-signal to the other birds. But these are only signs or signals because someone or some animal has had occasion to notice or to become conditioned to or to be innately 'programmed' to respond to the causal connection between the two events. The person or animal then responds to the signifier as if it stood for some other known item or event.

In this context we should be aware of an important distinction between the case of the footprint in the sand and the warning cry of the sentinel cockatoo. In the first case, the footprint in the sand, the sign is recognised as a sign by the human who observes it. In the second case, the cry of the cockatoo, the birds are responding to what, following the usage of writers in semiotics, I will call a signal. There is a causal connection between the cry and the flight response of the birds: the birds are conditioned to respond with flight behaviour. In other words, the cry causes the birds to fly away. However, in order to explain the behaviour of the birds we do not have to say, and I should not want to say, that the birds understand the cry as a sign of danger. They are simply conditioned to make this response to a certain stimulus. Should we describe this as a case of representation? It seems to me that we are justified in saying that the cry represents danger to the birds, even though they are not aware of the status of the cry as a sign or as a
representation. And our recognition of the cry as a sign is expressed in our description of the event with words like 'sentinel' cockatoo and 'warning' cry. So here we might say that we have an account of representation which involves no more than a causal account, involving no notion of agency. But to say that would be to overlook the difference between the birds' perspective and ours. We can say that representation takes place, because we have had occasion to notice the causal connection, to notice that the birds respond to the cry as if in the presence of actual danger, and so we are in a position to say that for the birds the cry represents danger. But not so the birds themselves. They do not (so far as we know) perceive the cry as a sign - there can be no concept of representation for them. So if there were no human observers the status of the causal connection between the bird call and the flight behaviour would be no different from the unobserved bullet hole. There would be a causal connection, but no representation. When we describe the warning cry as a representation of danger we do so from the perspective of human observers who supply the agency of making the cry a representation.

It appears then that we cannot say about any effect that it represents its cause, but only in those cases where the contiguity of cause and effect has been observed on some occasion and for that reason the effect is said to or made to stand for its cause. (Notice that I am not claiming that there must be a causal connection between every representative item and that which it represents. Obviously there are many cases where this is not so, such as the arbitrary selection of some sign or symbol to represent some object or state of affairs.) What are we to say then about a case where the causal connection is not only unobserved, but in principle unobservable, because the cause itself is in principle unperceivable? And this is precisely the case with Locke's doctrine of ideas as representing external objects: we have direct apprehension of our ideas but not of the powers which cause them. The relation between ideas and secondary qualities is a causal one only. Certain characteristics or 'powers' of external things cause us to have sensations such as colour, heat, hardness and so on. But we have no way of perceiving what it is that causes us to have the idea of, say, redness. Ideas of secondary qualities are not images or resemblances of the things they are said to represent, so we cannot, from our ideas, make any inferences about the nature of the 'powers' which cause our ideas, or even of the external objects to which the powers belong. All that we can
know is that there is something, we know not what, that causes us to have certain ideas, i.e. the 'powers' are defined only as being "in Things, to excite certain Sensations or Ideas in us". (HU.II.xxxi.2)

If we know nothing about the item which causes our idea beyond the fact that it causes the idea it seems hard to give any content to the notion that we can make some item stand for some other item. As Peirce points out, a representation presupposes acquaintance with what is represented:

"The Sign can only represent the Object and tell about it. It cannot furnish acquaintance without recognition of that Object; for that is what is meant in this volume by the Object of a sign; namely that with which it presupposes an acquaintance in order to convey some further information concerning it." (Peirce, 1967, 2.231)

If nothing is known about what is represented except that it is the cause of the sign or that which is represented, the notion of representation seems to be vacuous. 1

Is the position any different for ideas of primary qualities which are said to resemble those items that they represent as well as being caused by them? The vacuousness of representation in the case of secondary qualities seems to lie in the fact that the notion of agency or of making one thing stand for another is unable to gain a foothold when we don't know what it is that is being represented. But in the case of ideas of primary qualities which are images of the external items which they represent we might be able to avoid this problem. We might say that the notion of agency or intention can play a part in Locke's account on the following interpretation: the mind 'knows' that the immediate objects of its consciousness are ideas, knows also that in some cases these ideas resemble their causes. So in knowing something about our ideas we know something about their causes, i.e. the external world. The mind then can say to itself: I will let these ideas stand for the external world which I cannot know directly, but I know that it resembles my ideas, so my ideas are a resemblance, as it were, of the external world. In the same way we could say that a photograph is a resemblance of a person.

There are obvious problems about this interpretation. First there is the question of the coherence of the notion that ideas can resemble primary qualities which has been questioned by Berkeley (Principles, 9) and again by contemporary commentators (Jackson, 1968;

1. Notice that it is only the notion of representation which I claim is vacuous. I am not making any such claims about causation, when the cause is unknown.
Bennett, 1968). I shall not discuss that question here. But there are other problems surrounding the notion of resemblance, in particular the relationship between resemblance and representation. This question will arise again in later chapters; it would be useful, therefore, to deal with it now before moving on in our examination of Locke's account of representation.

1.3 Resemblance and representation

In the present context there are two separate but not unrelated questions that we need to deal with:

(1) The first concerns the matter of whether one item which resembles another item (as a photographic portrait may be said to resemble its sitter) can be said to represent that item. And this question is given point here by the implication of Locke's account that because ideas resemble primary qualities they act as representatives of them.

(2) The second is a more general question about the nature of resemblance. What does it mean to say that one thing resembles another? Is resemblance some 'natural' quality or relation, which holds between two (or more) items, independently of the observer? To put it another way, do we make an 'objective' judgement when we say that A resembles B?

The connection between these two questions is that in both cases we are talking about phenomena which are dependent on convention.

Let us look first at question (1). Resemblance is just one of many possible conventional phenomena which can be used in representation. But it is neither a sufficient nor a necessary condition for representation. For example, we can say that a photograph of a person represents a person, and we can make it do so by printing the photograph of some candidate for Prime Minister on an election poster. But, of course there are other ways that he might be represented, for example, by the name 'Whitlam' spray-painted on a wall the night before the election. We might, in fact, choose either one of these conventional phenomena – a resemblance or a name – to represent the candidate for Prime Minister. But whichever of these conventional phenomena we choose, the convention alone is not sufficient to establish the relation of representation. There must still be some individual who engages in some act of making or understanding the representative item as a representation. This may be done explicitly by holding up a photograph and saying something like:
"This is a photograph of our candidate"; or simply by the context in which the photograph is displayed, e.g. an election campaign when the identity of the man in the photograph is well-known. In the case of a name and of language in general a whole set of conventions about the referring quality of words is already presupposed (we shall return to this matter in the discussion of semiotic theories in Part II).

But the main point here is the one that Ayer has recognised in his discussion of Peirce's account of signs. Ayer takes the example of a pair of identical twins and a portrait of one of them:

"So far as mere resemblance goes, the twins are more like one another than the portrait is like either of them. If it is only in the case of the portrait that the existence of the likeness constitutes a sign, it is because it is only in this case that it is so interpreted. If the portrait is a portrait of only one of the twins, though it equally resembles both, it is because this is an instance in which another convention comes into play. In interpreting an image of this sort we have to consider not so much what it actually resembles as what it was intended to resemble by the person who produced it as a sign." (Ayer, 1968, pp 131-2.)

The existence of a resemblance or likeness alone, therefore, is not enough to set up any relation of representation or signification between two items. Two objects may be almost exact likenesses without there being any thought of one's referring to the other. And conversely the resemblance between say a picture and that which it represents need not be very close, as in the case of an 'abstract' portrait. To quote Ayer again:

"It is not the fidelity of an image to what it copies that turns it into a sign. What makes it a sign, if it is one, is that it comes under a convention in terms of which resemblance is treated as a method of representation." (Ayer, 1968, p 131)

Let us look now at the way in which convention is involved in the second of the two questions above. There is an initial and intuitive plausibility about the notion that there are 'natural' resemblances between things - for example, two replicas of the Madonna in the Sistine Chapel, or two Holdens off the same assembly line. Peirce makes use of this commonsense idea in his classification of signs. Icons are signs which represent in virtue of their similarity to their objects. But what does it mean to talk of similarity in this way?
Umberto Eco has discussed various aspects of 'similarity' in a critique of iconism in his Theory of Semiotics (Eco, 1976, pp 172-217). There are, for example, 'absolute duplicative replicas' which produce doubles and 'partial replicas' which are simply called replicas. A double possesses all the properties of another token (except, presumably, spatio-temporal position), e.g. two wooden cubes of a given size, matter, colour, weight, surface structure etc. Obviously an absolute duplicative replica (or double) is an ideal because of the practical difficulty of reconstructing a given object right down to its microscopic characteristics, but "there is a threshold fixed by common sense which recognizes that, when a maximum number of parametric features have been preserved, a replica will be accepted as another exemplar of the same class of objects." (Eco, 1976, p 180). In the case of a partial replica, on the other hand, the type dictates only the essential properties that its tokens must display in order to be judged good replicas, irrespective of any other characteristics they might posses.

What has been said about replicas implies that the token has some of the same properties as the type. But now we come back to the question of what it means to say that objects 'have the same properties'? And that question in turn brings us back to the earlier question of what it means to talk about similarity, likeness, resemblance etc. Let us look at these questions more closely now.

According to Morris (1946) a sign is iconic "to the extent to which it itself has the properties of its denotata." Morris goes on to suggest that:

"the portrait of a person is to a considerable extent iconic, but is not completely so since the canvas does not have the texture of the skin, or the capacities for speech and motion, which the person portrayed has. The motion picture is more iconic but again not completely so." (Morris, 1946, 1.7)

Iconicity is thus a matter of degree. The degree to which the icon is similar to the object it stands for? But take Eco's example of an advertisement for beer: an outstretched hand offering a glass of foaming beer, the glass covered with a thin layer of vapour, conveying a sensation of coldness.

"There is neither beer nor glass on the page, nor is there a damp and icy film. I feel certain visual stimuli, colors, spatial relationships, incidences of light and I co-ordinate them into a given perceptual structure. The same thing
happens when I look at an actual glass of beer; I connect together some stimuli coming from an as yet unstructured field and I produce a perceptum based on a previously acquired experience." (Eco, 1976, p 193)

It appears then that iconic signs do not possess the 'same' physical properties as their objects, but that they rely on the same perceptual structure or on the same system of relations. Take another example: the outline of a horse drawn on a sheet of paper by one continuous line. The sole physical property that the drawn horse possesses (one continuous black line) is just the property that the real horse does not possess. We might say, of course, that a horse seen in silhouette against the sky comes closer to the line drawing. And perhaps what we have is a kind of isomorphism. And so on.

A further example, taken by Eco from Gombrich illustrates the extent to which our experience is directed by cultural stipulations or conventions:

"Ernst Gombrich has emphasised the conventionality of imitative codes in his Art and Illusion (1956), where for example he explains what happened to Constable when he elaborated a new technique for portraying the presence of light in a landscape. Constable's painting Wivenhoe Park was inspired by a poetics of the scientific rendering of reality and to us seems decidedly 'photographic', with its detailed portrayal of trees, animals, water and the luminosity of a patch of field caught by the sun. And yet we know that when his works appeared for the first time no one felt that his technique of contrasting tones was some sort of imitation of the 'actual' effects of light, but rather a new way of coding our perception of light, and of transcribing it on to canvas." (Eco, 1976, p 204)

Gombrich also refers to two photographs of the same corner of Wivenhoe Park which indicate how little Constable's park has in common with that of the photograph. But Gombrich does not suggest that the photograph constitutes the parameter for judging the iconicity of the painting because:

"the black-and-white photograph only reproduces gradations of tone between a very narrow range of greys. Not one of these tones corresponds to what we call 'reality'. The scale depends largely on the photographer's choice in darkroom; given two photographs (reproduced by Gombrich), the one printed within a narrow scale of greys produces an effect of misty light while the other, where stronger contrasts were used, gives a different effect." (Eco, 1976, p 302, f 17)
As Eco points out, we succeed in understanding a given technical solution as the representation of a natural experience because there has been formed in us a codified system of expectations, which allow us to enter into the semantic world of the artist. And furthermore we usually fail to notice when this happens. An 'iconic' solution is often not conventional when it is first proposed (as with Constable's painting), but gradually becomes so as it becomes more familiar. So, for example, Villard de Honnecourt, the architect and artist of the thirteenth century, claimed to be copying a real lion and yet reproduced it according to the most obvious heraldic conventions of the time. And, as a result of Dürer's portrayal of a rhinoceros with scales and imbricated plates, this image remained constant for two centuries in texts by explorers and zoologists, all of whom had seen the animals and knew that they did not look like that.

Eco goes on to argue that similarity does not concern the relationship between the image and its object but that between the image and a previously culturalised content (e.g. the common graphic convention of the sun as a circle from which many short lines radiate). We shall not pursue his discussion any further for we have seen enough already to suggest that the apparently 'natural' and simple phenomenon of resemblance is far less straightforward than it appears at the commonsense level. A dog or a small child would give behavioural indications of seeing resemblance between a photograph and another piece of cardboard rather than between the photograph and the person photographed. Whatever it is that we see when we 'see a resemblance', that seeing is directed by various factors which may be summed up in the term 'convention'.

The examples given by Eco draw out many different dimensions into which the apparently simple phenomenon of 'resemblance' can be analysed, e.g. shared properties, similitude, isomorphism, analogy and so on. But as to which of these dimensions is the relevant one in any given situation - this is largely a matter of cultural stipulations that direct our experience. Thus there are many natural relations between things, for example, a circle and a square drawn on paper are both coloured black, let us say, are both plane figures, are both closed, though they differ in shape. Any of the first three features could be taken to be a criterion for resemblance which we could use as the basis of a classification. Thus we may say that the two figures resemble each other in being black or more generally in respect of colour, but from the logical point of view it is essential that this 'in respect of' clause is
made explicit because we cannot say that the figures as wholes resemble each other — only in respect of certain characteristics.

There are, therefore, two elements in the concept of a resemblance relation:

(a) the natural relation on which it is based;

and

(b) the convention which determines that relation to be a resemblance relation for a given purpose in a given context.

Thus the resemblance relation itself is conventional and yet is identifiable with a natural relation. And it is this fact which tempts some to draw the conclusion that resemblance is of itself a natural relation. This temptation is more likely in cases where the convention to take a natural relation as a resemblance relation is simply part of the general social and linguistic conventions which are presupposed and are not made explicit. In such cases we are likely to say that one thing resembles another without saying in what respect, since the respect is part of the general background; and then, it seems, the resemblance is itself natural. Logically, however, the expression 'a resembles b' is incomplete; resemblance is not a natural relation, though it is based on one. The convention which makes a natural relation into a resemblance relation can arise only from the intention of an active mind.

But to return now to the point at which this question of resemblance came up: is the existence of a resemblance between two items necessary or sufficient to establish a relation of representation? We can see now why resemblance is neither necessary nor sufficient. We can also see how convention is involved, both in the use of a resemblance relation to make some item a sign, and in the production of a resemblance relation itself. And those conventions involve activity on the part of some agent who must make (and not just passively 'see') the resemblance relation, and the representation relation, in accordance with those conventions. To make a resemblance relation is to select the respect(s) in which the one item resembles the other; it is not to discern a resemblance between the two items per se.

And to bring all this back to Locke: we considered the possibility that ideas of primary qualities might be said to represent primary qualities because the ideas resemble primary qualities. What has now become clear is that even if there were any natural relation between ideas and the powers which cause them on which resemblance could be based
(a puzzling notion, as Berkeley and others have noted), there would be no room in Locke's passive mind for the activity of making the resemblance and representation relations.

We need to return to one further point that was raised at the end of §1.2. This was Peirce's point that a representation presupposes acquaintance with what is represented (Peirce, 1967, 2.231). We asked whether this applies even when the sign is iconic, i.e. resembles its represented object. In the next section we shall return to this question in the light of what we have seen above.

1.4 Representation and apprehension of both relata

It was suggested (in §1.2) that it may not be important that Locke's external world is not itself perceived as long as it can be identified as that which resembles my ideas. But now we can see that here just as in every other case we cannot make the relation of representation unless we perceive both relata. Because unless we perceive both relata we cannot say in what respect they resemble each other. (In fact, as we shall see in §4.4, representation is not properly described as a two-term relation. It is rather a three-term relation of representative item, represented item and some individual(s) in virtue of whom the representation exists.) So the fact that ideas of primary qualities resemble their causes doesn't help. In the case of primary qualities, just as with secondary qualities, the notion of what is being represented remains vacuous.

But there is yet one more way in which it might appear that representation can be established without knowing the item which is represented. What about the sort of mathematical case that we considered earlier - where we had a dummy variable standing for an unknown value? In the light of what we have just seen, can this case still be described as representation? Our intuitions tell us it can because we do talk about the dummy variable as representing an unknown value. And our intuitions are, I think, justified because there is a difference between this mathematical case, and the case we have just been considering. That difference lies in the fact that, as we saw before, there is quite a lot that we know about the item that is represented by the dummy variable. We know what kind of item it is.

It seems then that if we are to talk intelligibly about representation, and the agency involved in making one thing stand for
another, we need to know something about both the representative item and the item which is being represented. We also need to apprehend the relation of representation, which means that we must make or interpret something as a representative. But is this the only way in which representation can occur? In the case that we considered earlier - that of the 'sentinel' cockatoo's warning cry, it looked as if we were able to say that a signal (that is a signifier which is not wittingly used as a signifier) can count as a form of representation as long as there is some observer to notice the causal relation, and interpret something as representative of something else. In that case it might be argued that Locke's account of representation can be saved if we put God into the same position vis-à-vis humans, as we are vis-à-vis the cockatoos. We might say that God is in a position to interpret our response to the causal connection between ideas and external objects as representation, just as we interpret the cockatoos' response to the warning cry as representation.

But this won't do, because Locke's account does not treat ideas as signals. The account that is given of signal use, where the user does not have to be aware that it is using a signifier and is thus involved in an act of representation, simply won't bear the weight that it must in order to accommodate Locke's account of representation. On Locke's account it is essential that we use ideas as signs or symbols, not just as signals. And surely Locke is right not to want to interpret signifiers as mere signals. It would be impossible to give an intelligible account of ideas if they were treated as signals to which we blindly respond. An important distinguishing characteristic of signs and symbols, in contrast to signals, is that the user of the signifier recognises it as a signifier. For example, the behaviour of the cockatoo in response to the warning cry is stereotypic and rigid. Just because it does not apprehend the cry as an indication of danger it cannot look around to find out if the danger is so extreme that it needs to fly away. It just does fly. Contrast this with the situation where we read the word 'fire!'. We know this is a signifier of fire danger, but we normally don't respond with flight. The situation might be different, however, if I were driving through the bush and someone ran out on to the road ahead of me holding up a board with the word 'FIRE' written on it, especially if ahead of me I could see smoke pouring out of the trees. In other words, sign users recognise signs as signs and they are able to respond appropriately. Bearing this distinction in mind, it does not seem possible to make sense of ideas as representing
the external world if ideas are treated as signals, even if we put God in the position of observer.

Suppose that we bring God into the account in a slightly different way? We might say that we have no direct knowledge of the outside world, but we know that God has put ideas into our minds and we trust him that these are representations of the external world. But then what do we mean by representation? Unless we can see the position from God's perspective (in which case we do not need God) it is hard to know what it is that we are accepting, when we accept that our ideas are representative of the world. Representative in what respect? We have already seen the problems that arise out of the notion of resemblance. And what other content can we give to representation? It seems that all this amounts to in saying that God knows that what we see is representative of the world, and God also knows what he means by 'representative'.

It appears then that representation cannot be accommodated within Locke's account. This seemed at first to be an obvious sense in which the concept of representation might have been used by Locke, because of the image or picturelike quality of ideas. Now that we have found that on closer inspection we can't make this sense fit, it is time to turn to the second sense of representation - the notion of political representation. Locke's ascription of 'powers' to objects in the external world might seem to imply that he thought of objects as causing ideas to represent them in the mind in much the same way as an electorate can cause someone to represent it in parliament. It might be thought, therefore, that something like this model might have been at the back of Locke's mind. It comes to light in the following way.

Representation may be interpreted as a causal chain. One individual or group of individuals causes another individual to act in a particular way. Information and messages are transmitted from A to B simply as a result of different persons acting on each other. In this kind of representation no one has to stand outside of the act of representation and to interpret one thing as standing for another. Representation is internal to the whole process. It is internal to the process because the individuals who participate in the process are the agents who intend and knowingly carry out the representation.

In some respects Locke's model of the causal sequence of beginning in the external world and progressing via sensations, ideas and operations towards knowledge, can be seen as analogous to the model of
persons acting upon each other to cause messages and commands to be transmitted. In particular, we might find something like this model in the notion of self-consciousness, where the mind knows itself not as a substance, but rather as the effects of the substance. It's as if the self causes itself to be known to the self by representing itself to itself by its ideas. Ideas, then, carry 'meanings' in the same sense as persons can carry messages. In Locke's account of ideas and operations acting upon one another in causal chains we noticed that ideas seemed to take on an existence of their own—containing thoughts independently of the thinking mind. When ideas begin to take on this independent existence they may be seen as becoming analogous to persons who can cause one another to act as their representatives. On this sort of model we can see how representation might be transmitted along causal chains of ideas. If the thought is encapsulated within the idea, independently of any act of thinking, it begins to seem as if the role of the thinker or the person as agent becomes superfluous. Ideas take on an existence of their own and have the power to act on each other in the transmission of thought or knowledge, in a manner analogous to the human causal chains of political representation.

If this is the case, then, there would be no need for representation to play a part in the representativeness of ideas. It would not be necessary for the thinking agent who represents the external world by ideas, to make or interpret this idea as standing for that object, any more than we need an observer to stand outside the process of political representation and make anything stand for something else. As we saw before representation is internal to the process of political representation because it is carried out by persons who themselves intend and interpret the process as representation. And this is just where the analogy breaks down—the analogy, that is, between the elements involved in political representation, and the elements involved in the causal chains of ideas. In the former case the elements are conscious beings who can be described as agents. While in the latter case the elements are ideas which however they are interpreted cannot be thought of as conscious agents.

It seems then that although in Locke's causal chains of ideas there are some suggestions of an analogy with the human causal chains involved in political representation, the analogy will not support representation in its second sense. Here, also, the notion of agency that seems to be essential to representation is missing.
What I have tried to show here is that in his account of the representativeness of ideas, Locke overlooks an important aspect of representation. We might ask why it is that this oversight occurred. Perhaps it can be explained by the fact that Locke's metaphors and analogies simply obscured the fact that agency had been left out of the story. Like many others who discuss the philosophy of mind he seems to have been misled by his own metaphors. If we talk long enough about mind in the language of metaphor — metaphors of containers and contents — we begin to attribute to mental items the characteristics of spatio-temporal objects. The characteristics which Locke attributed to his ideas seemed to include the capacity to carry 'messages' (like the transmission of a 'message' via the firing of neurones, a postman with a letter), or the capacity to be agents who can make representations. In various parts of his account there are hints of two different senses of representation, both of which contain a (different) notion of agency. It is only on closer inspection that we find that neither sense of representation can be made to fit Locke's story.

1.5 Locke's account of mind and representation seen in the context of the Descartes/Aquinas tradition

In this discussion of an inadequacy in Locke's account I have tried to bring to light two important aspects of representation.

(1) I have focused on the extreme passivity of Locke's philosophy of mind — a model of mind as a container of contents which are simply inspected.

(2) I have drawn attention to Locke's omission of any agent who can create the relation of representation; and this omission, as we saw, led to a curiously unsatisfactory account of representation.

In the succeeding chapters we shall continue to explore these two aspects of representation, and we shall see that there is an intrinsic connection between (1) and (2).

In the next two chapters we shall be concerned with active/passive dimensions of mind. We shall see, for example, that Locke's extreme passivity is the outcome of a tradition which contains the seeds of both activity and passivity. We can find that tradition by going back to Locke's predecessors, Descartes and Aquinas. Locke's account can be seen as derivative from Descartes, in whose philosophy of mind there is
a good deal of ambivalence between an active and a passive account of ideas. Not surprisingly this ambivalence led to various interpretations of the significance of 'ideas', as McRae (1965) has noticed in commenting on three main conceptions of 'idea' in the seventeenth century, viz. as an object, as an act, and as a disposition. Descartes' ambivalence may in turn be partly explained by looking at the scholastic tradition that Descartes reacted against, but was nevertheless influenced by. The scholastic tradition of Descartes' time (and Locke's) owed a good deal to the philosophy of Aquinas, even though as Geach points out scholasticism took a decadent turn among Aquinas' successors (Geach, 1957, pp 19/20). In Aquinas' philosophy of mind we can find two quite distinct threads, the one active the other passive. Aquinas himself did not confuse these two aspects (even though his distinctions were blurred by his successors). For Aquinas the active and passive dimensions of the soul had different functions. Many of the apparently puzzling inconsistencies and weaknesses of Locke's account can be better understood if they are seen as a re-write of Aquinas' story: a re-write in which the central doctrine of hylemorphism had been abandoned and replaced with a new 'scientific' doctrine. Almost all the elements of Aquinas' account can be found in Locke, but, for the reasons given above, they come out in a strangely garbled form. The "phantasms, notions (or concepts) and species" which Locke's word 'idea' stands for, are also the main elements in Aquinas' account of the mind and knowledge, but they are treated very differently by him.

We shall turn to Aquinas' account of mind in Chapter 2. Aquinas' account stresses the activity of mind and offers the promise of a more adequate theory of representation.
CHAPTER TWO

AQUINAS: THE MIND WHICH ACTIVELY REPRESENTS

2.0 Introduction

Locke's account of representation is plainly inadequate, since there is nothing to explain how the representation comes about, except perhaps causation, and that is too weak a condition to provide for representation. Locke fails to account for what it is for the mind to grasp the reference or the sense of an articulated sign (not necessarily a linguistic sign). Aquinas, on the other hand, recognises that it is not enough just to say that there are objects in the mind which somehow come to represent objects in the world; instead he sees representation as what we should now call an Intentional act.

The reverse chronology that we are following highlights an additional point of interest. It enables us to trace back the threads of the later less adequate models to the earlier more adequate ones; and, in looking at the difference between them, we can gain insight into what must be the case in order that we can give an account of representation. 1

2.1 Aquinas' two modes of representation

Representation, or representative thought, plays an important role in Aquinas' account of how the human mind comes to know and understand the world. He makes use of two kinds or means of representation. One of these kinds, the phantasms (phantasmata) of the imagination, can readily be seen as an influence on Locke's (passive) account of ideas. Phantasms act as a kind of surrogate for material objects: they are produced in the imagination (which for Aquinas is a faculty separate and distinct from intellect) as a direct result of the causal influence.

1. It is outside the scope of our concerns here to discuss the reasons for the gradual deterioration of models from Aquinas to Locke: Perhaps it might be speculatively suggested that with Descartes and even more with Locke there was a movement away from Aquinas and a rejection of what were seen as excesses of scholastic metaphysics to what could be known 'scientifically', and that this led to the inadvertent abandonment of some essential feature of the activity of mind. It is interesting to notice, however, that the deterioration which is claimed here is accompanied historically by the loss of the embryonic concept of Intentionality - at least until Brentano, who revived Aquinas' insight and extended it.
of objects in the world. Aquinas talks about the phantasm as a non-material replica of the external object, which it resembles. A rough and ready way of interpreting phantasms might be as sense data or sensory experience or perhaps as sensory or mental images. This way of interpreting them would make sense in a modern framework, and as we have noticed, this sort of interpretation would be compatible with Locke's attempts at a 'scientific' account. This move also seems acceptable if we want to get away from Aquinas' hylemorphic framework of substance, form and matter. But it would be misleading if we did not note that the need for phantasms in Aquinas' account is closely related to hylemorphic constraints.

Aquinas, like the Greeks, subscribed to the doctrine that to know a thing is to know its form, and that the instrument of that knowledge is the intellect. As far as Plato was concerned this was achieved when the intellect apprehended the pure forms themselves, uncontaminated by matter, and thus fit objects of understanding. But according to Aristotle there are no forms in nature which are independent of matter, and forms when instantiated in matter are not actually intelligible. Aquinas shares Aristotle's view on this point and is therefore faced with the same problem as Aristotle: how does the intellect gain knowledge from matter? His answer is that matter, though not intelligible, can be sensed by the sensitive part of the soul, viz. the imagination (Thomas Aquinas, 1958, la, 84, 4 and 6). The phantasm then is a composite representation of what has been sensed by several senses and is a means by which the forms become intelligible.

So far this account has a strong resemblance to Locke's account of ideas as the product of external causes acting on the mind, but on Locke's account this causal process simply continues at various levels, second-order ideas (of reflection etc) being built up on the foundation of simple ideas. And this led us to ask the question: how could these ideas be representative, since there was no agent (mind or person) to make the representation relation, and in any case one of the relata could not be known independently of the other. The notion of one thing being made to stand for another became vacuous when nothing whatever was apprehended, about the represented item, independently of the representative item. It might be claimed here that this criticism could be made equally of Aquinas, since as we have already noted Aquinas believed that there were problems about the apprehension of forms when they are associated with matter. So Aquinas, like Locke, tries to
represent some external reality which is in principle unknowable, and the notion of representation is equally vacuous. But there is an important difference in these two positions, namely, that phantasms individuate those same forms which are present in the external object. It is just that intelligible natures are not proper objects of the senses, any more than sensible things are proper objects of the intellect. So while the senses are turned to their proper object, the intellect is directed towards its proper object, the intelligible form. It is not true to say, therefore, that the phantasm (like a Lockean idea) stands for something, we know not what, since the phantasm is an individuation of some form or other and that form is apprehended by the intellect without the need of any intermediary.

But at this point Aquinas's account diverges sharply from Locke's, and this is where we are introduced to Aquinas' second and active form of representation. Most of the work of representative thought in Aquinas' account is borne by the 'intelligent' part of the soul, the intellect (in contrast to the imagination which is concerned with what can be sensed rather than known). The intellect's characteristic mode of apprehension is the knowing and understanding of that which is immaterial and intelligible. What we noticed about Locke's account was that since it was entirely passive there seemed to be no room for any thought or understanding. This inadequacy is shown more clearly now when we look at the role of the intellect in Aquinas' account.

Aquinas' account allows just that role of active thought which we noticed was lacking in Locke. Strictly speaking Aquinas' intellect expresses itself through two faculties, or rather through one faculty with two powers (Thomas Aquinas, 1970, la, 79, 4 ad 4). Those powers are the agent intellect (intellectus agens) and the receptive intellect (intellectus possibilis). In order that the form of a thing may be made actually intelligible, the agent intellect must act on the phantasms in order to abstract the species, the second form of representation. 'Species' is the Latin equivalent of the Greek 'eidos', which can be understood as idea or as Platonic form, and it has some of the connotations of both 'idea' and 'form'.

The agent intellect provides the means by which sensory and particular input can be translated into general and conceptual knowledge, and the species is the intellect's vehicle of representation. The agent intellect acts on the phantasm, abstracts its 'whatness' and impresses it on to the receptive intellect as the species impressa. We should
notice some interesting features of this process of abstraction ('abstractio', 'abstrahere', la. 85, 1). As Geach warns, we must be careful with our interpretation of this term, 'abstracting' or 'the abstracting power of the intellect'. We must avoid attributing what Geach calls the doctrine of 'abstractionism' to Aquinas. This is the doctrine that a concept of a sensible thing is acquired:

"by a process of singling out in attention some one feature given in direct experience - abstracting it - and ignoring the other features simultaneously given - abstracting from them." (Geach, 1957, p 18)

Geach draws attention to the incoherence of this view. How, for example, could we form 'proper' concepts of kinds of substance, like gold and water, or of substance as such, since we can find no discriminable feature of our sense-experience answering to the word substance? (Aquinas must also have been aware of Plato's arguments in the Phaedo against the doctrine that concepts can be acquired inductively from their instances.) This incoherent view, which is nevertheless still to be found in many developmental accounts of learning, was certainly popularised by Locke, if not actually introduced by him into the British Empiricist tradition. So here again we find an interesting contrast between the passivity of Locke's account of mind - the mind simply noting and piling up like instances of some feature - and the activity which is essentially involved in Aquinas' account, where the mind must carry out some operation as an intrinsic part of the process of abstraction.

Aquinas accepts Aristotle's metaphor of the intellectus agent as a light that enables the mind's eye to see the intelligible natures of material things, as the bodily eye sees colours. But he makes it clear that the relationship between light and object is an interactive one: that the light does not simply reveal colours that existed in the dark, it actually generates the colours (la. 85, 2). (Later we shall see how Aquinas cashes this light metaphor in his account of the interaction of agent and receptive intellects in the use of species.)

There is another important distinction between abstractionism and the Thomist account of concept formation. According to the former, the mind spotlights, as it were, just one sensible feature from among many, e.g. colour from shape, size, etc. A concept somehow results from the piling up of instances of like sensible features. But according to Aquinas what the agent intellect apprehends is something which differs
in category from sensible features: namely the intelligible nature of a thing, its 'whatness' (quidditas), the categorisation by which we order our experience. And, as Plato recognised, the categorisation by which we order our experience cannot be derived from experience since some categorisations is presupposed in experiencing something as a φ. The agent intellect grasps that which can be known or understood only by an act of intellect, not by empirical observation, as for example our understanding of 'not both p and not-p' cannot be determined by empirical evidence.

To return now to the species and their role in representation, we should notice that although the species is described by Aquinas as a 'likeness' (similitudo) or 'representation' of something which exists in the world, it is not a resemblance in the way that a phantasm is a resemblance of an object in the world. It cannot be that because what is represented is a universal, without any individuating characteristics. For example, flesh and bone may be represented, but not any particular flesh and bone. Aquinas clearly states that only the specific nature of a thing is represented (1a. 85, 1 ad 3). He also says that the species is not an object in the mind. He says rather that it is the means of understanding. And he criticises the doctrine of 'representationalism' - theory he attributed to the pre-Socratics and perhaps Plato - that the objects of our knowledge are ideas impressed on the mind of the knower (1a. 85, 2).

We shall return in a moment to a fuller discussion of the role of the species in representation, but first let us look at the 'second act' of the intellect - the process to full understanding. The intellect arrives at full understanding by 'combining and separating' (1a. 85, 5 ad 1), i.e. making affirmative and negative judgements on the basis of comparisons and contrasts between species which are successively abstracted. Finally a definition or judgement is made verbally or explicitly. This is the process of rational deliberation that the human intellect must go through in order to attain full understanding (or as close as the human intellect can come to full understanding) (1a. 85, 5). This, then, is the manner in which the intellect acts on the species which it has abstracted: it compares the species with other species. But the intellect can know or think about only one species at a time, and this surely raises a problem for the comparison of the species? How can two species be compared if only one can be known at once? Aquinas meets this difficulty by saying that the intellect can indeed know
several things at once, but not as several; rather, as one - that is, by means of one species. For example, the species of stones and mortar can be known under the one superordinate species of a house, and the species of man and horse can be compared under the species of animal. The intellect reaches understanding of a thing, not by considering it in isolation, but by making successive abstractions, progressing from the more general to the less general, until the understanding of the thing has been filled in with more and more detail. And finally the intellect is in a position to make a judgement which may be true or false.

There is much which is of interest in the contrast between the kind of representation implied by the phantasms (passive products of external reality, and certainly Locke believed something like this to be sufficient for representation) and the kind of representation implied by the species (an act of thought). According to Aquinas, however, phantasms alone could do nothing for thought as we know it in humans. At best they could produce the kind of thinking of which non-primates are capable - unreflective and unrepresentational. Aquinas allows the faculties of memory and imagination (the locus of the phantasms) to dumb animals. But only humans have the power of the intellect. And it is this power, with its use of the species, which is required to make the phantasms part of representative thought in the full sense. The need for this interaction between species and phantasms or, to put it another way, intellect and imagination (or memory) comes out very clearly in a problem raised by Anthony Kenny in his essay on 'Intelect and Imagination in Aquinas' (Kenny, 1973). In this essay, Kenny discusses the exercise of concepts and the role played by the phantasms.

Aquinas recognised a difference between possessing 'stored knowledge' of a thing, and actually knowing a thing. The initial act of knowing involves the impression of the species on to the receptive intellect, and even when this same thing is not being actively known, the species remain in the intellect:

"Species stored up in the possible intellect remain there in a habitual way when the intellect is not actually understanding."

But, says Aquinas:

"In order for us actually to understand, a mere storing of species is not sufficient; we must also use them." (la. 84, 7 ad 1)
A species according to Aquinas is an abstract representation of a universal, but it is something more than a static representation acquired and then stored in the intellect. Once some concept has been acquired—for example, the concept of triangularity—the possibility is there for it to be brought back again actively into operation by the exercise of the intellect, just because the species is stored (in contrast to phantasms in the imagination, which come and go). But it appears that Aquinas also maintained that stored species remain as only potential knowledge. In themselves they are inert, or at best specifications which can be brought into use for another act of understanding. So, in a sense, stored species are useless unless they are exercised. Aquinas also believed that phantasms were essential (as presentations of the material world) not only for the acquisition of concepts but also for the exercise of concepts.

At this point it may be necessary to pause a moment to clear up what might seem like a confusion between species and concepts. Aquinas refers to several kinds of species, and these different kinds can be interpreted as different senses of concept (and also perhaps, as Kenny suggests, as belief). Again as Kenny points out, in contemporary philosophy 'concept' has two contrasting uses. One is the Wittgensteinian sense of acquiring a concept, i.e. possessing a certain skill, for instance, mastering the use of a word. The other sense is the Fregean one of a concept as the reference of a predicate, or as something like an Aristotelian universal, or as a way of classifying the data of the material world. Roughly this same distinction can be found in Aquinas' treatment of species. The species which is first impressed on to the receptive intellect (species impressa) resembles a Fregean concept, something which can be expressed and stored as a predicate. But, as a result of interaction between agent and receptive intellects and phantasmata, another kind of species comes to light, the species expressa (or verbum mentis) which is what Copleston describes as "the universal concept in the full sense", and is associated with what Aquinas calls "actually understanding" (Copleston, 1966, p 390).

The species which is stored, then, might be likened to the reference of a predicate or to an Aristotelian form, some objective means by which we can order our understanding of the world. But this in itself, according to Aquinas, is only potential knowledge. In order that we can reach full understanding these species must be used in conjunction with the phantasms, as Aquinas makes clear in the following two passages:
"Thus, in order for us actually to understand, a mere storing of species is not sufficient; we must also use them, and indeed in accord with the things of which they are species, which are natures existing in particulars." (la. 84, 7 ad 1)  

A little earlier, in reply to the same question, he says:  

"It is impossible for our intellect, in its present state of being joined to a body capable of receiving impressions, actually to understand anything without turning to sense images." (la. 84, 7) 

There seems to be a problem here about what role phantasms play in the use of species. This is the problem which Kenny discusses in relation to the exercise of concepts.

Aquinas illustrates his statement about the need for phantasms in the use of species by claiming that when we try to understand something we summon up images by way of examples, and that similarly when we try to make someone else understand something we suggest examples in order to help that person to form images. But, as Kenny points out, it does not seem to be true that whenever we exercise a concept there has to be some kind of mental illustration going on. (Kenny translates 'species' as 'concept' in this context.) Kenny also objects that Aquinas’ example is associated more with the acquisition of a concept than with its exercise. On the other hand, says Kenny, when we exercise concepts there must surely be some exercise of sense memory or imagination which ties the concept to a sensory context, otherwise it is difficult to see how there can be any exercise of concepts. To use Kenny’s example, for a person to be exercising the concept of red he must be in a position where he is making sensory discriminations, or applying the word 'red', or something of the kind. He may be able to possess the concept red without this showing in his experience or in his behaviour, but "without some vehicle of sensory activity there could be no exercise of the concept on that occasion." (Kenny, 1973, p 77).

Kenny claims that the nature of Aquinas' arguments for his thesis about the necessity of phantasms in the use of species makes it

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1. P.T. Durbin in the Blackfriars edition of the Summa, translates the second occurrence of 'species' in this passage as 'images', but, as I have already indicated, Aquinas makes a clear distinction between representation in the imagination and representation in the 'intellect'. It seems misleading, therefore, to translate 'species' as 'images' in this context.
doubtful that he understood it in the above sense of the exercise of concepts in a sensory context. Certainly there is no explicit indication that Aquinas held this view. But let us reconsider the nature and role of the species of the intellect and the phantasms of the imagination, and I think we shall see that as a consequence of the functions assigned to the species and the phantasms it follows both that:

(i) To use the species must be to do something like engaging in the sort of concept-exercising activity which Kenny describes;

and that:

(ii) Within the hylemorphic constraints of Aquinas' metaphysics, phantasms are necessary for every exercise of every concept.

The crucial step in seeing that (i) and (ii) are consequences of the functions of species and phantasms is to understand fully the manner in which the species represent.

Kenny notes Aquinas' description of the receptive intellect as the locus of the species (Ia. 79, 6 ad 1) and translates this description by the metaphor, "the storehouse of ideas". From this Kenny goes on to say:

"The intellectus possibilis of a man may be thought of as the collection of concepts and beliefs that he possesses: it is his mind in the sense in which we speak of the contents of a mind." (Kenny, 1973, p 67)

Perhaps. But in another sense these metaphors are misleading. The metaphor of the mind as a container of contents belongs to a conceptual framework which is very different from that of Aquinas. 'Contents' of a mind are also thought of as being presented for review or inspection; and, on this view, concepts and beliefs are mental entities, or inner replicas of external bits of reality. They are objects in the mind, like Lockean ideas. In the epistemological context of minds which have contents, these contents are also thought of as being self-contained and self-sufficient: there is no more to mind than its contents, and the capacity to inspect them. To know or to understand or to think a thought or to judge something as true is no more than to have the appropriate concept, belief, judgement etc. already in one's storehouse available for inspection or to put it into the storehouse at that moment.

But all of this is very far from what Aquinas means by his description of the mind as a locus of the species. It is true that
species are described as representations (repraesentativa), and some-
times as likenesses (similitudo), but they are not replicas or resembl-
ances in the sense in which Hume thought of ideas as being faint images
of impressions. And Aquinas explicitly rules out, as we saw earlier,
that the species represent in the same way as the phantasms represent,
when he says that a species is a 'likeness' only with respect to the
specific nature (naturam speciei).

If the thing that is represented is shorn of all individuating
conditions it could hardly be anything like a resemblance, even a faint-
one. (Perhaps Aquinas misleads here by allowing himself the use of the
notion of likeness.) Aquinas also states that species are not in
themselves knowledge or understanding: they are the means by which the
intellect understands (Ia. 85, 2). By means of the species, therefore,
the mind knows about any given phenomenon what kind of thing it is —
grasps its 'whatness'.

As we saw earlier, there are two ways of understanding concepts,
and if we restrict our use to the Fregean sense, then we might interpret
Kenny's phrase 'the contents of a mind' as meaning that someone has at
her disposal the means of applying certain predicates. A contemporary
way of expressing this sort of capacity (that which is given to mind by
the species) might be to say that it is the ability to sort our
experience according to the structural constraints of rule systems or
conventions. Or we might put it another way and say that if we possess
this capacity, we know what sort of term to apply to some phenomenon,
for example, a general term, a proper name, a mass term or a count noun,
and so on. Of course it would be to go beyond Aquinas to attribute such
an interpretation to him, since the notion of rules and conventions
presupposes a conceptual framework — a theory about language and inter-
person communication — which was not available to the scholastics.

But what Aquinas has in mind when he talks about the stored
species as likenesses is probably closer in spirit to contemporary
concepts than it is to the epistemology of ideas as contents of the mind.
And some additional support for this interpretation may be found in what
Aquinas says about the second act of the mind.

We noticed earlier that the intellect arrives at full under-
standing when it has combined and separated the species, under super-
ordinate species, and finally expresses the result of this process in the
form of a definition or a proposition, which is then affirmed or denied
as a true or false understanding of the empirical world.

The whole of the discussion in Question 85 on how the intellect understands the empirical world clearly indicates that the species operate as 'markers' in a classification system under which we order our sensory experience of the world (mediated by the phantasms). The first act of the mind gives us only the 'whatness' of a thing, and tells us under what species it must be considered; but then a comparison must be made in order that we can arrive at further classifications and, hence, understanding - or, as close as the human mind can approach to full understanding.

Of course, there is an important theoretical difference between this sort of classification system (taken over from Aristotle) and the contemporary notion of a linguistic system. Aquinas did not think that the species were 'constructed' by the intellect - they were firmly based in the material world from whence the intellect extricates them. Some at least of contemporary philosophers of language, on the other hand, think of the categories of a linguistic system as a conventional grid imposed on our experience, according to the needs and interests of a community of people (Harrison, 1977a).

The importance of understanding that the species are not representations in the same way as the phantasms are representations of objects is that this distinction shows us why, as Aquinas says, the species must be used, and why that use must be understood in something like the sense of exercising a concept, in Kenny's sense.

If the stored species were really like the ideas of the empiricist theories there would be no clearly apparent reason why they must be used or exercised. If they were replicas of reality it would be hard to see in what sense they could be used, except in the rather obvious sense of being inspected - when I think about a horse I summon up the appropriate concept from its store and inspect it - but that is hardly use.

If, on the other hand, species are not replicas of reality, but specifications or rules or conventions which tell us how reality is to be understood, then they must be used in order that we do understand. But to say this - that the conventions must be used in understanding reality - is not to say that the conventions themselves, held in storage, are understanding, or can through inspection alone provide understanding. An analogy may help here. Rules tell us how to play the game, but merely to
possess the act of rules, or to bring the rules out from time to time, is not to play the game. Playing the game is the activity of making this move or that stroke, in accordance with a set of rules. Similarly, Aquinas says about the agent intelligence that it understands by means of the species: that it knows what category a thing belongs to by means of the specifications or rules laid down in the receptive intelligence. What the agent intelligence knows - the object of knowing - is not in the mind, but in the world, and when it uses the species it applies them to the empirical contexts of the world.

All of the above seems to add up to a picture not unlike Kenny's account of the exercise of the concept red. It is true that Aquinas does not explicitly fill out his cryptic statement (la. 84, 7 ad 1) with an account like Kenny's but, as I have tried to show, an analysis of the species seems to lead us to that conclusion.

If we grant (i) then (ii) must follow. The species cannot be used in any way without recourse to the phantasms, because the phantasms are surrogates for material objects and the species' only means of application to the external world. It might be objected here (and perhaps this is what Kenny has in mind when he seems to question the role of the phantasms in the exercise of concepts) that once the active intelligence has had access to the universal by means of the phantasm and has imprinted the species on to the receptive intellect, there is no further need for the phantasm in subsequent uses of the same concept.

But to make that objection would be to interpret the species as if they were objects of knowledge, or full concepts in themselves. Aquinas makes it clear that actual (i.e. conscious) understanding or knowledge comes about only with the articulation of the full concept as a definition or as a judgement; and every time that occurs - even when the species is already stored - there must be an act of the intellect which applies the species to a particular or particulars in the world, via their surrogate phantasms.

In the light of this understanding of the nature of representation by phantasms and species we can see why Aquinas does not need to offer introspective data to prove that phantasms are required for every exercise of every concept. It simply follows from his analysis of intellect and imagination. A possible explanation of the presence of the introspective data in Aquinas' account is that he merely offered it as an illustration of what had to be true, given his account.
2.2 Aquinas and Locke: activity and passivity

This analysis of the respective roles of phantasms and species has brought to light some of the ways in which Aquinas' philosophy of mind - allowing an intrinsic activity of intellect - yields a more adequate account of representation than Locke's. Here again, in summary, are some of the points that we have noticed - with some further implications.

In one way the phantasms have a marked affinity with Locke's complex ideas of sensation: they are produced in the soul as a result of sensory experience of the world. The mechanism is very much like Locke's mechanism for the production of ideas. The external world is the efficient cause of sense data which are then constructed into a unified sense image or phantasm. And the phantasm instantiates that very same form as does the object in the world which is represented by the phantasm. But this alone would not be enough for a representation of the world, on Aquinas' account. Unlike Locke's ideas which behave like 'capsules of thought', the phantasm alone can do nothing. Something else is needed to make it represent the world. Something of a different nature must be added to the phantasms in order to yield representation. This is because representation is intrinsically connected with thought, with the mental activity which is needed to make the representation hook on to the bit of reality it represents. But the phantasm, interpreted as either some sort of surrogate of the external world, or just as sensory experience, cannot be an act of thought. Representative thought comes about only by means of an interaction between species and phantasm. In addition to the phantasms, then, there have to be certain operations (e.g. classifications, comparison etc), carried out according to rules. But what is known when this operation has been carried out is still not something that can be fully expressed by some representation - some supposedly detachable content such as we shall consider in the next chapter. There is an important distinction between the mental activity which is implicit in Aquinas' account of the application of the species and the mere piling up of ideas which we find in Locke. The point being made by Aquinas here is, I think, similar to the point made by Kant in Section 3 of the First Edition version of the Transcendental Deduction:

"If, in counting, I forgot that the units, which now hover before me have been added to one another in succession, I should never know that a total is being produced through this successive addition of unit to unit, and so would remain ignorant of the
number. For the concept of number is nothing but the consciousness of this unity of synthesis." (Kant, 1963, p 134)

The point here is that my consciousness of counting is necessarily summative, and that its summative character cannot be contained in the mere apprehension of the separate units, one by one, but can only consist in the sequential application of a definite arithmetical operation (addition): that is, in the application of a certain procedure or mode of activity by the mind to the objects which, otherwise, would simply "never before the mind." 1

What is important for Kant and for Aquinas is that this activity is the thought. The activity is both the means or act of thought and what is known. What is known, what is finally affirmed (or denied) in some proposition is contained in the very activity of applying the rules and going through the operations. As Aquinas says, the rules (species) are learned or acquired through use, and once learned they are stored as species. But what is stored is only potential knowledge, or the means by which a fresh act of understanding can take place - by further use of species.

In this account of the intellect's form of representation - the species, which are likenesses or representations of the intelligible natures of things in the world - we can see once more that some act of intellect or thought is essentially required: without it there would not be any representation. The species, then, can be seen as an articulation of the procedure which must be gone through in our understanding of reality: there must be a procedure, an act of thought. And here again it is interesting to notice how Aquinas brings into his account different senses of species: one as the form, or the classifying system, or the set of rules which is impressed on to the receptive intellect, and by means of which we reach knowledge and understanding; and the other, the full concept, that which we reach in using the species and attaining understanding (Thomas Aquinas, 1968, p 168). The species, therefore, is both the means by which we reach understanding, and that understanding itself, thought of as an activity or skill (much as acquiring or exercising a concept in the Wittgensteinian sense is).

1. I owe this point to Bernard Harrison. Not surprisingly, in view of the influence of the Kantian tradition on the phenomenologists, we find the same sort of insight in much of their writing, for example in Husserl's and Merleau-Ponty's analyses of time, which are discussed in Chapter 7.
The purpose of comparing Aquinas with Locke was, by means of comparison of different levels of adequacy, to bring out certain important features of representation. Perhaps the most crucial of these was that representation has to be understood as an Intentional act; there has to be some mind which establishes the relation of representation, and that presupposes the activity of thought — the sort of activity for which there is simply no room in a 'passive' account of mind. We might sum it up in a slogan like 'no representation without activity'. It seems to be no accident, therefore, that on the continuum of adequacy from Locke to Aquinas we find that the more adequate the account, the greater the emphasis given to activity of mind. And on this continuum we find Descartes vacillating somewhere between Locke and Aquinas. Before turning to this point, let us make a final contrast between Aquinas and Locke, this time on the question of objects of thought, and in particular, the notion of the self and the representation of the self.

Here are some points of difference:

i. For Aquinas, representations (of the intellect), concepts and intellectual operations may become objects of thought but they are not essentially or necessarily objects of thought. For Locke, ideas have to be objects of thought or they are nothing at all. They are intrinsically objects of thought. As a corollary to the above, operations for Aquinas do not fit into an account of self-consciousness as objects of thought. For Locke, they do.

ii. For Aquinas, concepts or judgements cannot become objects of thought until there has been some mental activity, until the concept has become at least partly articulated. For Locke an idea can be introduced into the mind without any contribution from mind itself. It is only as a result of the mind's contemplation of the representation (i.e. the idea) that the mind knows what it is thinking about.

iii. For Aquinas, there is no representative entity which represents the self: it can be known only through its acts (see below). For Locke, ideas are the proper objects of knowledge. Since nothing is known except via some representative, the self also cannot be directly known: something must be found to represent the self to the self, namely its ideas and operations.
Let us look at these points in more detail.

i. For Aquinas the proper object of the human intellect is the external material world. The species, the intellect's means of representation, are not in the first instance objects of thought. They are used in application to the world. When the intellect gains understanding of a thing it does so by using the species in various operations (classifying, ordering, predicating etc). But the intellect does not then need to look at these operations in order to find out what it understands: these processes are the understanding. It is true that at a secondary level species and operations can become objects of the intellect. For example, the proposition, 'Magpies belong to the crow family', can itself be an object of thought, or it can form the content of a further proposition about the self: 'I am entertaining the thought that magpies belong to the crow family'. These propositions are objects of thought just as any items in, or facts about the world can be objects of thought; because they have become articulated as propositions (although not necessarily verbalised), and as such they belong to the domain of things in the world.

But it is important to recognise that this process whereby an operation becomes an object of thought is only at a secondary level. Operations of the intellect are never intrinsically objects of thought. I can entertain a proposition and act on it - for example, I can add my photograph of the magpie to the crow section of my collection - without having either the proposition or the entertainment of the proposition as an object of thought. Hence, although Aquinas says that the intellect knows itself through its operations, this does not mean that consciousness of the self, entails knowledge of operations, qua objects. Aquinas says that "the intellect knows itself, not by its own essence, but by means of its own activity." (Ia. 87, 1).

In contrast, Locke's ideas are intrinsically and essentially objects of thought. As Locke says in his discussion of memory, ideas cease to be anything when there is no actual perception of them (II.II.x.2). So for Locke when the mind knows itself - and it knows itself by means of its ideas and operations - it must know itself as an object.

ii. According to Locke, ideas are introduced into the mind as a result of external causes. Similarly some operations (such as those involved in certain knowledge (II.IV.ii.1), force themselves into awareness without any contribution from the mind itself. The mind just
passively receives. Moreover the mind does not apprehend these ideas or operations until it has 'perceived' them. In short, the process of understanding is thus: an idea is introduced into the mind, or an operation is caused; the mind reaches understanding by perceiving the idea or the operation. In other words, the mind cannot know what it is thinking except by inspecting its mental contents. But in Aquinas' doctrine, on the other hand, concepts or judgements cannot become objects of thought until there has been some mental act. Nothing can be introduced into the intellect without the activity of the intellect. It is true that Aquinas says that the species is impressed on to the receptive intellect.

But this is an altogether different process from the formation of ideas which are caused to be imprinted on the mind in Locke's account. The only causal relations which occur in Aquinas' account of the intellect are those of a formal cause, where the intellect grasps the form or the nature of the thing in question. So in imprinting the species impressa on to the receptive intellect the intellect has to know already what sort of thing is being apprehended. For Aquinas, far from its being the case that the mind learns about what it knows by surveying its own contents, there is nothing to be known until the mind has been actively engaged in the process of understanding. Furthermore, in order that a thought can be known as an object it must have been articulated as a concept, a proposition or as a judgement, all of which require the activity of the mind. For Aquinas, the representation of the species, forming a concept, or arriving at a judgement is to have the mind Intentionally directed towards the world. Hence, on Aquinas' account, mental acts and items can only secondarily be objects of thought. They cannot become objects until the whole process is complete. On this account the intellect's only characteristic is that it is engaged in various acts such as grasping the natures of things, forming concepts about them, and arriving at judgements, beliefs etc. If the mind is to be aware of itself, then, it must be aware of itself as it is in these acts. The intellect does not depend on inner entities or objects in order to become self-conscious.

iii. Now we are in a position to see why for Aquinas, there does not need to be, nor can there be, some representative entity which represents the self to itself. Whereas for Locke, since nothing in the world is known except via some representative, the self also cannot be directly known: the self must be represented to the mind by its ideas and
operations. And this fact gives the known self a passive character, in contrast with what superficially appears to be the activity of the self as knower. For Aquinas the mind is simply aware of itself through its own acts; for Locke the mind knows its own representations. What this difference underlines is the difference between the two accounts of representation. Aquinas' account allows that there can be what we might call representations, (species and concepts) as a result of the activity of representing (understanding the nature of a thing), but the account of representation focuses on what the activity is. Whereas on Locke's account of representation it is the other way round - all the explanatory force is packed into what the representation is. Representation then becomes just having that representative entity or being aware of it.

2.3 The role of representation in understanding reality

A final point of interest about Aquinas' account is the implication for the relation between representation and reality. Aquinas was clearly a realist. (Consider his rejection of immaterial Platonic forms, and his belief that the proper object of human knowledge is the external world - the world itself, not ideas, is the known object. And it is a God-created world which exists, independently of the human mind.) But he was certainly not a naive realist, and what emerges very interestingly from his account is that although the external world is there independently of any conscious mind, it cannot be known and understood without some activity of mind. This point is demonstrated very clearly, for example, in his account of abstraction, which differs in a marked way from the sort of account that Locke gives. An account like Locke's which simply observes and collects like instances of some feature in order to form a concept, leaves unexplained how the mind recognises 'like instances' in the first place. According to Aquinas, on the other hand, the intellect grasps reality only in terms of the intelligible principles which are abstracted.

The activity of the agent intellect is required, then, in order that the real world be known and understood. That activity takes place both by means of reasoning (combining and separating) and by representation (the application of the species). What representation seems to add up to in this context is the bringing together of spatio-temporally distinct items under one rule. To abstract the species (the specific nature of a thing) and to use it again involves something like a classification system, but it is more than that, because, as Charles Taylor
points out in a discussion of the representation of a symbolic system, non-human animals also 'classify' in the sense of reacting differentially to different types of things. Whatever it is that is involved in the abstraction and use of the species is captured in Taylor's remarks about representational activity.

"Perhaps one way of approaching this question of the nature of representational activity might be this: To be able to talk about things is to be potentially aware of them outside of any particular transaction with them; it is to be potentially aware of them not just in their behavioral relevance to some activity we are now engaged in, but also in a 'disengaged' way. Language is the major vehicle of this capacity to grasp things in a disengaged way, but language users are also capable of using a number of other vehicles with the same effect: mime, acting out, depiction by drawing, probably nonverbal mental images... Linguistic capacity, once it attains a certain level, permits an awareness of something like being picked up outside of the sole context of wanting to be picked up, that this disengaged awareness then becomes available in general to figure in new operations which require it, such as telling and hearing stories about being picked up, play acting the whole drama of being (or not being) picked up with a doll; and, much later on, in explicit verbal grasp of geometric and topological relations, and so on. Of course, all these activities are in a very real sense 'engaged' in their own way - the term 'disengaged' is in this sense unfortunate, even though it is hard to find another one which would create no misunderstanding. But, however passionate - and we know how deep the tensions can be which are discharged in children's play acting - these activities are all founded on an awareness of the object concerned which is disintricated from its original setting in some behavioral transaction.

"But language permits us to do more than achieve disengaged awareness of a particular set of contents; it is a general capacity which makes us capable of describing (and hence disengaging our awareness of) new things, of describing and hence evoking awareness of things that are not present or that may not exist." (Taylor, 1971, pp 404/5)

I shall take up the question of the nature of the relationship between language and disengagement in a later chapter, but for our present purposes Taylor's description of 'disengagement' provides a useful way of picking out the capacity which is crucial to Aquinas' conception of the relevance of species in recognising and thinking about the nature of reality. In understanding what kind of thing any item of reality is, we must be able to grasp it outside of this particular context. And as far as Aquinas is concerned we do this by bringing to bear on this item
the knowledge that we have gained during the abstraction of various species both now and in the past. And the species, just like language, link this item with other items (which may be spread out to far-flung spatio-temporal horizons), which have some features in common with it and some distinct from it. For to apply the species and to combine and separate is to say of any given item that it is a $\phi$ and has $\phi$-ness in common with other $\phi$'s; that it is not a $\psi$ and has not-$\psi$-ness in common with other not-$\psi$'s, and so on. And the capacity to abstract $\phi$-ness is the capacity to be able to think about, to represent items in their spatio-temporal absence, outside of any particular transaction with them in this context.

This is an important aspect of representation, which bears on the relevance of representation in grasping some present item as a $\phi$. And that capacity - the capacity to recognise items as $\phi$'s is, as we shall see later, essential to our notion of reality. We shall return to the topic of disengagement in Chapters 5 and 6.

In these final comments I have gone beyond what is explicitly given by Aquinas in his account. However, I believe that the implications are there. Perhaps these comments could have been made only in the light of preoccupations that have emerged since Aquinas, engendered partly perhaps by questions raised in the context of a philosophy of language. Nevertheless even without the benefit of a philosophy of language and associated thoughts about representation, Aquinas' philosophy of mind provides some fruitful insights into representative thought and its relation to reality.
CHAPTER THREE

DESCARTES' IDEAS: REPRESENTATIVE ENTITIES OR INTENTIONAL ACTS?

3.0 Introduction

Chapter 3 begins with an examination of some of Descartes' treatment of 'idea' in respect of representation. According to Arnauld, Descartes means 'idea' to be understood as an act of thought, while according to Malebranche, Descartes' 'idea' stands for some representative 'being', or mediating entity. In fact, both these conceptions are given expression in Descartes' writing. And we can find a possible explanation for this ambivalence in the scholastic influence on Descartes. His 'ideas' have many common features with both the Thomist phantasms and with the intellectual activity of the species.

In the second part of this chapter, Descartes' discussion of the sun example in the *Meditations* is examined in an Intentional context. Arnauld has suggested that when Descartes refers to his 'idea' of the sun, he means only the act of thinking of the sun. Yet Descartes discusses the question of which of two ideas of the sun most 'resembles' it. But how can an act resemble a thing? Perhaps, we might want to argue, the content of some thought or memory can resemble a thing? But can it really? The remainder of the chapter deals with why we cannot make that move, and why, furthermore, we cannot make sense of the notion of separating Intentional act and content.

In his dispute with Malebranche over the nature of 'ideas', Arnauld attempts to refute the claim that in thinking about the world we need the tool of representative beings. In this attempted refutation, he calls on the authority of Descartes.

Malebranche initiated the dispute in his *Traité de la nature et de la grâce* by inviting his critics to take account of what he had 'established' about the nature of ideas in his *Recherche de la vérité*. What Malebranche had claimed there was a thesis very much like Locke's: that all ideas are ideas of something and that as we do not perceive or apprehend objects directly, we must instead perceive some immediate representative object. These representative beings are what we call ideas. Arnauld accepted Malebranche's invitation and took issue with him in his work *Des vraies et des fausses idées contre ce qu'enseigne l'auteur de la Recherche de la vérité*, where he presents a set of definitions, axioms
and postulates "proving geometrically the falsity of ideas taken as representative beings". Commenting on this dispute, McRae in his article on "Idea" as a Philosophical Term in the Seventeenth Century, says:

"Because Arnauld invokes the authority of Descartes... he is involved in explaining Descartes' frequent references to ideas as representations, and also in explaining his definition of idea as the object of immediate awareness." (McRae, 1965, p 181)

Arnauld deals with this problem by saying that to represent a thing to ourselves in thought is simply to think of the thing, or "to have it objectively in our mind or thought". In explanation of Descartes' definition of ideas as the objects of immediate awareness, Arnauld suggests that when I think of the sun, although the object of the thought is the external object (the sun), there is also something going on 'in my mind', namely a piece of thinking, and I may be conscious of that piece of thinking by a further act of reflection. (Descartes, in fact, thought that all thought was self-conscious: Letter to Mersenne, July, 1641.) And that, says Arnauld, is all that Descartes means when he talks about ideas as the objects of immediate awareness; there is no need to bring representative beings into the story. (Des vraies et des fausses idées, p 47.) Is Arnauld justified in this interpretation and defence of Descartes?

In the next section this claim will be examined. We shall see that there is certainly textual support for Arnauld's interpretation. But there is also some textual support for Malebranche's position. In various part of his writings Descartes says both that ideas are passive representations - entities which stand in for objects in the world; and that they should be understood as acts of the mind towards some object in the world. In this connection the parts of Descartes' writings which are of particular interest are the sun example in the Third Meditation and his further discussion of that example in the Reply to the First Objections.
3.1 Idea - act or object?

3.1.1 Some of Descartes' ambivalence about the nature of ideas might be explained by the influence of Aquinas. Descartes, for much the same reasons as we have already noticed in Locke, conflated the roles of Aquinas' phantasms and species. Descartes wrote against a background of scholasticism, and was clearly influenced by it, even while trying to purify his epistemology of the hylemorphic doctrine. The result of all this appears to be a conflation by Descartes of what are two distinct threads in Aquinas: the phantasms, image-like surrogates, which resemble and represent external objects, and are the products of our sense perceptions; and the species, as categorising acts of mind. And in addition, Descartes sometimes seems to be influenced by Aquinas' forerunner of the Intentionality thesis - esse intentionale - which is apparently invoked by both Descartes' and Arnauld's definition of something thought about as having that thing "objectively in our mind". So Descartes' ideas come out sometimes as actively representing like Thomist species, and sometimes as passive representations, like Thomist phantasms. The passive interpretation was followed up by Locke and Malebranche, while Arnauld and Spinoza favoured the active interpretation.

We can see this active/passive ambivalence clearly if we look at the passage cited by Arnauld as his main textual support and at other passages in the Meditations.

Arnauld cites as his main textual support, the second and third definitions of Descartes' Reply to the Second Objections:

Df.II. "Idea is a word by which I understand the form of any thought, that form by the immediate awareness of which I am conscious of that said thought; in such a way that, when understanding what I say, I can express nothing in words, without that very fact making it certain that I possess the idea of that which these words signify."

Df.III. "By the objective reality of an idea I mean that in respect of which the thing represented in the idea is an entity, in so far as that exists in the idea; and in the same way we can talk of objective perfection, objective device, etc. For whatever we perceive as being as it were in the objects of our ideas exists in ideas themselves objectively."

(Haldane and Ross, 1931, v.II (HRII), pp 52/3)

Passages like this, Arnauld believes, lend support to his claim that when Descartes talks about an idea as a representation of some $\phi$ he is referring to the act of thinking about $\phi$. In this talk of 'forms' we
can see the scholastic influence. 'Idea' (eidos = form) is interpreted as form; and for Descartes at this point 'idea' is that form which is present in the phantasm (that same form which exists in the object represented by the phantasm), abstracted by the agent intellect and impressed on to the passive intellect as the intelligible species. In Definition II Descartes is apparently concerned with the equivalent of the Thomist abstracted form (intelligible species), used by the intellect to understand external reality; and for Descartes as for Aquinas the intellect knows itself in knowing external reality. But in the Definition III Descartes is surely thinking of the form as it is present in the phantasm, before abstraction. So here already we find some conflation in the conception of 'idea' of what are two quite distinct conceptions in Aquinas. If we accept the interpretation of Definition II as corresponding to the role of species in the Thomist intellect, we have some support for Arnauld's claim that idea should be understood as act.

But if we turn now to the Third Meditation where ideas play a large part in the argument we find something different.

"I have before received and admitted many things to be certain and manifest, which yet I afterwards recognised as being dubious. What then were these things? They were the earth, sky, stars and all other objects which I apprehended by means of the senses. But what did I clearly [and distinctly] perceive in them? Nothing more than the ideas or thoughts of these things were presented to my mind. And not even now do I deny that these ideas are met with in me... I thought I perceived very clearly, although in truth I did not perceive it at all, to wit, that there were objects outside of me from which these ideas proceeded, and to which they were entirely similar." (HRI, 158)

In this passage when Descartes says that the "ideas or thoughts of these things were presented to my mind", and that "these ideas are met with in me", he is apparently thinking of ideas as phantasms and, as such, they are presented to the intellect (mind). But this construction, lifted out of the hylemorphic framework of intellect and imagination, makes ideas sound like objects or mental pictures in that same mind to which they are presented. This interpretation of idea as phantasm is supported by the passage a little later in the Third Meditation where Descartes says:

"Of my thoughts some are, so to speak, images of the things, and to these alone is the title 'ideas' properly applied." (HRI, 159)

Notice that in these last two passages from the Meditations ideas come out as the complete and particular phantasm itself, not just the universal
form within the phantasm, as is suggested by the Definition III. And in his Reply to the Third Objections (Objection V), Descartes says quite explicitly that he uses the term 'idea' in various ways "to stand for whatever the mind directly perceives", and he takes Hobbes to task for interpreting 'idea' solely as an image or phantasm of the imagination (phantasia) (HRII, 67/8). And in his Reply to Objection VII (Third Set) Descartes claims that it does not follow from the fact that we have no image of God that we have no idea of God. We do have an idea of God; and similarly:

"... there is no image of the soul depicted in the imagination, but that which I have called its idea does, nevertheless, exist." (HRII, 70)

Quite clearly, then, as Descartes himself states he uses 'idea' with various meanings, including some which have been carefully distinguished by Aquinas.

One of the most interesting examples of the apparent ambivalence of Descartes' discussion of ideas arises out of the sun example in the Third Meditation. In his Reply to the First Objections Descartes gives a lengthy account of how 'idea' must be understood in this context. To have an idea of the sun he says is to have the sun objectively in the understanding. And the idea of the sun is simply the thing thought of. At this point it sounds as if Descartes means 'idea' to be understood in the way that Arnauld claims is the proper interpretation: that to have an idea of the sun is simply to think about the sun. Descartes says:

"Hence the idea of the sun will be the sun itself existing in the understanding, not indeed formally, as it exists in the sky, but objectively, i.e. in the way in which objects normally exist in the mind." (HRII, 10)

This distinction between 'objective existence' and 'formal existence' has an obvious affinity with the distinction that Aquinas makes between esse intentionale and esse naturale - intentional existence and real existence. Aquinas, of course had no doubt that entities which are thought about exist in the world, not in the mind. The objects of our thought are usually the things in the material world. A thought or a proposition might be the object of a further thought, but if we are thinking of the sun, then the object of our thought is not something in the mind, it is something in the external world. It seems as if Descartes in his Reply wants to make the same sort of point: an argument from what we would now call the Intentionality of thought. The sun in this case is
the Intentional (or 'Intended') object, i.e. the thing being thought about, as well as being a real (existing) object. And the Reply seems among other things to be a repudiation of the suggestion that there is any extra entity being referred to, namely the idea (or an image) of the sun, as well as the sun itself.

We shall return to a consideration of this 'Intentional' interpretation of Descartes' doctrine in the next section.

Meanwhile, in spite of Descartes' attempted repudiation of Caterus, it looks as if nevertheless he is left with an unwanted entity. The whole of the argument for the existence of God in the Third Meditation depends, after all, on the causes of ideas within us. To talk about an idea's being caused by an external object might simply be a loose way of saying that the external object provides me with something to think about: I would not think about the sun up there if there were not some object up there. So the fact of the sun's being there gives me cause to think about it. On this interpretation it would not have to follow that the idea of the sun was an entity caused by the sun, merely that the existence of the sun was a cause of (reason for) thinking about it. But Descartes was clearly not using 'cause' in this loose sense. He seems rather to be thinking about the efficient cause of idea, e.g.:

"Now it is manifest by the natural light that there must at least be as much reality in the efficient and total cause as in its effect. For, pray, whence can the effect derive its reality, if not from its cause?" (HR I, 162)

He conveys a similar message with his references to objects imprinting their likenesses on him (HR I, 160), often without his willing it to happen (HR I, 161).

So in spite of his repudiation of Caterus, and his claim in the Reply to the First Objections that an idea of a thing means no more than to think about it, his argument in the Third Meditation seems to depend on the interpretation of an idea as a mediating entity. It depends, in fact, on the interpretation which Arnauld rejects as being an incorrect understanding of Descartes.

So far, then, it appears that there is some support for Arnauld's view of what 'idea' means: namely to think about something in the world, to have it as an object of thought, or what we might now describe as the object of an Intentional act. And that does not entail having any entity in the mind. But just as strong support can be found
for the view that objects in the world must be represented in the mind by some entity, or alternatively perhaps that the content of an act of thinking becomes reified as an entity in the mind. We shall return to a consideration of this point in section 3.2. But first let us look at some of Descartes' scientific writings where we can find another tension between two interpretations of ideas.

3.1.2 The scientific account of ideas

We find the scientific account(s) of ideas in discussions of the nature of matter, as for example in the Principles, the Discourse on Method and the Dioptrics. In these writings Descartes reduces the external world of matter to extension and motion. The universe is a plenum of whirling particles. There is no void between and around observable bodies; the plenum consists in particles of various sizes, the smallest of which are relatively plastic and have no permanently fixed shape, which ensures that there will never be empty spaces. It follows from the fact that there are no spaces in the universe that the motion of any particle must result in a ring of movement and, in fact, Descartes conceptualises the universe as a system of vortices, all of which are causally connected. Within this scientific theory Descartes accounts for the causal connection between the external world and our ideas about it in the following way. Movement in the universe leads, by causal chains, to pressure on our sense organs, and this in turn leads to activations of brain cells, or brain patterns (sometimes referred to by Descartes as 'corporeal images'). These brain patterns produce what we experience as our sensations of or ideas about the external world. Here again we can see the influence of Aquinas: the 'corporeal images' being a derivation from the phantasms which are formed by the imagination (which is dependent on a physical organ) as a result of the causal effects of external objects on the sense organs. But Aquinas' phantasms are apparently non-corporeal.

The Dioptrics I gives an account of how we see colours. Descartes says we should conceive of light as:

"simply a certain very rapid and lively movement or activity, transmitted to our eyes through air and other transparent bodies, just as the movement of resistance of bodies a blind man encounters is transmitted to his hand through his stick."

Then he says in the so-called bodies:

"the colours are simply the different ways in which
the bodies receive the light and send it on to our eyes."

And just as the blind man by means of his stick detects the differences between trees, stones, water and so on, so we have sensations of different colours according to the different impacts made on our eyes by the moving bodies (Anscombe & Geach, 1964, pp 241/2). On this scientific account of the causal relations between the external world and our sensations, there is no reason to suppose that ideas represent the world by resembling it, like images. In fact, if our sensations are of objects like trees and houses, and the external world of matter (including our own bodies) is nothing but moving particles of different sizes, then clearly our sensations may be physically caused by the world of matter, but the effects cannot resemble their causes. It is not entirely clear from Descartes' account whether he means that the external commonsense world can be reduced to particles in motion, or whether he is saying that in fact there is nothing in the universe but extension and motion, and that all other qualities are constructions of the mind, arising out of the action of causal chains on our sense organs. The latter interpretation is suggested by the following passage, from the Dioptric I, where Descartes says we should not assume that there is anything existing in the external world resembling our ideas of it:

"It is not necessary to assume the transmission of something material from the object to our eyes in order that we may see colours and light, nor even the occurrence in the object of anything resembling our ideas or sensations of it." (AG, 242)

Here in Descartes' scientific writings we seem to get another account of ideas: neither object in the mind, nor act of the mind, but sensations which are causally produced by the action of matter on the brain (cf. Locke's account). It might be said that this scientific account is only a more sophisticated version of the 'popular' account of the Meditations. In the Meditations Descartes talks about the causes of ideas in 'common parlance'; he refers to the 'corporeal images' of the brain, rather than brain patterns, and he discusses the external world of commonsense objects rather than vortices of particles. But in both these accounts, the popular and the scientific, he says that ideas are caused by external objects. It is interesting to notice that in the scientific account we find an ambiguity analogous to the ambiguity in the Meditations: the slide from ideas as thoughts about objects to ideas as objects of thought. In the scientific account this ambiguity lies between
the view that the mind contemplates its brain patterns and the view that
the brain patterns give rise to the sensations. The first of these two
views seems implicit in the remarks in the Reply to the Second Objections,
where Descartes says that images:

"...are pictures in the corporeal imagination, i.e.
in some part of the brain. They are ideas only in
so far as they constitute the form of the mind
itself that is directed towards that part of the
brain." (HR II, 52)

In this passage Descartes seems to imply that when we talk of someone
seeing an external object, it is in fact the mind that contemplates a
corresponding brain pattern. But he explicitly rejects this view in the
Dioptrics VI where he says that:

"...we must not think that it is by means of this
resemblance that the picture makes us aware of
the objects - as though we had another pair of
eyes to see it, inside our brain; ...rather, we
must hold that the movements by which the image
is formed act directly on our soul, quā united
to the body, and are ordained by Nature to give it
such sensations.... But there need be no resemblance
here between the ideas conceived by the soul and
the disturbances that cause them." (AG, 246/7)

And a few pages later:

"It is the soul that sees, not the eye: and only
by means of the brain does the immediate act of
seeing take place." (AG, 253)

In these passages Descartes seems to be making the point that although
seeing takes place by means of 'the brain's motions', the brain is not
itself something which is observed.

These examples indicate that in his scientific writing as well
as in his epistemology Descartes shows an ambivalence between the notion
of mind as directed towards objects and the notion of mind (or brain) as
containing objects. These two different views about mind lead to
fundamentally different interpretations of ideas and the representativeness
of ideas. On the one hand we find that same view of representation
which is held by Malebranche that all ideas are of something, which for
Malebranche means that they are representative beings (entities). On
this view of representation the question can be asked: are all representa-
tions resemblances? and we have noticed that this question frequently
arises for Descartes - although it doesn't always get the same answer.
Against this view of representation we find the notion which Arnauld
says is the correct interpretation of Descartes, namely that to talk of the representativity of ideas does not entail representative beings; that to represent a thing in thought is simply to think about it. On this view, since there is no extra entity involved beyond the object thought about, the question of resemblance cannot arise, we should surely have to say. But perhaps we should not jump to that conclusion quite so hastily. This is a point we shall consider later.

3.2 Implications of Descartes' account

3.2.1 Why does this tension occur in Descartes' writings about ideas? The explanation lies partly, as I have already suggested, in the Thomist influence and the running together of two kinds of representation which were designed for different purposes. There is an obvious connection, for example, between the way in which Aquinas' phantasms are produced - as a result of changes in the sense organs caused by external objects - and the discussion in the Third Meditation of the causes of ideas. When Descartes suggests that ideas are images and objects of thought, he is apparently thinking of the phantasms. But when he says that they are forms they sound like species. When ideas are resemblances of physical objects they are again like phantasms. But when to have an idea of the sun is for the sun 'to exist objectively in the understanding', ideas sound like the esse intentionale of Aquinas, which is to say, acts of thought directed towards their proper objects in the external world - the interpretation which Arnauld thinks is the correct one of all Descartes' uses of 'idea'.

In his discussion of the sun example in the Reply to the First Objections Descartes does seem to have an Intentional-act conception of ideas, that is to say, he is referring to the activity of the intellect in grasping an understanding of the sun. But in the discussion of the Third Meditation itself, as we have already seen (3.1.1), ideas can more easily be identified with Thomist phantasms, objects of thought, rather than acts of thought. This interpretation is supported by the discussion of resemblance between an object and its idea.

"I have noticed that in many cases there was a great difference between the object and its idea. I find, for example, two completely diverse ideas of the sun in my mind; the one derives its origin from the sense, and should be placed in the category of adventitious ideas; according to this idea the sun seems to be extremely small; but the other is derived from
astronomical reasonings, i.e. elicited from certain notions that are innate in me, or else it is formed by me in some other manner; in accordance with it the sun appears to be several times greater than the earth. These two ideas cannot, indeed, both resemble the same sun, and reason makes me believe that the one which seems to have originated directly from the sun itself, is the one which is most dissimilar to it." (HR I, 161)

The first of these two ideas of the sun, the product of sense perception, can be identified with a Thomist phantasm, but the second idea, which is reached by a process like Aquinas' second act of the intellect cannot be identified with a phantasm. On the other hand Descartes talks of this idea also as if it were an entity about which the question can be put: does it or does it not resemble the sun? But if the second idea is an act of the mind, like Aquinas' act of the intellect in understanding the proper nature of a thing, how can it be said to resemble (or even to fail to resemble) an object like the sun? How can an act resemble an object?

I think the answer to this question is to be found in a slide from an Intentional interpretation of ideas, to a handling of them as if they were entities in the mind. The slide comes about, perhaps, because of Descartes' use of the word 'idea' for a number of quite different phenomena, which leads to a muddle among them. The fully-explicit modern concept of Intentionality might have helped Descartes to clarify his interpretation of ideas. But we must remember that although Aquinas names the concept of esse intentionale, that concept was only an embryonic form of the modern concept of Intentionality, which is foreshadowed in Aquinas' doctrine of the intellect, but not made explicit there. This way of conceptualising mental acts was therefore hardly available to Descartes.

In the next section, however, we shall consider some of the problems of Descartes' account within the context of Intentionality: Husserl's conception of noesis and noema.

3.2.2 Noesis and noema

The noesis is a particular Intentional act towards some object, for example, thinking, perceiving, desiring, remembering and so on. I think of x, perceive an x, desire some x, or remember some x. All these are cases of consciousness of or directedness towards some object. The noema is what might be called the 'aspect' of that object which arises
out of a particular Intentional act. For example, if I look out of my window at the wattle tree I see the grey-green foliage tinged with faint yellow, but under a different noesis, that of remembering the same wattle last spring, I have a noema of a bright yellow tree or of that characteristic scent which reminds me of the bush and so on. Two different noeses with their two correlative noemata.

Within Husserl's conceptual framework each noesis is inextricably related to its corresponding noema, and vice versa. For example, where the Intentional act is a perception, that act cannot be separated from what is seen, e.g. the grey-green foliage tinged with yellow; where the Intentional act is a memory it cannot be separated from what is remembered - the bright yellow tree etc. But similarly the grey-green foliage tinged with yellow cannot be separated from the act of seeing, and the yellow tree cannot be separated from the act of remembering. These two noemata are nothing but the 'content' of my perception or memory. (Although the use of the word 'content' is misleading, as we shall see shortly.)

Consider Descartes' sun example in terms of noesis and noema. One noesis might be the perception of the sun high in the sky, with its corresponding noema of a small, blinding sphere in an expanse of sky. Another noesis might be my calling to mind certain astronomical propositions, with the corresponding noemata of the propositions themselves. As we just noticed, another way of referring to what Husserl describes as the noema, is to talk about the 'content' of a thought or a mental act. Thus we might say that the small, blinding sphere is the content of my perception of the sun, and that the astronomical proposition, p, is the content of my thought about the sun. Once we refer to the contents of mental acts it looks as if the contents should be detachable from the mental act - in spite of what Husserl says about the inseparability of noesis and noema. For example:

(i) I see (a small, blinding sphere)
(ii) I remember (that the sun is 93 million miles away from the earth).

In both these examples it might appear that there is nothing wrong with detaching the percept and the remembered proposition from the acts of seeing and remembering, and considering, discussing, making statements about the bracketed percept and the bracketed proposition. But now what ontological status are we to give to the contents of the brackets? Let us examine this question in the light of Descartes' analysis of ideas.
We noted earlier that if representation is taken to be an act of thought, i.e., a piece of thinking, the question 'Is this representation a resemblance (of some entity)?' cannot sensibly be raised. For though one act, e.g., playing football, might resemble another act, e.g., ballet dancing, it makes no sense to ask if doing something resembles, or fails to resemble, a thing. There is a category difference between acts and things, and because there is, inevitably we become involved in category mistakes if we ask about resemblances between them. In what respect does an elephant resemble or fail to resemble playing football? More particularly, in what respect does an elephant resemble or fail to resemble my thinking about an elephant - in respect of size, weight, colour...? There are no criteria in terms of which such questions can be decided. Hence, if the question, 'Is this representation a resemblance (of some entity)?' is taken to be meaningful, it presupposes that the representation is not an act but, rather, what Arnauld would call a representative being - a thingish entity, though not quite a thing - a Lockean representative idea.

Yet Descartes apparently does make this category mistake. He does discuss the question of whether representations (which are supposed to be acts of thought) can resemble the objects which are represented. He does it, for example, in his discussion of the idea of the sun, where he claims that to say his idea represents the sun is only to think about the sun, yet he discusses his two ideas of the sun in terms of that idea which is most dissimilar to the sun. How does this come about? To find the answer we need now to examine the slide that we noted earlier from the Intentional interpretation of idea to idea as an entity. This slide takes place precisely on the question of the 'detachability of content' that we have just been considering.

We saw that 'content' might be a possible substitute for 'noema', and the contents of (i) and (ii) look as if they should be detachable from the Intentional acts which precede them. But now we are in a position to see one of the consequences of detaching content from Intentional act, or noema from noesis. This consequence is one that occurs in Descartes' account: that of reifying the content or noema. And this is how Descartes' extra entity - the idea that lies between thought and object - creeps in. Where the content of a thought or a perception or a memory is a phenomenal content it is an easy next step to turn the phenomenal content into an entity and then make the assumption that the entity has the same sort of status (or a 'mental' equivalent) as the physical object.
which is being thought about, perceived or remembered. Thus I can ask about the content of my perception (i.e. a small, blinding sphere) does it resemble the sun itself? And this is the slide on which Descartes loses his footing.

To see that there is a slide, compare the following: (a) I remember seeing the sun, then I ask myself does my idea (memory) resemble the sun? (b) I remember a fact about the sun which can be expressed in propositional form, but this time I do not ask if my idea (the proposition) resembles the sun. One might ask, is the proposition true of the sun, or even whether it is a true representation of the sun, but not, it seems, whether it resembles the sun. It is perfectly obvious in the case of propositions that the question does not arise. The other case (a) may seem to be different - it may seem that we can ask does my memory resemble the sun - but in fact it is not. The reason that we should rule out both (a) and (b) as cases of an idea resembling the sun has nothing to do with the content of any particular mental act. It is because, as we have seen, in both cases the ideas are supposedly to be understood as acts of thinking and perceiving.

But again we might ask: is it not possible to detach the content from the act - at least in the case of perceptions or visual memory images? For in these cases, I could make a drawing of the content of my memory or perception, and we could ask about the drawing, does it resemble the sun? But there are problems here - let us examine them.

The position we have reached is the following: I think that I have made a drawing of the content of my thought. This drawn content is, therefore, detachable from the act of thinking, because if it were not, how could I have drawn it? But, whatever plausibility this position might seem to have, it is not in fact possible to detach the content of thought from any Intentional act (of thinking, perceiving etc) for reasons which we shall now see - after which it may be appropriate to ask why it should seem to be possible to draw that which is the content of my thought.

3.2.3 Detachability of content

In the discussion of noesis and noema (3.2.2) it seemed as if (i) and (ii) might be preceded by any one of a number of Intentional acts, e.g.
We might argue that the same content can be common to a number of different kinds of Intentional acts - imagining, remembering, doubting, and so on. If this is so, if the same content can be identified in a number of different kinds of Intentional acts, then it looks as if the content can be separated from the Intentional act. Either the directedness of thought towards a small, blinding sphere or the proposition that the sun is 93 million miles away from the earth is common to a number of Intentional acts. So it appears that there are two components of Intentional acts: the content of the act, and the Intentional operator (I imagine, I remember, I doubt, I deny etc).

But this is not as straightforward as it might appear. What we have been doing, in breaking up these sentences into two components, is an acceptable procedure for making a logical or semantic analysis of a sentence or a descriptive statement. But this logical procedure cannot be taken as a phenomenological account - as a proper description of the Intentional act.

In order to see why this is so, consider another example: a phenomenological description given by Merleau-Ponty in Phenomenology of Perception. He describes walking along a shore towards a ship which has run aground: the funnels or masts merge into the forest bordering on the sand dune. At first he does not recognise this scene as the upper part of a ship; he merely has the feeling of imminent meaning - a "foreshadowing of an imminent order which is about to spring upon us a reply to the questions merely latent in the landscape." (Merleau-Ponty, 1962, p 17). Once he has recognised the ship as a ship he is able to make sense of the perceptual data. But until that moment all he experiences is "a vague feeling of imminent meaning".

If we now try to break up the above description into content and Intentional operator we could produce something like this:
(iiia) I have experience (a vague feeling of an imminent meaning) or

(iiib) I am vaguely aware of (an imminent meaning)

(iiib) seems to be a better formulation than (iiia), since it avoids awkward questions about the object of awareness (is it consciousness of something, or just 'consciousness' as such?) that we do not need to go into here. But even with this formulation, what are we to make of the so-called break-up of content and intentional act? Could the bracketed content (an imminent meaning) have any kind of intentional operator and yet remain recognisably the same content? It is hard to see how it could, because the essential character of that experience is its vagueness and indefinability. Certainly we could enclose the words 'an imminent meaning' within brackets and precede them with the description of some other intentional act such as:

(iiic) I am clearly aware of (an imminent meaning)

But what kind of sense does this sentence make? If it does make sense the words inside the brackets have a different meaning from the bracketed words in (iiib). And the reason for this is precisely that what is within the brackets restricts the choice of operator.

The core of the problem about this example is simply that although we may legitimately give a logical analysis of the statement by breaking it up in this manner, we cannot infer from this logical analysis that there is any corresponding separation between act and content in the phenomenology of the intentional act. As we can see in (iiib) there is no content which can be separated out from the experience of feeling that a meaning is imminent. The essence of this experience is its vagueness, its indefinability. If we search for an explicit content and find it - then this is not the same experience, not the experience of a vague feeling of imminent meaning. It is true that after the experience, Merleau-Ponty was able to say the meaning which was looming, that he felt hovering in the background was of a ship seen through trees. But at the time the experience could not be described as 'a vague apprehension of a ship seen through trees': that is not a content that could be separated out, because it was not the content of the original experience. It becomes the content of a later experience, when the imminent meaning has become an actual meaning.

In example (iiib), it seems to be quite clear that we cannot separate the content of the act from the act itself. But, it might be
argued, this is a special case which is subject to difficulties which do not arise in most cases. If we look back at the earlier examples (iia - iid) the same difficulties do not arise, because here we are dealing with an explicitly recognised content 'that the sun is 93 million miles away from the earth'. In all these cases, then, it should be possible to separate the content of the act from the act itself, in just the way that we have indicated by the bracketing. But is there really any difference between (iiib) and (iia - iid)? Certainly the logical analysis of (iia - iid) indicates a common content to these four cases. But can we infer that there is a correspondingly common phenomenological kernel? The most obvious candidates for this common kernel are (iib) and (iic), the cases of assertion and denial that the sun is 93 million miles away from the earth. When we look at these cases we might feel even more inclined to say that (iiib) is a special case precisely because there isn't any genuinely recognised, and therefore separable, content to the thought.

Where there is explicit content then we can separate that content from the mental act. But in reply to this objection it could be said that the pair (iib) and (iic) are as much a special and limiting case as (iiib), though at the other end of the spectrum, simply because they are readily expressible in the logical form of a kernel proposition plus an operator. Between these limiting cases, however, there is a range of cases. We can see this more clearly if we consider the case of doubt (iia) or questioning (iid) which have obvious logical affinities with affirmation and denial. But compare (iia) or (iid) with either of (iib) or (iic). On a logical analysis, we may say that there is a common kernel proposition, but it is far from clear that there is a common phenomenological kernel in these pairs. The essential character of doubting, for example, is that the content - that which is doubted - lacks the certainty of assertion. It might be objected here that this lack of certainty does not affect the proposition which is being doubted. There is, for example, nothing vague about what is being doubted, in the way that the Merleau-Ponty example is essentially vague. So there is no reason (we might say) why the kernel (the proposition) should not be common to doubting and asserting. But to make this objection is surely to be misled by the logical analysis of these cases, since the phenomenological character of doubting is to hold a number of possibilities in mind.
The point being made here is the Rylean one that when we doubt or assert something we don't do two things: (a) doubt and (b) separately consider the proposition (or whatever) which is being doubted or asserted. There is just one thing going on: an act of doubting which can be looked at (on later analysis) as if it were an operation (an act of pure doubting) applied to a proposition (the content). But this later analysis is the result of abstracting in two ways from the reality of the situation.

What has emerged from a consideration of these examples is that the logical or semantic analysis of statements about Intentional acts does not give us a licence to infer that there is any separation between the Intentional act itself and its content. Notice that this restriction on the separation of content from Intentional act applies in the other direction, also. We cannot sensibly talk about an Intentional operator alone, any more than we can talk of an Intentional content alone. To say, 'I imagine ------', without completing the sentence, is to talk of an empty act. If this is so, we cannot use the move that we tried earlier (in 3.2.2), when we considered the possibility that what was meant by saying that my memory of the sun resembles the sun was just that the content of my memory resembles the sun. This move was suggested as a possible solution to the problems created by saying that the Intentional act resembles an object.

But now we can see why this move cannot be made: the content cannot be detached from the act itself, even though, after the event, we can give a logical analysis of the statement which describes the Intentional act. It was precisely this move of attempting to detach the content of some Intentional act from the act itself which led Descartes into confusion in his account of his representative idea of the sun. First he recognised that to represent an object is simply to think about it; and to think about it in a particular way, for example, in terms of its characteristic of being a small, blinding sphere, or its characteristic of being 93 million miles away from the earth. But then he tries to detach the content of this thought and to turn it into another entity (a representative being). He discusses ideas as if the content of a thought is actually detachable (in the same way that a phrase in a sentence is semantically or logically detachable). He talks as if the content comes into the field of 'mental vision', as it were, hence his frequent use of metaphors such as 'vision' and 'illumination'. And he discusses the question of whether ideas resemble what they are ideas of, which was inconsistent with his interpretation of an idea as being to think about something.
The real question at issue here is not whether representations are or are not resemblances. Because even if it were possible to isolate something like a resemblance that still would not yield anything like the thought of the object. A thought involves an act of thinking; it is not just the inspection of some mental picture, as we saw in our examination of Locke in Chapter 1. This brings us to two questions which have not yet been explicitly answered, although by now the general direction of the answer should be clear. The questions (in 3.2.2) were the following:

(1) What is the ontological status of the bracketed contents of Intentional statements?

and

(2) How can it seem to be possible to draw that which is the content of my thought?

The answer to (1) is that the bracketed content is not some thing or entity, either physical or mental. It is rather that aspect of an Intentional act, which characterises the act as just that particular act and no other.

The answer to (2) follows from the first answer. The bracketed content is not a thingish entity and therefore cannot be drawn. It is true that I can produce a drawing which I describe as my memory of the sun. But what I have drawn is the sun itself, according to the way that I remember it. I show in my drawing just those visual characteristics which I recall having seen in the sun on some occasion, from some perspective or other. To put it another way, the drawing cannot embody the thought; it can only depict the way that I remember the sun as looking, or it can prompt further thoughts.

3.3 Conclusion

In this chapter we have looked at Descartes' treatment of 'idea' as a representation. As we have seen, and as Descartes admitted, he used the word 'idea' to refer to whatever the mind directly perceives. But this led to some confusion between different kinds of phenomena, for example, between 'idea' as act or object of thought. When we tried to make a split between Intentional act and its content, we found it could not be done because, as Husserl recognised, the content is an essential part of the structure of the act: the content of the thought, belief, desire, intention etc. is precisely what gives that character to the act.
We shall return to some of these points in later chapters, in particular, to the fundamentally Intentional nature of representation.

With this discussion of Descartes' account of representative ideas we have reached the end of Part I. What I have tried to do here is to use some historical models to bring into focus some important aspects of representation, for example, the contrast between 'active' and 'passive' approaches to representation, the lack of intelligibility of any account which does not provide for some agent to create the representation relation by an act of thought; the Intentional nature of representation; the directedness of the representational thought towards some item of reality separate from mind.

So far all I have done is to suggest, by means of illustrative models, the relevance of these notions to representation. Now in Part II we come to a more detailed working out of some of these themes, in which I shall offer some more compelling reasons for accepting that representation must be understood in the manner that has been foreshadowed in Part I.
PART II

SIGNIFICATION
PART II

SIGNIFICATION

INTRODUCTION

The different historical models of representation which we looked at in Part I served the purpose of bringing into focus a contrast between different approaches to representation. The contrast that we saw there was in respect of 'activity' and 'passivity'. Locke's account is a paradigm of passivity, with the consequence that it simply fails to explain how the representative item - any representative item - hooks on to the item of reality that it is said to represent. The presupposition of Locke's account is that there is something about the sign itself, in virtue of which it becomes a representation. Now, as we shall see in Part II, there is a sense in which signs are intrinsically significatory. That is to say, signification is built into the structure of the sign. But that structure arises out of the way that a particular sound, or mark, or gesture is used: as Piaget says, a signifier is only as good as the intelligence which uses it. And Locke's passive rendering of thought leaves no room for explanation of how a sign can come to have a structure such that it represents.

The inadequacy of Locke's account in this respect became clearer when we turned to Aquinas, where representation is associated intrinsically with activity of thought. In the following part we shall look in more detail at the question of how a sign can have a structure which is intrinsically significatory.

We shall begin Part II with a study of the semiotic theories of Saussure, Peirce and Piaget. These theories hold the promise of a more satisfactory treatment of the relationship between thought and reality which underpins representation. That they do so is connected with the fact that they are less circumscribed by the passive model of thought. Although the ways that Peirce and Saussure handle representation are not problem-free, we can see a different kind of account emerging from their writings. Piaget takes these accounts further and overcomes

1. I shall use the term 'signifier' to refer collectively to all items - e.g. signs, symbols, signals - which have some signifying relation, except in the pages where Saussure's more restricted use of 'signifier' is under discussion.
some of the problems that arise for the other two, although there are different problems in his account.

Part II focuses on the topic of signification, within the more general area of representation. In discussing the former we are also saying something about the latter, because signification cannot take place without representation, nor representation without signification. All representation involves making something stand for some other thing. The item which stands for, or represents, the other is a signifier. In thinking about signification we focus on a particular aspect of representation, namely the function of the signifier and the nature of its signifying relation.

In a discussion of signification and representation in The Order of Things, Foucault makes the following connection between representation and signification:

"The binary theory of the sign, the theory upon which the whole general science of the sign has been founded since the seventeenth century, is linked... to a fundamental relation with a general theory of representation. If the sign is the pure and simple connection between what signifies and what is signified (a connection that may be arbitrary or not, voluntary or imposed, individual or collective), then the relation can be established only in so far as they are (or have been or can be) represented, and in so far as the one actually represents the other." (Foucault, 1970, p 67)

We shall examine the 'binary theory of the sign' in the light of various theories of semiotics. All of them show that the relation of sign to signified "is not", as Foucault puts it, "guaranteed by the order of things in themselves". What connects them is "a bond established, inside knowledge, between the idea of one thing and the idea of another". The Port-Royal Logic states this as follows:

"The sign encloses two ideas, one of the thing representing, the other of the thing represented; and its nature consists in exciting the first by means of the second." (Port-Royal Logic, Pt. I, Ch. 4)

And Foucault has a further comment:

"In its simple state as an idea, or an image, or a perception associated with or substituted for another, the signifying element is not a sign. It can become a sign only on condition that it manifests, in addition, the relation that links it to what it signifies. It must represent; but that representation, in turn, must be represented within it." (Foucault, 1970, p 64)
These are the questions which we shall consider in Part II: what is the function of the signifier and what is the nature of the signifying relation?

In Chapter 4 these questions are raised in the light of Saussure's and Peirce's accounts of various kinds of signifiers, and how they become attached to the items that they stand for. Implicit in these accounts is a need for Frege's sense/reference distinction. But this distinction is never articulated as such by Saussure and Peirce, hence some difficulties in explaining how the signifying relation comes about, and in deciding whether 'the signified' is to be interpreted as some object or item which is represented by a sign, or as some concept which arises out of the application of sounds, marks, etc. to items in the world. When we turn to Piaget's account (in 6.3) we find the sense/reference distinction still unarticulated but more obviously implied in his distinction between the representation of sensory-motor infancy with its bare reference, and full adult representation with its reference in a context of 'meaning' (sense).

But before this, at the end of Chapter 4 (4.3 - 4.5), we shall examine some of the characteristic differences between various forms of signifiers; and this leads to a recognition of a major division between 'witting' and 'unwitting' use - the distinction between those signifiers which are used and recognised as signifiers, and those which are merely used, i.e. used but not recognised as signifiers.

This important distinction leads in turn to the topic which occupies Chapters 5 and 6: 'disengagement'. As Charles Taylor has pointed out, there is all the difference in the world between the way that the slap of the beaver's tail upon water is linked to the flight behaviour of its companions, and the way that in the course of learning a human language 'chair' becomes linked to chairs. The latter implies the capacity to use signifiers to think about things independently of any particular here-and-now context. And this capacity for disengagement which marks off human use of signifiers from that of other animals is right at the core of representational thought. But what, precisely, is the relationship of this capacity for disengagement with the marks or noises or gestures etc. that we use as signifiers?

That is one of the questions to which we turn in Chapters 5 and 6; and in attempting to answer it we shall look at Piaget's theory of knowledge, 'genetic epistemology'. Piaget himself sees his genetic
epistemology as a study of human thought and knowledge which is derived from empirical observations (rather than from the 'a priorism' of philosophers such as Plato and Kant). If Piaget's account were just what he claims it might not have much interest as philosophy. Questions such as: are there differences between the intellectual capacities of infants and adults? and, if so, what is the sequence by which the infant progresses to conceptual adulthood? are mostly empirical questions and, as such, are the concern of psychologists rather than philosophers. But questions such as: what is it that we attribute to someone when we say that individual has the capacity for representational thought? or, to put it another way, what is the nature of these capacities (e.g. the capacity for representational thought)? - these are conceptual questions and therefore of interest to philosophers. Piaget is as much preoccupied by the second of these two types of questions as he is by the first - perhaps because the psychologist who has not considered the latter will not make much progress with the former.

Piaget identifies full adult representation with conceptual thought. We shall see how he gets to that position first (in Chapter 5) by examining his account of stages of intellectual development, with an ever-increasing network of 'action schemes' which link together various sensory-motor actions of the same type (e.g. grasping), and are later replaced by conceptual 'structures' as the child begins to gain (conscious) access to the extension of its schemes. These conceptual structures pave the way for 'disengagement', but they can be used in that way only through interaction with the 'semiotic function'. In Chapter 6 we shall come to Piaget's account of how that occurs: an account which fails in its objective of explaining the mechanism of the transition from sensory-motor to conceptual representation, but nevertheless does much to illuminate the nature of representational thought.

These, then, are the questions to which we shall turn in Part II, questions which may be summed up by the following: what is the nature and function of the signifier and of the signifying relation?
CHAPTER FOUR

SEMIOTICS: SAUSSURE, PEIRCE, PIAGET, FREGE

4.0 Introduction

In the last part of the nineteenth century and the first decade of this one, three men were interested in (among other things) problems about signs and signification: Ferdinand de Saussure (1857-1913) in Switzerland, C.S. Peirce (1839-1914) in the United States and Frege (1848-1925) in Germany. Apparently there was little or no acquaintance between them, yet we can find some interesting similarities in their views. In fact, each might have been helped if there had been communication between them. Frege's sense/reference distinction is an obvious example. At times both Saussure and Peirce discuss questions in a way which makes this distinction spring to mind, and an explicit recognition of Frege's work might have helped the others to clarify some problems that arise in their own work. 1

Nevertheless both Saussure and Peirce raise interesting questions about representation in their seminal writings in semiotics. 2

4.1 Saussure's conception of 'signifier' and 'signified'

In his classic work on linguistics and semiology, Course in General Linguistics (published posthumously in 1916), Saussure discusses the relationship between sign, 'signifier' and 'signified' (or 'significate'). A sign may be an object or an event or it may be some mental construction, such as an image or language - which is Saussure's main concern. That which the signifier represents, or signifies, is the signified or significate.

Saussure introduces his discussion of the nature of the linguistic sign by showing what is wrong with the naive notion that words are names of things. "The linguistic sign," he says, "unites not a thing and a name, but a concept and a sound image (an utterance)". (Saussure, 1. Frege's paper on 'Sense and Reference' was not published until 1892, and by this time Peirce had already produced most of his work on signs. Saussure lectured on general linguistics between 1907-11, but nevertheless there is no indication that he was familiar with the sense/reference distinction, as such. (Not that this is surprising, in view of the general neglect of Frege's work during his life-time.)

2. The term 'semiotics' was introduced by Peirce. Saussure uses the term which is translated as 'semiology'.

These two elements are "intimately related", each recalling the other.

"Whether we try to find the meaning of the Latin word arbor or the word that Latin uses to designate the concept 'tree' it is clear that only the associations sanctioned by that language appear to us to conform to reality, and we disregard whatever others might be imagined." (Saussure, 1974, pp 66/7)

So for Saussure 'sign' incorporates both 'concept' and 'sound-image'. But then Saussure goes on, revealingly, to say that he prefers to use the terms 'signified' (signifié) and 'signifier' (signifiant) for concept and sound-image respectively (p 67). 1 We might conclude from this that for Saussure linguistic signs refer to or signify mentalistic items, for elsewhere he describes concepts as 'mental facts' (p 11) and as 'psychological parts' (p 12). A concept (or 'the signified') also seems to be equated by Saussure with sense, although he does not define 'the signified' at all precisely or clearly. But we can get some clue about its nature if we consider his discussion of the 'speaking circuit', that is, linguistic communication between two or more people, which is as follows. In the brain, mental facts (concepts) are associated with those representations of linguistic sounds (sound-images) which are used to express the concepts; a given concept "unlocks a corresponding sound-image in the brain". As a result of a mixture of psychological and physiological processes, and by means of the organs of brain, ear and voice, concepts are aroused and communicated via speech between persons A and B (pp 11-13).

This account seems reminiscent of Locke's theory of the relationship between ideas and linguistic signs; Saussure's sound-image signifies something which has affinities with a Lockean idea. (Locke held that ideas are signs or representatives of the external world, and also that words are signs of ideas.) But a sign according to Saussure incorporates both signifier and signified, whereas on Locke's account a sign is equivalent to a signifier only. A name signifies an idea, and an idea represents something in the external world. And in this respect Locke's account seems intuitively correct: a sign signifies something else. What then are we to say of Saussure's account where the significational act all takes place within the sign? How we might ask does the sign relate to the (physical) world?

1. Notice this use of 'signifier' by Saussure: it is more restricted than my use of the word, which includes signs, instead of (as in Saussure's usage) being one aspect of a sign.
The problem about Saussure's account of signs seems to be twofold: a sign as a whole should surely have the relation of signification to some other thing, object, event etc. And, second, the class of things which we normally think of as 'signified' includes concepts, but it includes many other things besides, for example, trees, people, actions, events, states of affairs, propositions - in other words, anything that can be talked about, referred to, indicated, or represented. How do signs, on Saussure's account, come to represent or stand for the other items on the list above?

In this twofold problem we can again find echoes of Locke - this time of Locke's discussion of the relationship between general terms and general ideas. Locke's explanation of how general terms can be applied to a class of individuals (HU.III.i.ii, 6-8) was, of course, to say that we abstract the common features from the members of the class and then form a general idea. This general idea thus represents a whole class of things. And a general term or word is a sign for a general idea. According to Locke, then, as a result of our experiences with various individuals which have some common characteristic we develop a general idea about that characteristic. Words become linked to these general ideas, as signs which represent them.

Perhaps we might interpret Saussure's use of word-image and concept in a way which would correspond to Locke's use of a word as a sign or a general idea. If this were the case we should understand why Saussure says only that the signified is a concept and not, as we might expect, that the signified could be anything whatever in the real or imaginary world. Perhaps what Saussure has at the back of his mind is something like Locke's account of the matter: that we form concepts out of our repeated experiences of similar items. And so, on this view, we could understand why the signifying relationship is within the sign and yet the sign still has a connection with some other thing for which it stands. The sign 'tree' stands for the object, an individual tree, because the sign includes the concept of a tree, which itself arises from experiences of individual trees. And when I utter the appropriate sound this is accompanied by my concept which is appropriately evoked by this particular individual which falls under the concept tree.

But if this is how Saussure is to be understood he still has problems. The same problems which Berkeley noticed in Locke's account. In his discussion of Locke's abstract ideas in the Introduction to The Principles of Human Knowledge, Berkeley asks what can be meant by an
abstract idea (Armstrong, 1965, p 49). It is true that we think about universals, even though the world is filled with particulars. But to think about universals is not to have an idea which is an abstraction of all the members of the class represented. For example, when I think about a triangle and I am concerned with some general proposition about all triangles, do I have an idea of a triangle "which is neither oblique nor rectangle, neither equilateral, equicrural, nor scalene; but all and none of these at once"? (p 52) Obviously not, says Berkeley. When I demonstrate some proposition about triangles, I merely take some particular triangle - which sort does not matter - and let that triangle stand for all others. Berkeley points out the misunderstanding that is involved in supposing, as Locke did, that there is any one-to-one correlation between names and ideas. The relation of 'standing for' simply arises out of the assigning that function to the sign.

If Saussure's account of the relation between word-image and concept is to be interpreted as running parallel to Locke's account of word and idea, then the same objections should apply to Saussure as to Locke. However, in spite of what looks like a similarity between these two, there are aspects of Saussure's account which show that it should not be interpreted in quite this way. Saussure, in fact, objects to "this naive approach" just because the linking of a name and a thing is not a simple operation, and further because it assumes that ready-made ideas exist before words (p 65). He goes on to show how this cannot be the case - how, on the contrary, different languages divide up the world differently:

"If words stood for pre-existing concepts, they would all have exact equivalents in meaning from one language to the next; but this is not true. French uses *louer* (une maison) 'let (a house)' indifferently to mean both 'pay for' and 'receive payment for', whereas German uses two words, *mieten* and *vermieten*; there is obviously no exact correspondence of values." (p 116)

Locke's discussion of ideas as if they were 'furniture of the mind' is of course diametrically opposed to any conception of language as dividing up the world differently. In fact, Locke quite explicitly states the view that words are signs which get attached to pre-existing ideas:

"The Comfort, and the Advantage of Society, not being to be had without Communication of Thought, it was necessary that Man should find out some external sensible Signs, whereby those invisible Ideas, which his thoughts are made up of, might be made known to others." (HU.III.ii.1)
Saussure on the other hand describes thought without language as "a vague uncharted nebula" (p 112). We require signs, he says, in order to be able to make clearcut distinctions. Saussure also gives an account (which interestingly foreshadows Wittgenstein) of how language is dependent on a community of speakers (p 78). We do not need to concern ourselves here with that account, except to notice that in the course of it Saussure discusses the relationship of the sign 'in its totality' with the world, as well as the relationship, within the sign, of signifier to signified.

What lies behind the distinction between these two relations: (i) sign and item it stands for; and (ii) signifier and signified, is I think the following. Saussure rejects the conception of language as a simple naming process, with names attaching to objects like labels on bottles. Language is inextricably tied up with concepts, in a manner which, since Wittgenstein, we have come to call the doctrine of 'language in use'. That is to say, that language and concepts are acquired together, as language is used by a community of speakers, in various linguistic and non-linguistic activities.

We should therefore not be misled by Saussure's use of the word 'concept'. Although he describes concepts rather imprecisely as 'mental facts' and 'psychological parts' his subsequent discussion suggests that he does not mean that concepts are merely individual and private psychological events, like Lockean ideas. On the contrary, Saussure's concepts appear to be mind-dependent only in the sense that Frege ascribed to 'objective' items.

"I distinguish what I call objective from what is handleable or spatial or real. The axis of the earth is objective, so is the centre of gravity of the solar system, but I should not call them real in the way the earth itself is real. We often speak of the equator as an imaginary line; but it would be wrong to call it an imaginary line in the dyslogistic sense; it was not created by thought as the result of a psychological process, but is only recognised or apprehended by thought." (Frege, 1950, p 35e)

Objective items are independent of our (individual) sensations, intuitions and imagination, and of all constructions or mental pictures out of memories of earlier sensations, but they are not independent of reason (p 36e). An objective item such as the equator or the number four is not something that can be perceived or known merely by empirical observation, but once it has been recognised its application to the real world is an empirical question. The equator, for example, is mind-dependent in that
it does not exist in the way that the earth itself does and that it is apprehended by thought, but whether some real and physical entity such as a sea or an island lies north or south of the equator is something that can be decided only by a perceptual and empirical test. Objective items therefore are mental or mind-dependent only in a limited and particular sense — not in the sense that they are dependent on the peculiarities of individual psychology.

What Frege says about these objective items might also be said about not only Saussurian concepts but about concepts in general. They also are mind-dependent in the limited sense that they are apprehended by human thought and reason; they are not subjective in the pejorative sense of 'merely subjective', i.e. idiosyncratic and dependent on the peculiarities of individual psychology. Like Frege's objective items, concepts are recognised, talked about and used in the same way by all the members of the community. It is clear, I think, that in spite of Saussure's description of concepts as 'mental facts', he means concepts to be understood as belonging to the public realm.

There is another close parallel with Frege that we can read into Saussure's account — namely, the sense/reference distinction. What Saussure calls 'the concept' can be identified with what Frege would call the sense of an expression, while that which the sign 'in its totality' stands for can be identified with the referent of an expression. But neither this distinction, nor the interpretation of concept, ever becomes fully articulated in Saussure's writing. We can only conclude that he senses the problem of explaining the nature of the sign, the reality that it stands for, and the signifying relation between them, although he never quite confronts this problem.

4.2 Peirce's 3-term signifying relation

But let us leave Saussure for the moment and turn now to the work of C.S. Peirce, where we do find an explicit recognition of the problem of the signifying relation. Peirce discusses what he sees as a triadic relationship between the sign, the object it stands for and a third item, which he calls the 'interpretant':

"A sign, or representamen, is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign or perhaps a more developed sign. That sign which it creates I call the
interpretant of the first sign. The sign stands for something, its object." (Peirce, 1967, 2.228)

Peirce maintains that every sign requires an interpretation, and that a sign is a sign only because someone makes it stand for something. In some ways the interpretant appears to correspond to Saussure's notion of the signified: it stands between the signifier and the reality which is represented by the signifier. Again, like the signified, it appears to be some sort of mental or psychological item, because of the suggestion that something is 'created in the mind' of a person, and that item in the mind is what supplies the connection between sign and the reality it stands for. Peirce, however, attempts to get right away from the realm of psychology and into the realm of logic by being explicit about the fact that the interpretant is not an actual psychological event in the mind of a particular interpreter. It is rather something which is a possible thought - in the same way as a proposition can have a logical status, irrespective of any psychological event in the mind of a thinker. The interpretant of a sign, he says, is a thought which is itself a sign (2.203). This move raises difficulties in Peirce's account. Every signifying relation between sign and object has to be accounted for by a further sign which, as it were, establishes the signifying relation. Ayer has discussed some of the obvious problems such as regress and circularity which arise out of this account (Ayer, 1968, p 171). A possible solution is to take the relation of 'being interpreted to stand for' as primitive. But all that this yields is the principle that every sign must have an interpretant, without illuminating the nature of the signifying relation. The question is what is it that we do when we make a sign stand for something else, or what is it about a sign that makes it refer beyond itself? One of the difficulties that arises out of Peirce's theory is that of determining the exact nature of the triadic relationship between sign, object and interpretant. It seems clear that the object of the sign should be identified with what it denotes, rather than with its sense:

"The object of a sign is one thing: its meaning is another. Its object is the thing or occasion, however indefinite, to which it is to be applied. Its meaning is the idea which it attaches to that object, whether by way of mere supposition, or as a command or an assertion." (5.6)

But what is not so clear is the nature of the interpretant. Is the interpretant to be identified with the (Fregean) sense of the sign, as we suggested that Saussure's concept may be? Or is the interpretant to be identified with the signifying relation?
These two alternatives — interpretant identified as Fregean sense, or as signifying relation — may not be unconnected. As we saw in Saussure's account the link between the total sign and that for which it stands apparently becomes established by the concept aspect of the total sign. Saussure says that "the linguistic sign unites, not a thing and a name, but a concept and a sound-image"; and the total sign comes to stand for or refer to a particular item of reality just because the concept develops out of the use of a sound in a variety of linguistic and non-linguistic activities, according to the conventions of the community. So here there is a sense in which the signifying relation between sound and reality can be identified with the development of the concept. To have the concept is to have learned how to use the sound to refer to some item of reality in just the same way as any other native speaker. For example, if I utter the sound, which is represented in English by the word 'chair', in just those contexts (and no others) in which the sound would be uttered by any other native speaker, I both have the concept chair and I have made the signifying relation between the total sign, 'chair' and a particular item of reality. What provides the signifying relation is the community agreement to apply the sign (i.e. use the sound) in this way.

A similar move can be detected in Peirce's account. Something is needed to supply the signifying relation between sign and object, and the interpretant supplies that link — the interpretant being some sort of ideal mental item. Both Peirce and Saussure either explicitly or implicitly see the need for an explanation of what it is that makes the sign refer beyond itself. Peirce puts the problem this way:

"If a Sign is other than its Object, there must exist, either in thought or in expression, some explanation or argument or other context, showing how — upon what system or for what reason the Sign represents the Object or set of Objects that it does." (2.230).

There is nothing about a particular sound in itself which shows why or how it refers beyond itself to some object; there is nothing intrinsic about a mark like ---→ which indicates that we are to move in an easterly direction, or that it stands for the relation of entailment; there is nothing about a mark on the table which in itself points to some coffee spilt there on the previous day. Merleau-Ponty makes this sort of point in Phenomenology of Perception, when he says:

"This table bears traces of my past life, for I have carved initials on it and spilt ink on it."
But these traces in themselves do not refer to the past: they are present; and, in so far as I find in them signs of some 'previous' event, it is because I carry this particular significance within myself." (Merleau-Ponty, 1952, p 413)

He shows that when we try to explain the past by saying that we observe it 'in the world', all that we can ever show is some present item. Our so-called explanation of how we understand the past has, in fact, to presuppose a sense of pastness; and this is something that we have to bring to the data that we think of as constituting the past.

There is something in common with this view lying behind the approach of Peirce and Saussure, both of whom see agency - that is, some person who interprets or makes one thing stand for another - as essential to the signifying relation. And both see this agency as being connected with some ideal mind. What occurs in the ideal mind is some thought or intention about the connection between sign and the reality it stands for. In both Peirce's and Saussure's account, then, the thought, concept or interpretant becomes identified with the signifying relation. But if this is so have we reached a position where a relation becomes a third entity between two other entities? If this were so it would lead to a regress of relations - two more relations being needed to connect the three items, sign, signifying relation, reality, and so on. To avoid this regress we must deny that the signifying relation is an entity or object-like item. We spoke about it as being the concept (for Saussure) or the interpretant (for Peirce). Both concept and interpretant are mind-dependent, but as we saw in Saussure's case this does not mean that there is any psychological entity or event involved in the story. In Saussure's use of 'concept' we can see that what makes the sign signify is the manner in which it is used by a community of speakers. What supplies the signifying relation then is not some fresh item - a psychological entity - which stands behind the physical sound or mark, but some activity on the part of the creator or the interpreter of the sign: an activity in a particular context and against a background of certain conventions. A similar move can be detected in Peirce's account: the 'interpretant' filling the same sort of role as Saussure's 'concept'.

So far we have looked at some of the puzzles that seem to arise around the signifying relation in Saussure's and Peirce's accounts of signs. We have also considered some possible ways of interpreting their accounts in order to sidestep various problems. But there are unsatisfactory aspects still remaining. There is something strange, for example, in
Sausure's notion that we find the signified within the sign rather than, as we should surely more intuitively suppose, taking the signified to be that which the sign as a whole stands for. But this move could be a recognition of the need to explain what it is about the sign which allows it to refer beyond itself. Saussure apparently wants to say that there is something inherent in the nature or the structure of the sign which makes it a sign. He recognizes that same point which is expressed by Foucault (in characteristic style) as:

"The sign does not wait in silence for the coming of a man capable of recognizing it: it can be constituted only by an act of knowing." (Foucault, 1970, p 59)

But if this is so, can it be reconciled with what has already been said about the signifying relation arising out of the way a sign is used (rather than what it is)?

The answer to that question is: yes, if it can be shown that what gives a sign its particular structure is the way that it is used. And this is one of the questions to which the following chapters are addressed. A mark or a noise by itself is, of course, not a sign, and therefore there is no inherent physical feature of a mark or a noise which makes it a sign. A mark or a noise just is a sign when it is used in a certain way. Once this condition of use is fulfilled it then becomes possible to ask what it is about the inherent structure of sign which makes it a sign. But we still cannot ask this of the mark, and in asking it of the sign, therefore, we are not asking about physical features of the mark. We are instead asking something about the characteristic use of the mark as a sign, which is to ask something about an act, not about an entity or some other physical item.

If it is true that what gives the sign its particular structure is the way that it is used, then the two questions that we have raised in relation to Peirce and Saussure - the question of the nature of the sign, and the question of the signifying relation between sign and that to which it refers - can be seen to be connected. And that this is so will also become clear in the remainder of this and following chapters.

As a first step towards this end we need to make some distinctions between different forms of signifiers.
4.3 Icon, index and symbol

Peirce makes a distinction between three types of signification: icon, index and symbol (2.247).

An icon is a sign which stands for an object in virtue of its resemblance to that object (2.276). Sometimes Peirce sounds as if he believes that the signification simply arises spontaneously out of the resemblance (e.g. 2.299), as if the resemblance of itself represents the original (2.278) in the same way that a photograph might be supposed (naively however) to represent the original, simply in virtue of its 'resemblance'. But as we saw in Chapter 1, resemblance alone is not enough for representation. And as Ayer points out:

"What makes it a sign if it is one, is that it comes under a convention in terms of which resemblance is treated as a method of representation." (Ayer, 1968, p 131)

A picture is an icon, and so is a diagram, because although there is no phenomenal resemblance involved in the latter case there is nevertheless an analogy between the relations of the parts of each. Peirce justifies this claim by explaining that:

"A great distinguishing property of an icon is that by direct observation of it other truths concerning its object can be discovered by those which suffice to determine its construction." (2.279)

Thus we can use a map to calculate the distance between two towns.

An index is a sign which refers to its object in virtue of its being 'affected' in some way by the object; in other words, it has some causal dependence on the object. But, says Peirce, "it makes no difference whether the connection is natural, or artificial, or merely mental" (8.368, editorial footnote). So an index can be connected with its object as a low barometer is with rain, or a man's rolling gait is a probable indication that he is a sailor (2.286). But indices also include verbal signs like the demonstratives, 'this', 'that', personal pronouns, and spatio-temporal indices like 'here' and 'now' (2.289). And these latter indices - verbal signs - qualify as indices because their function is to "force the attention to the thing intended". They "are absolutely

1. Notice that Peirce uses the term 'sign' as a general term like 'signifier' for anything that signifies.
indispensable both to communication and thought" since "no assertion has any meaning unless there is some designation to show whether the universe of reality or what universe of fiction is referred to." (8.368). Some indices are directions for what the hearer is to do in order to place himself in direct experiential or some other connection with the thing meant, for example, a Notice to Mariners which gives latitude and longitude, four or five bearings of prominent objects, and which says there is a rock, or shoal, or buoy or lightship (2.288).

Peirce implies that an index is a sign which is in some way superior to an icon (he claims that a yard-stick is an index, and not 'a mere icon' — (2.286)). The reason for this is presumably connected with the fact that as we noticed above, he considers that an index is indispensable to reference (denotation, at least) — indispensable, indeed, to the statement of any matter of fact. He tells the story of a Simple Simon who meets a man on a country road. The man says to the Simple Simon, "The chimney of that house is on fire". The Simple Simon looks round and sees a house with green blinds and a verandah and a smoking chimney. He walks on down the road and meets another traveller to whom he says, "The chimney of that house is on fire". The traveller asks, "What house?". "Oh, a house with green blinds and a verandah" replies the simpleton. "Where is the house?" asks the traveller. Peirce's comment on this story is that the traveller "desires some index which shall connect his apprehension with the house meant. Words alone cannot do this" (2.287). As Ayer notes:

"The inclusion of designations as one of the main classes of indices is not very easy to reconcile with the requirement that indices be really affected by their object." (Ayer, 1968, p 152)

But I think that what Peirce is concerned with here is the problem of how signs refer beyond themselves. In the case of causal dependence — the rolling gait of the sailor, or the low barometer — the explanation might seem straightforward, namely contiguity of association. The connection between verbal signs and their objects is apparently not so straightforward, so Peirce looks for an analogue of contiguous association, and that analogue is indexical expressions. But there must be something more involved in the signification and the fixing of linguistic reference than merely the contiguous association of the non-verbal index or the 'forcing' of attention by a verbal index such as 'there'. For if the former were all that were needed as a model for the latter (linguistic reference), then it would begin to look as if there
were nothing more complicated in the human use of language as a sign system than the non-human animal use of a sign system such as the 'warning' cry of the sulphur-crested cockatoo. But most of us would presumably be reluctant to accept this conclusion; if not now, then I hope to show later that there is every reason why this conclusion should be reluctantly accepted. And if we are reluctant to accept this conclusion, it is surely because we believe that the signification of language is of an order quite different from the signification of the cockatoo's cry. However let us for the moment accept Peirce's concern with explaining how things refer beyond themselves, and return later to a discussion of how this is to be achieved.

If we move on to Peirce's third category of signs, the symbol, we find the most complex form of signification. Peirce sees the symbol, in contrast to icon and index, as a sign whose meaning is wholly determined by the rules or conventions which govern its use: "The symbol is connected with its object by virtue of the idea of the symbol-using mind, without which no such connection would exist" (2.299). Symbols are like general terms - they cannot indicate any particular thing, they denote a kind of thing (2.301). "All words, sentences, books and other conventional signs are symbols" (2.292). Symbols are also associated with concepts:

"They come into being by development out of other signs, particularly from icons, or from mixed signs partaking of the nature of icons and symbols. We think only in signs. These mental signs are of mixed nature; the symbol-parts of them are called concepts. If a man makes a new symbol, it is by thoughts involving concepts. So it is only out of symbols that a new symbol can grow. Omne symbolum de symbolo. A symbol, once in being, spreads among the peoples. In use and in experience, its meaning grows. Such words as force, law, wealth, marriage, bear for us very different meanings from those they bore to our barbarous ancestors." (2.302)

As we noticed earlier, some verbal signs, such as demonstratives and personal pronouns, are said to be indices. Although Peirce officially regards all conventional signs as symbols, in practice he usually restricts symbols to propositions or propositional functions. And, again as we saw earlier, indices are necessary (in Peirce's view) to pin down the reference of a proposition. We don't need to enter here into any discussion of Peirce's account of the logic of language and reference, but what is of interest is the distinction that Peirce assumes between icons and indices on the one hand and symbols on the other. Let us consider the
following statement:

"A regular progression of one, two, three may be remarked in the three orders of signs, Icon, Index, Symbol. The Icon has no dynamical connection with the object it represents; it simply happens that its qualities resemble those of that object, and excite analogous sensations in the mind for which it is a likeness. But it really stands unconnected with them. The Index is physically connected with its object; they make an organic pair, but the interpreting mind has nothing to do with connection, except remarking it, after it is established. The symbol is connected with its object by virtue of the idea of the symbol-using mind, without which no such connection would exist." (2.229)

In this passage it is perfectly clear that Peirce regards the icon and the index as being in some way significatory independently of any user - the icon because it 'reminds' the mind of the original in virtue of its resemblance to it, and the index by contiguous association; the symbol, on the other hand, is an arbitrary sign which is known for what it is, just because it has been created or interpreted for that purpose. It is as if Peirce wants to say that the index and icon have some 'natural' (perhaps causal) power to signify, while in the case of the symbol signification arises out of the intention of the user.

At this stage we should notice a distinction between the view that a signifier can be intrinsically significatory and the view that a signifier can signify independently of any user or observer who intends or interprets it as a signifier. The former view - that a signifier is intrinsically significatory - does not entail the latter, the view held implicitly and mistakenly by Locke. To say that a signifier has an intrinsically significatory nature does not mean that signification is achieved without agency, but rather that signification is built into the structure of the sign. What makes something a signifier, rather than just a noise or a mark or some event in a causal sequence etc., is the fact that it is intended or interpreted as such. To say therefore that a signifier is intrinsically significatory is to say that signification is built into the structure of the signifier, and that the structure is dependent on the agent who intends or interprets the signifier. For example, (Peirce's example again) if a gun is fired in the forest and the result is a bullet-mark in the moss on a tree, the bullet-mark exists even if it is never seen, but it is not a sign that the gun has been fired if it is never seen. We can see more clearly that an item's signifier-status depends on how it is used, if we consider how different kinds of
use lead to different levels of signification (or representation). We turn to that consideration now.

4.4 Witting and unwitting use of signifiers

In the following pages I shall be discussing the use of signifiers. In order to avoid possible confusion about terminology it might be helpful to make some preliminary distinctions.

To use a mark, noise, gesture or other sensible (or sensed) item as a signifier is to be a participant in the representational activity. We may be a participant in any of the following ways:

(1) by creating a signifier as a signifier, e.g. by drawing a symbol, or making a gesture, which is intended to convey some information;

(2) by intending some existing thing as a signifier, e.g. "let this stand for that'';

(3) by interpreting something as a signifier, either:

(i) something that someone else intends as a signifier, e.g. a linguistic communication, a milestone, a traffic light etc.;

or

(ii) some 'natural' effect, e.g. footprints in the sand.

But,

(4) responding to something as if to the thing it stands for, but without recognising it as a signifier, (e.g. the cockatoos respond to the 'warning' cry as if to a predator, but do not recognise the sound as a warning) is to use a signifier, but it is not to use something as a signifier.

Some further comments are called for. Notice the fundamental distinction between (1) to (3) on the one hand and (4) on the other. This distinction marks off different kinds of signifiers, and we noticed it first in the discussion of the sentinel cockatoos in Chapter 1. Now it is time to articulate this distinction more clearly.

The claim was made earlier that the sentinel cockatoos' cry could be described as a representation of danger (a signal for flight), because we the observers recognise it as such, even though the birds do not recognise the cry in this way. The difference between us (as, say, language-users) and the birds who simply respond to the cry with flight,
is that the birds use signifiers unwittingly, whereas when we use language as a sign system we do it wittingly. We can say, then, that the birds use a signifier, even though they do not use the sound as a signifier. Our presence as observers gives us a licence to describe the cry as a signifier, and we can say that the birds use the signifiers, because they participate in the representational process - i.e. they respond to the cry as if to danger - even though they do not recognise it as a sign of danger.

To put it another way, an act of signification requires that there be some individual x who responds to some item as if it were another item; and that there by some individual y who intends or interprets the item responded to as a signifier; and x and y may or may not be identical.

In the case of the cockatoos we say that the birds are signifier-users, because we the observers have interpreted the cry as a sign of danger. We can say that the birds respond to the cry as if to a predator, therefore, because we can recognise the cry as a signifier and the birds, in flying away, actually use a signifier (without recognising it as such). But is it true to say that we the observers also use the cry as a signifier - because we interpret it as such? One way of replying to this is to say that we only interpret the cry as a signifier (on the basis of the birds' behaviour), we do not participate in the representational act, therefore we do not use the cry as a signifier.

But if we reply in this way how are we to make a distinction between this case and the example given in (3ii), the footprints in the sand? In the list above, interpreting footprints in the sand as a signifier (a sign that someone has passed by) counted as an example of being a participant in representational activity and thus a user of a signifier. Is there any difference between the case of the footprints in the sand and the cockatoo case?

One obvious difference seems to be that in the cockatoo case there are active participants in the representational activity - the birds themselves - while our role as interpreters seems to be that of mere passive observers. But this is to understate both the representational activity and the role of the observers. That the activity is representational depends on there being two causal relations (a) between the presence of the predator and the cry of the sentinel cockatoo, and (b) between the cry of the sentinel and the flight behaviour of the other birds. Now suppose we have recognised only (a) - either because
there were no other birds present on occasions when we have heard the cry, or because we have not noticed the other birds flying away on previous occasions, or perhaps because though we noticed their flying away we did not link this behaviour to the cry, i.e. we did not recognise the relationship (b). Nevertheless, having recognised (a), we can as observers interpret the cry as a sign of danger, and indeed not merely as danger for the cockatoo but perhaps also for ourselves (if, say, the most common predator is a snake). Given only the relationship (a), therefore, we can say that we are using the cry as a signifier, whether or not we take the cry as a warning for ourselves and act upon it. For so long as we link the cry to the existence of a predator, then when we hear it and think of a predator, we are using it as a signifier. It signifies for us that there is a predator in the vicinity and we recognise that it does so, but this recognition amounts to saying that we are using the cry as a signifier. In this respect there is no difference between this case and that of the footprints in the sand.

But now suppose we know only of the relationship (b): we observe one bird cry and the others fly away. It might seem unreasonable to say either that the birds are using a signifier or that we are using the cry as a signifier. And indeed it is. For we have simply observed a stimulus-response mechanism which is not of itself representational activity. Given, however, that we know (b) as well as (a), then although the situation is different from that in which we know only (a), it does not detract from the representational activity inherent in (a) but rather adds a new dimension to it. For we are now able to say that the other cockatoos respond to the cry as if to the predator and it is therefore a signifier for them even though they do not recognise it as such. But to the extent that we are in a position to licence a description of the responding birds' behaviour as the use of a signifier, to that extent we must be aware of (a) as well as of (b), and hence we may say that we ourselves are using the cry as a signifier simply because we recognise it as a warning. If, however, our focus of interest is on the fact of the birds' behaviour (rather than on what the cry means to us) it may seem that it is with a rather weak sense of 'use' that we apply this word to ourselves - weak, that is, compared with the stronger sense in which we apply it to the birds. This may be so, and if it is, it perhaps reflects the fact that in (b) we are describing the event from the point of view of the birds, who are the primary users. This hesitation, then, that we may have about applying 'use' to ourselves reflects a difference of
emphasis or focus. However, the discussion in the previous three paragraphs, while useful in bringing out the force of 'use of signifiers', does not vitally affect the important points at issue here. The crucial points are the distinction between witting and unwitting use of signifiers, and the fact that although there must be some agent for whom the representation or signification exists, it does not have to be the user of the signifier who recognises it as such. Thus, in what follows animals will often be referred to as 'signal-users', but it should be remembered that the unwitting user of a signal (signifier) is not using it as a signifier.

In the light of these preliminary distinctions let us turn now to Piaget's distinction between 'symbol' and 'signal', which takes as one of its differentia, witting use. Piaget's account has some features in common with Peirce's distinction between index and symbol, but there are important differences in the way that this distinction is worked out.

4.5 Piaget: Symbol and Signal

Piaget makes a distinction between signal, symbol and sign.

A signal is a signifier which is connected in some physical or causal way with what it signifies, for example, a branch hanging over a wall is a signal of the presence of a tree, and the tracks of a rabbit are the signal of its recent passage. The signal is not produced by the subject for whom (or which) it has significance; and perhaps most crucially, a signal cannot be completely separated from what it signifies: it cannot stand for another thing in its absence as a picture can stand for an absent person or a proposition can stand for a past event. The signal must be closely tied, spatio-temporally, to the signified, as the part is to the whole or the tracks are to the rabbit (here the link between signifier and signified is the series of contiguous connections - rabbit, scent of rabbit, rabbit tracks, etc). Use of signals requires only the ability to recognise and respond with appropriate behaviour to particular features of the environment. It is an achievement of which many non-human animals are capable. What entitles us (if anything does) to say that signification is involved in these examples is that the animal responds to something else as if to the thing itself. For example, Pavlov's dogs learned to respond to the sound of the buzzer as if to food. They salivated naturally when they saw or smelled food. After a period of contiguous presentation of food and buzzer, they began to salivate at
the sound of the buzzer alone. When birds hear a particular cry they respond with flight, even though the cry itself is not dangerous, it merely 'represents' danger.  

A further important defining characteristic of the signal is a lack of flexibility. A given signal always elicits the same response - e.g. the warning cry is always followed by flight - the animal cannot choose to withhold the behaviour, or to vary its response. It can only have its behaviour checked by some competing response, or it can sometimes learn over a period of time to modify a particular response.  

On this account of the signal it is clear that we can employ a parsimonious explanation of the signification involved here. A simple S-R learning or genetic encoding type of account is all that is required: a signal acting as a stimulus substitute. We have no need to introduce any talk of 'representational' thinking into the account: 'thinking' is the behavioural response to the signal.  

But now let us compare this account of signals with what Piaget says about symbols and signs. Both symbols and signs are produced by the user with the intention of signification, or produced by one user and interpreted by others. Piaget makes a distinction between sign and symbol thus. Signs are arbitrary, conventional signifiers. Language is the most obvious example but there are others, such as traffic lights, driver's signals and so on. Symbols, on the other hand, have something in common with what Peirce terms an icon - they are not entirely arbitrary, though they may be conventional. There is some characteristic, e.g. resemblance to the thing signified, which determines the form of the signifier. A picture and a map are both examples of symbols, so are (mental) images and imitative behaviour. Piaget recognises that resemblance alone is not sufficient to explain signification. In fact, he makes the assertion that a signifier is only as good as the intelligence which uses it; and the symbol signifies in virtue of the intelligence which constructs it for that purpose. For this reason Piaget puts the symbol on the side of the sign, both differentiated from the signal. In the rest of this discussion, the differences between sign and symbol will not be important: the relevant distinction is between these two and the signal. (But as there is no third word which includes Piaget's two  

1. The difference between the example of the dogs and the example of the cockatoos, i.e. that one is learned behaviour and the other innate, is not important to our concerns here.
As we saw, a signal functions like a stimulus substitute which stands in for the original stimulus and elicits a similar response. There is also a direct and close (spatio-temporal) relation between signifier and signified. This is not so in the case of the symbol: what it signifies may be quite remote in space and time. But notice a further important point which follows from the nature of signal and symbol. The signal has as its signified some physical item or event, some item which is denoted without connotation. But the symbol takes as its signified something that includes **connotation** as well as denotation. We shall return to a discussion of this distinction in 6.3.

It is a further characteristic of the symbol that it can be used flexibly. The signal of the bird's warning cry is always followed by a flight response, but the utterance of the symbol 'Run!' will be followed by flight only where the conditions seem appropriate - a tone of urgency, a dangerous situation, and so on. If the symbol is uttered under different conditions, for example, at a cricket match the interpretation and thus the response will be quite different.

Charles Taylor has discussed the difference between symbol and signal as conceptualised by Piaget. He says:

"Somehow in the course of developing or learning language, 'chair' becomes linked to chairs and 'walk' is linked to walking, but this is utterly different from the way the slap of the beaver's tail on the water is linked to flight behaviour on the part of his companions." (Taylor, 1971, p 404)

If we can find some illuminating way of distinguishing between these two performances we may be able to offer some account of what it is for a symbol to signify. Piaget's claim that a signifier is only as good as the intelligence which uses it seems to be justified. For there is nothing about the purely physical features of a symbol **as such** (as a sound or a mark, etc) which enables it to be used in a different way from a signal. Indeed the same signifier might function either as a symbol or as a signal, according to the user. For example, the following mark \( \Delta \) normally functions as a symbol for humans, who see it **as** a triangle (or 'delta' etc). But to the rat which is conditioned to jump at that mark in order to obtain food it functions as a signal **only**. We have no need to say that the rat sees the triangle **as** a triangle and knows that it
means food. We need only that the rat be trained to behave in a particular way in response to the presentation of a certain stimulus.

In order to get at the nature of the signification of the symbol we need to know what is involved in its use that is not involved in the use of a signal. The characteristic which most marks the difference between symbol and signal seems to be the capacity for disengagement in symbol-use. It is the capacity to be aware of things, as Taylor says,

"outside of any particular transaction with them; it is to be potentially aware of them not just in their behavioural relevance to some activity we are now engaged in, but also in a 'disengaged' way." (p 404)

Disengagement, in fact, holds the promise of being a crucial aspect of representation. This capacity to use signifiers in such a way that a whole world - even though spatio-temporally absent - can be encompassed in a single thought is what marks off representation in its fullest sense from the lesser forms, such as signal use. We move on in Chapters 5 and 6 to the development of this concept of disengagement. But first it would be useful to sum up some of the questions we have examined in this chapter in the light of a comparison of Peirce's and Piaget's division of signifiers.

4.6 Summing up: Piaget, Peirce and Saussure

Ayer comments on Peirce's occasional failure to recognise that iconic and indexical signs stand as much in need of interpretation as any other signs. This applied to Peirce's signs because they are paradigmatically linguistic signs, even though he believes himself to be talking about all kinds of signs - linguistic and non-linguistic. Perhaps it is because Peirce does not clearly distinguish between linguistic and non-linguistic signs that he sometimes makes the mistake that Ayer notices. Although it is true as Ayer says that all linguistic signs, including icons and indices, can function as signifiers only when they are interpreted as signs, the same is not true of signals as defined by Piaget. At the same time Piaget's signals have something in common with Peirce's indices and icons; if Peirce's indices and icons are taken as non-linguistic signs it might be said of them, as of Piaget's signals, that they can signify irrespective of any intention of the user to make something stand for something else and irrespective of any understanding of conventions. Few people (few at
least of those who study animal behaviour) would imagine that the sentinel cockatoo intends its cry as a warning or that the other birds interpret it as a warning or even see any causal connection between the danger and the cry. Yet, in a limited way, we should surely want to say that the cockatoo's cry is a signifier. And we saw the reason for this earlier (1.2, 4.4): because we the observers can interpret the cry as a signal. This, then, is one of the limitations of representation at the level of signal: the signal-user is usually not aware of the signification, and certainly awareness of signification by the user is extraneous to the concept of a signal. 1 Whereas, in the case of the symbol, understanding of the signifying relationship by the user is essential to its being a symbol.

Piaget in his signal/symbol division makes a clear distinction between those things which signify by some causal (spatio-temporal) connection and those which signify by some connection supplied by thought. Peirce does not make this explicit distinction, and he runs these two kinds of connection together, so that he tries to account for the denotation of the index by a merely metaphorical version of what the signal does quite literally. This move is unsuccessful because the kind of connection between signifier and signified which can be supplied by a causal link will not bear the weight of the complex signification of language. We can get a kind of signification out of the causal link, but it is only a very limited kind. Peirce is concerned with human linguistic use of icons and indices, and here thought is already presupposed, because the user does understand the signifying relation. And thought stands in greater need of explanation than the association of 'forcing attention to' or of 'reminding' which Peirce tries to explain in terms of a rather simplistic causal account.

What we find, then, when we look at Peirce's account of indices is an explanation which would be adequate for a certain level of behaviour (simple S-R behaviour), but it is inadequate as an explanation of linguistic signification. In this respect Peirce's causal account has the same sort of inadequacies as Locke's causal account of representation.

What has emerged from this consideration of the semiotic theories of Saussure, Peirce and Piaget is that there are broadly speaking two main

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1. I say 'usually', because there are of course cases of human use of signals, for example the 'startle-response' to a sudden loud noise, where we can in retrospect be aware of the fact that the noise has functioned as a signal. But this knowledge has nothing to do with its being a signal.
groups of signifiers:

1. Those which are wittingly used, that is, intended and recognised as signifiers by the users;

2. Those which are unwittingly used, that is, we can say that they function as signifiers because we can see this but the users cannot.

Obviously there are different levels of representation involved here, and it is the first group which is of most interest, because it is here that we find representation in the full sense of the word. The other group is of interest mainly in showing what else is needed in order that we have representation in the full sense of the word. One of the most important questions which has arisen in this chapter concerns the problem of what it is that establishes the signifying relation. The suggestion has been made that signification is built into the structure of the signifier, and that the structure is in some way related to how the signifier is used and to the capacity of the user. Finally, we came to the notion of disengagement as a crucial differentia of capacities for representation. It is time now to go further into this topic.
CHAPTER FIVE

DISENGAGEMENT (1): THE PREPARATION

5.0 Introduction

Chapter 4 introduced the notion of 'diseengagement' in the context of Taylor's comparison of the performances involved in symbol-use and signal-use respectively. Taylor sees language "as the major vehicle of this capacity to grasp things in a disengaged way" (Taylor, 1971, p 404).

"Language permits us to do more than achieve disengaged awareness of a particular set of contents; it is a general capacity which makes us capable of describing (and hence disengaging our awareness of) new things, of describing and hence evoking awareness of things that are not present or that may not exist. Language is a capacity which permits us to put finite means to infinite ends, to paraphrase von Humboldt." (Taylor, 1971, p 405)

But there is something wrong, I think, with Taylor's analysis of the relationship between language and disengagement. The implication of Taylor's remarks is that language is what makes disengagement possible. Language gives us something which 'stands for' or 'represents' something else and enables us to refer to, to think about things in their absence. Language, then, is the tool which has enabled human intelligence to diverge so sharply from other animal intelligence. What is involved here supposedly is the use of some kind of signifier to stand in for objects and events in the world. Once we have these signifiers, it may be thought, we have the means to talk about things. But as we have seen already, many animals do have the use of signifiers - only they are unable to use them in the same way as humans are, for example, as language. Signal-using species (except perhaps the other primates) never graduate to being symbol-users, even though they do use signifiers to represent other objects. Signals act as substitutes for objects and events in only a very limited way. And this fact suggests that something more is needed than a signifier as a tool. Some extra capacity is required before signifiers can be used as symbols and as language.

Taylor is right in thinking that there is a connection between language and disengagement, but surely wrong in thinking that the relationship between language and disengagement is quite as straightforward as he suggests. A more promising solution to this problem is that language and disengagement proceed hand-in-hand. This is the solution suggested by
Piaget's account of a case where signal-users do graduate into symbol-users. Luckily this case is very neatly set out for us in the human species. The 'sensory-motor' infant is roughly on a par with the non-human higher mammals, and is therefore a signal-user. Piaget's studies of the transition from this stage of signal-use to the stage of full human capacity for representation can provide us with some fruitful insights. In this chapter and the next we shall look at Piaget's account of how the sensory-motor infant which is tied to the 'here-and-now' gradually become transformed into a disengaged adult capable of representation in its fullest sense.

This chapter will deal with Piaget's developmental account of the growth of intelligence and with the mechanisms of that development. The importance of this theory to the subject of representation lies in Piaget's claim that the sensory-motor infant in the course of its interaction with the environment builds up 'schemes' of behaviour which link one kind of response with many similar situations. Disengagement from any particular context arises out of a capacity to relate an item to many other items. And this the child does first of all behaviourally, in its actions. The infant builds up a network of co-ordinated and hierarchically-organised schemes which, in a sense, categorise the world. Behaviourally at least, it can discriminate and generalise; it can make connections between groups of items which may be dissociated in time and space. But this is not yet disengagement, and will not be so until the child can recognise these schemes for what they are, and then has the power by means of them to evoke the past and the future and the non-existent at will, in thought alone. This capacity, claims Piaget, is the crucial element in representation; and he sees the period of sensory-motor engagement with the world in a variety of ways as the indispensable foundation of the capacity to make connections in conceptual schemes.

In this chapter then we shall deal with Piaget's account of the development of these schemes and in particular the transition from sensory-motor activity to conceptual processes. In Chapter 6 we shall be concerned more directly with the relationship of these schemes to representational activity.
5.1 The developmental stages

Piaget sees true representation, by which he means the capacity for disengagement, as being a crucial differentia between sensory-motor (infant) intelligence and adult intelligence. He sees the capacity for disengagement as making possible the learning of language, but the way that this comes about is by means of a series of interlocking steps.

About representation, Piaget says:

"In its broad sense, representation is identical with thought, i.e. with all intelligence which is based on a system of concepts or mental schemes and not merely on perceptions and actions" [as sensory-motor intelligence is]. (Piaget, 1962, p 67)

Thought for Piaget means activity. At the sensory-motor level it is the physical activity of the organism in interaction with the physical environment. At the adult level thought is the activity of the intellect in interaction with the physical, social, intellectual, and above all conceptual environment.

Knowledge in its broadest sense, according to Piaget, is the activity of knowing which takes place when an organism interacts adaptively with its environment. Activity, as we can see, is an important concept in his theory. His thesis is stronger than the view that knowledge is merely the result of action, that it is the product of a process of learning, or the object of an act of thinking. Because on this view it would still be possible to say that knowledge itself is inert, even though it is the result of action. Knowledge in Piaget's theory cannot be something which is stored in the mind; and here he makes a distinction between knowledge and information. Information can be stored. But what transforms stored information into knowledge is activity: first, at the earliest level, overt sensory-motor behavioural activity; and later the activity, or operations of intelligence. In Piaget's view to know a thing or to have a concept about it is to have carried out transformations (ultimately mental transformations) on that thing. For example, consider the following task presented to a seven-year-old child. He is shown two identical balls of clay and asked whether they weigh the same. After the child's judgment of equality, one of the balls is transformed, in the child's presence, into different shapes. The child is then asked again if the two pieces weigh the same. The child who has grasped the concept of conservation has the ability to carry out internal transformations which could be expressed in words like "This dough is longer but thinner" or
"One could press it back into the first shape". In this notion of concepts being understood through the activity of transformations or operations there are obvious affinities with the Kantian doctrine that to have a concept is to have a certain sort of skill, to have the ability, for example, to apply 'concept' words 'appropriately'. In his Analytic of Concepts, Kant sees the relationship between concepts and judgements as being such that to have a given concept one must be able to use it in judgements. Knowledge "yielded by understanding" must be, he says, by means of concepts, and "the only use which the understanding can make of these concepts is to judge by means of them". (Kant, 1963, B93). For Kant, the activity which is implied by the having of concepts is a linguistic or intellectual activity; but for Piaget, linguistic activity is preceded by physical operations - engagement with concrete activities.

A second broad theme in Piaget's theory is the developmental nature of knowledge and intelligence: the later, more 'adequate' forms of knowledge develop out of earlier, less adequate forms of knowledge. The capacity to know the truth of a proposition, the capacity of the most abstract forms of thought - all of these forms of knowledge, Piaget claims, can be traced back to their genesis in early motor skills. Without these earlier forms of knowledge, the later forms could not arise.

Piaget divides the human developmental process into three main periods. Although the process of development is a continuous one, there are certain periods when a cluster of capacities jointly reach their fullest form. At these periods the child makes a leap forward into another stage of development, and the change in capacity appears to be so marked that the whole developmental process might be thought of as a series of discontinuities. But this would be a mistake, says Piaget, since the continuity of development can be clearly traced. The stages are "structurally dissimilar", because for example in the sensory-motor stage 'thinking' is identical with sense perception and motor activity, while in the operational stage thinking is bound up with the possession and exercise of fully-fledged concepts. But in spite of this structural dissimilarity, development is functionally continuous (Piaget, 1962, p 238).

Each stage has a character or essence which distinguishes it from the other two, yet each succeeding stage incorporates the previous

1. The example is Hans Furth's, based on the well-known conservation tasks of Piaget and his associates. (Furth, 1969, pp 213/5).
one in a higher synthesis. For example, the child at the middle stage is able to think about the world through the language of arithmetic. But at the final stage of development, the adolescent can handle those same aspects of the world at the more abstract level of algebra.

The three main stages are:

The sensory-motor stage (which occupies approximately the first 18 months). In this period, which is also described by Piaget as the stage of practical intelligence, the infant is able to interact with its environment only through direct sensory input and motor action. It does not yet have the capacity for language or any other symbolic function. It cannot engage in reflective thinking, or think about those aspects of the world which are not present - it can respond only to what is here and now. This does not mean, of course, that the infant does not have memory. But it is memory without cognitive content. The infant itself does not have anything like a thought about the past; it simply responds to present objects or events according to patterns that it has learnt in the past. Piaget says that the very young infant cannot discriminate between its own actions and the external world. And what he means by this statement is that even the possibility of such a discrimination - between its own actions and the external world - is not open to an individual which has no reflective thought or capacity to think about what is absent.

There are some noticeable parallels here between the capacities of the sensory-motor infant and the capacities of the higher mammals. A horse which can 'remember' the way home does not have to carry around in its head the memory content of a cognitive map. All that is necessary is that it behaves in the appropriate way at every choice point on the route: it has to respond to present conditions according to patterns that are instinctive or that it has learnt in the past.

The concrete operational stage (which occupies the period from approximately 1½ to 11 or 12 years), is usually divided into the pre-operational and operational periods, the former being characterised by a gradual transition from the sensory-motor level to the beginnings of adult thinking. The child develops language and the use of other symbols and begins to acquire understanding - at a concrete level - of concepts such as causality, conservation, classification. These concepts are fully developed by about the age of seven, when the child becomes operational in the full sense. A concrete operation implies underlying general systems or 'groupings' such as classification, seriation, number. But note that at this stage the
child is limited to the concrete world in his application of these operations. For example, he can successfully sort objects into a two-way classification (blocks by colour and shape) but he cannot yet deal with formal classification systems.

The formal operational stage (which develops between the ages of about 11 or 12 and 14 or 15) is marked by the emergence of abstract and formal thought operations. This final stage will not be of concern to us here.

So much for a brief outline of Piaget's framework. The importance of these developmental stages to our present concerns arises out of the idea of the sensory-motor stage and the operational stage as different levels of representational capacity. As we can see, the sensory-motor infant has the capacity of a signal-user, while the operational stage produces the capacity for symbol use. And there is further interest for us in the fact that the second stage emerges out of the purely sensory-motor capacities of the first. The way that this is said to occur provides some insight into the interlocking relationship between language and disengagement.

5.2 Assimilation and accommodation

Piaget rejects both innatist and classical learning theory accounts of how knowledge and intellectual capacities develop. An innatist account faces the problem of showing how the mind can contain in advance the essential forms of language and reason (Piaget, 1972, p 56). And a learning theory account faces the equally difficult problem of showing how it is that the organism selectively responds to a very limited range of stimuli.

To replace the classic alternatives of innatism and learning theory Piaget has proposed a theory of developing 'structures' (systems). At birth the infant possesses a set of very simple structures; they are associated with simple reflex behaviour such as sucking and crying. These structures organise knowing and behaving (which at the earliest stages are identical), and they gradually increase in complexity by the reciprocal processes of assimilation and accommodation.

By 'assimilation' Piaget means the tendency of an organism to incorporate new information into its existing structure; but the act of incorporation itself transforms the structure. This more adequate structure opens up fresh aspects of the environment, aspects which previously had no meaning for the organism. So, as we can see, there is a continuous
spiralling interaction between the organism and the environment. The organism can make use of only those aspects of the environment which have 'meaning', and what has meaning is a function of the knowing structures of the organism. Some examples may help here.

Consider the case of a baby who has the ability to grasp things in its environment. Piaget would account for this by saying that the baby has a sensory-motor scheme of grasping. This grasping scheme functions by assimilating a great variety of external things to itself; in other words, the baby grasps and handles many different things. What these things have in common is that they are amenable to grasping, even though they may be different in shape, colour, size and so on. If the thing or the event could not be assimilated (because the structures of the organism were inadequate), it would not constitute a stimulus. Underlying structures determine what organisms perceive. Thus an arrangement of sticks serially ordered according to length does not exist — as a series — for the four-year-old child who cannot grasp the notion of seriation. But an eight-year-old assimilates this seriation readily, and can recall it correctly after a considerable lapse of time.

Assimilation, then, is the process whereby structures are enriched by new information about the environment. 'Accommodation', on the other hand, refers to the application of structures to particulars in the environment. Another way of understanding accommodation is to think of the structures as being general forms or rules or statements which have as their extension all the particular cases of, say, things to be grasped. To accommodate to a particular case is to recognise it as belonging to the extension of things to be grasped, and to make the appropriate actions.

Every interaction between an organism and the environment contains both assimilative and accommodative aspects. In the early part of each of the developmental stages the two processes are constantly tugging in different directions. The resolution of the disequilibrium between assimilation and accommodation leads to a leap forward into the next developmental stage. Thus concept development proceeds in a lock-step fashion, empirical experience being assimilated to the concept, but underlying conceptual structures, in turn, determining what is experienced.

1. The word 'scheme' (instead of 'structure') is often used by Piaget and Furth in discussion of the sensory-motor stage. Schemes at this level are co-ordinated into higher order structures.
2. This is where Piaget's theory departs significantly from SR theories: he gives an account of why an organism should respond selectively to certain stimuli.
At this point an interesting comparison can be made between Piaget's views, and Plato's account of the relationship between knowledge and perception, and the relationship between the universal forms and their instantiations. Plato argues that we can never learn to know the forms as a result of empirical observations. Induction can never give us ultimate insight. For perception of a quality presupposes knowledge of it. For example, without the concept of equality how could we recognise the equality of two logs? In order to solve this problem Plato introduced the doctrine of 'recollection'. We possess the knowledge of the forms in our souls, and we manage to recollect this knowledge by means of empirical experience - reminders, as it were. Here also we find the view that only that which has meaning can be perceived, and that empirical experience is necessary in order to realise the capacity for knowledge. Piaget's account offers a plausible unpacking of Plato's recollection metaphor. The account shows how what we know determines what we perceive; and it gives sense to the apparent paradox that we can only learn or acquire knowledge or develop intelligence as a result of empirical experience (for Piaget, the experience of our own actions), and yet that empirical experience is dependent on what we know.

But there is a difference between the two accounts of knowledge. And Piaget's, in some respects, seems to take us further than Plato's. As we saw earlier, Piaget rejects the idea that we possess knowledge innately (if unrealised), and he demonstrates how the process of knowing proceeds in a lock-step fashion. He also rejects Plato's ontology of universal forms - universal timeless principles. Plato thought of the forms as something existing in the world independently of any human mind, although the human mind could aspire to know the forms. Piaget argues that the principles by which we order our perceptual experience are constructed by the activity of the mind. They are inherent in our act of experiencing the world: they are not entities which can be separated from that act. On this point Piaget's view closely resembles that of Merleau-Ponty, whose central theme in Phenomenology of Perception is that we structure our experience of the world by our bodily activity and interaction with our environment.

1. "Hence before we ever began to see or hear or otherwise perceive things we must, it seems, have possessed knowledge of the quality itself, if we were going to refer the equal things of our sense-perceptions to the standard conceiving that all such objects are doing their best to resemble it, yet are in fact inferior to it." Phaedo, 75b. And, of course, a similar problem occurs for Kant, whose influence is clearly apparent in Piaget's discussion of the categories of thought, though as we shall see Piaget's solution is not the same as Kant's.
Piaget thus gives us an account of how the forms can have reality without having to postulate a special kind of ontological entity. Piaget agrees with Plato that not only do the forms exist, but that they really are formal structures which are used to organise and categorise reality. They really are something 'brought to' experience, but at the same time they are derived from experience. 1 They are (always for Piaget, and in the later dialogues for Plato also) the product of a developmental sequence: each 'form' (or structure) can be explained in terms of a previous structure combined with episodes of empirical interaction with the environment. But what happens when we pursue this regress of each structure being explained by a previous structure? Plato gives two accounts of the origin of knowledge: in the Phaedo and the Meno he says that the mind must already know everything that it can come to understand; in the Republic he dispenses with the doctrine of the soul's pre-existence, and replaces it with the primordial form of goodness which is the source of the intelligibility of all the other forms. But in either case Plato has to fall back on an unexplained item, of the same kind as the rest of the chain, in order to end his regress of explanation. In Piaget, on the other hand, there comes a stage in the regress where we do not have to explain the understanding of one form in terms of the understanding of an earlier form or, to put it in Piagetian terms, the acquisition of one structure of thought by the possession of an earlier structure of thought. Because what the developmental history runs to ground is not ultimately thought, but action, i.e. sensory-motor schemes. So the regression ends with an explanation of a different type.

We might at this point also make a comparison between Piaget and Kant since, as we noted earlier, there are clear affinities between Piaget's structures and Kantian categories and schemata. Certain ideas and principles, for example, our notions of time, space, cause, substance, self, etc., cannot be justified or explained by appeal to any empirical data. Nor, in fact, are there any kinds of realities (such as Platonic forms) answering to these ideas. It is rather that certain ways of structuring our experience are simply presupposed by any conception of empirical experience. But Kant (in this respect, at least, like Plato and, of course, like Piaget) also maintains that these ideas and principles, these constraints on our experience, are fertile only when

1. There are also obvious affinities between Piaget and Aquinas' account of the species by means of which we reach understanding and which are acquired through experience.
they are applied to the empirical world. So Piaget shares with both Kant and Plato the view that we can account for our knowledge and understanding only by bringing into the account some sort of interaction between the structuring activity of the mind and empirical experience. But where Piaget differs from Kant, as he does from Plato, is in his account of how we come to possess these structuring principles. ¹ In the Critique of Pure Reason Kant attempts to show that these principles are implicit in our experience, that even the minimal empiricist conception of experience is incoherent in isolation; that it makes sense only within a large framework which necessarily includes the use and application in experience of concepts of an objective world. As Strawson puts it:

"Any philosopher who invites, or challenges, us to justify our belief in the outward world by working outwards, as it were, from the private data of individual consciousness, thereby demonstrates his failure to have grasped the conditions of the possibility of experience in general." (Strawson, 1966, p 19)

These principles and ideas which we bring to our experience are simply a characteristic of human reason without which we could make no sense of the flux of our experience.

Much of this comes close to what Piaget maintains about the application of structuring principles to what we experience, for example, his observation that the infant perceives according to its assimilated schemes. But Piaget takes issue with Kant, as with Plato, on the claim that these principles are a fundamental characteristic of human reason. If it were as simple as this hypothesis suggests, why is it, Piaget asks, that the child does not display these characteristics of reason much earlier? For instance, the notion of conservation of quantity.

"Why does it take a child about five years after the acquisition of the needed vocabulary to recognise that the amount of water poured from a wide into a narrow container has not changed? All he has to say is 'same', a simple word that he has used frequently. Yet one will not find a single two-year-, three-year-, or four-year-old, and hardly a five-year-old who will not deny that the two containers have the same amount. After eight years of age there will not be many who will not immediately, as a matter of course, assert equality." (Furth, 1969, p 225)

¹. Piaget also diverges from Kant on other matters, including the fundamental question of the status of the world that is known - for Kant, only the phenomena, not the noumena.
No special experience is needed to acquire conservation judgement of quantity, but no special experience suffices to teach it before the appropriate time. To meet the demands of explaining this paradoxical situation— which, on Plato's and Kant's accounts, ought not to arise—Piaget gives his own account in terms of the developmental nature of structures.

Piaget's account, then, if successful seems to provide a workable Platonism, and to meet some of the problems of Kantian epistemology. But does the account actually go through? There seem to be some problems. One concerns the manner in which the developmental sequence proceeds via assimilation and accommodation. It might be asked how it is that sensory-motor schemes can be applied to some things and yet not to others, and what it is that makes the scheme grow richer as a result of its use in interaction with the environment. In the early stages there is a tendency for schemes to be applied to other than their 'proper' objects. For example, the infant will first try to suck any object that touches its mouth; only later will it show finer discrimination in the application of the sucking reflex, and 'recognise' the proper objects of sucking.

Piaget's explanation might be cast into the following sequence:

(i) a sensory-motor scheme assimilates a variety of things to itself;
(ii) assimilation encounters some obstacle;
(iii) the sensory-motor scheme becomes richer in order to assimilate this obstacle.

We might then ask for some positive account of the transition between steps (i) and (ii), and between (ii) and (iii). For a sensory-motor scheme either works with respect to something, or else it does not work. But, in the latter case, why should it matter that the scheme does not work? Why, for example, should the child respond to its failure to grasp something—say, because it is spherical and polished—with renewed attempts, any more than it responds to its failure to grasp a sunbeam with repeated attempts?

But this objection reveals the inadequacy of the above reconstruction of Piaget's account. We have overlooked the role of accommodation. What Piaget says is not that the scheme will be applied to anything, or to things at random. But that it is applied only to those things which have 'meaning', that is, which are perceived as falling within the scope of the scheme. In fact Piaget goes further...
than this, he says that a thing which does not fall within the scope of a scheme is not perceived (e.g. the four-year-old and the seriation example). For a thing to have meaning is for it to be perceived, and for a thing to be perceived is for it to have meaning. And all of this is the role of accommodation. Schemes are developed by assimilation: accommodation (at sensory-motor level) is the perception of the world through the perceptual 'grid' of those schemes. The infant 'notices' those sensory characteristics of an object which are relevant in terms of its schemes. For example, the perceptual 'grid' of the grasping scheme will allow the infant to 'notice' objects which appear small enough to fit into its hand and to be separable from the surrounding environment. When the infant applies the grasping scheme to the polished sphere and to the sunbeam, both of these have the meaning 'thing to be grasped', and as a result of successive events like these, further perceptual schemes are introduced which discriminate between patches of light and three-dimensional objects. The infant is encouraged to persevere with the polished sphere just because he has partial success in grasping it: his hand is able to make contact with it, unlike his attempt with the sunbeam. Perception becomes finer in discrimination as a result of these actions, and the application and resulting modification of the sensory-motor schemes.

What is important about this process of assimilation and accommodation, is that it combines discrimination (assimilation) and generalisation (accommodation). The infant begins with very general schemes which it accommodates to particulars in the environment. As a result of these accommodations, and the assimilated data, the schemes become more complex, with more branching of hierarchies, and nested schemes; and not only do more schemes develop but they develop more inter-connections with other schemes. For example, in the early stages, the senses are unco-ordinated. Hand and eye function independently: what the hand 'knows' cannot be transmitted to the eye, so hand and eye must function independently. Later these separate schemes for hand and eye become linked, and the intersection of the schemes leads to finer discriminations. We can see how this developmental pattern takes place by considering once more the infant and the sunbeam. Initially the infant will grasp only what comes into contact with its hand; it will not stretch its hand to reach an object which can be seen. Only later as the schemes begin to connect will it respond to the sight of an object by trying to grasp it, but in the early stages of the co-ordination of
the schemes, the information from hand and eye is not fully 'pooled'. The eye sees a sunbeam as something to be grasped, the hand makes the attempt and fails completely. Gradually this feed-back is transmitted to the eye, and finally the sunbeam is no longer perceived as something to be grasped. In the case of the polished sphere, the feed-back from partial success with the hand is gradually pooled with feed-back from the eye, until the grasping action is successfully carried out, and the polished sphere is perceived as something to be grasped.

This example of the infant's grasping action being finally applied successfully to 'proper' objects is also an example of what Piaget calls 'equilibration' between assimilation and accommodation. When there is a primacy of assimilation the infant will 'exercise' its grasping schemes in isolation from any context - just making grasping gestures. When there is a primacy of accommodation the child will apply the schemes to inappropriate objects. But when equilibration has been reached the infant not only exercises the schemes but also applies them appropriately. And this is the moment when the infant makes what seems a leap forward into the next stage of learning. The characterising feature of the transition from the sensory-motor stage into the operational stage is an equilibration in a wide range of behaviours. It is at this transition, says Piaget, that although the stages are functionally continuous they are structurally dissimilar, for there are fundamental differences between sensory-motor intelligence and conceptual intelligence. The connections established by sensory-motor intelligence link only successive perceptions and movements, without an overall representation linking the actions, separated in time, and surveying them all simultaneously. For example, when the sensory-motor child is searching for a lost object it will look beneath a cloth if the object disappeared under the cloth, but the child will continue to search in the same place under the cloth even when it has seen the object disappear in a different place. So, for the child, the only relationship is between successive movements, there is no representation of the system as a whole. Piaget comments:

"Sensory-motor intelligence thus functions like a slow motion film, representing one static image after another instead of achieving a fusion of the images. Consequently, sensory-motor intelligence aims at success and not at truth; it finds its satisfaction in the achievement of the practical aim pursued, and not in recognition...or explanation. It is an intelligence which is only 'lived'...and not thought." (Piaget, 1962, p 238)
When the child reaches the operational level, new structures are formed alongside the sensory-motor schemes. The connections and interconnections that had previously been formed only at a practical level are now repeated analogously in thought. The schemes of sensory-motor intelligence are not concepts, because they cannot be handled in thought, they can only be expressed in action. The child cannot know of the existence of the schemes qua schemes because it does not have the necessary semiotic apparatus for designating them and grasping them in consciousness (Piaget, 1972, p 25). But all this changes at the operational level when the child gains conscious access to its own schemes.

This transition from having schemes which can merely be evoked by a number of different objects and events of related natures to actually grasping the connection between these related items is of the utmost significance not only in the development of the child, but also in its implications for our understanding of disengagement and representation. One way of understanding disengagement is as both possessing schemes for actions and knowing that one possesses them, plus the capacity that comes with that knowledge, of bringing the schemes into play at will. Piaget discusses the development of this capacity, and refers to it by a term which Furth translates as 'interiorisation'.

5.3 Interiorisation: the gateway to possible worlds

Interiorisation might be described very roughly as the progressive distancing of intellectual operations from particular objects and events in the world, or to put it another way, it is an increasing dissociation of a general form from a particular content. Piaget discusses both internalisation and interiorisation. Although he uses the same word (intérieuriser) for both processes he makes a clear distinction between the two uses. Internalisation is to make something covert that was overt, for example, symbols such as images arise from the internalisation of accommodated external actions such as gestural imitations. But the process of interiorisation relates to the development of structures, and these are not the kind of thing that ever could be external (or spatially located) and then become internalised.

1. I shall discuss later (in Chapter 7) the rather puzzling question of how an image can be 'internalised'.
I said earlier that assimilation and accommodation lead to ever-increasing generalisation of structures. There is also an interlocking of structures, as a particular action or event is assimilated to more than one structure. As a result of this increasing generalisation, concepts become detached from particular external acts. At the sensory-motor level, as we saw earlier, the only way an infant can know a thing is to react to it in an adaptive manner.

A baby can 'think' of a bell only when he has the bell in his hands, in his ears, in his eyes (Furth, 1969, p 58). At this stage the various motor activities are not yet co-ordinated. Structures for hand and eye are still separate, and the infant's hand cannot act on what his eye can see.

As the structures develop the infant gradually becomes aware of the extensions of the classes to which any particular object or event belongs (Piaget, 1972, p 29). And thus finally becomes aware of the structures themselves. The child begins, first at the behavioural level, to employ the quantifiers, 'all', 'none', 'some'. Past and future, as well as present, become accessible. Another consequence of this development is that the infant has access to possibility as well as to actuality. Significantly at this stage the child can withhold action. He can think without doing. He can choose not to act. We could make some comparisons here with animal behaviour. Most animals cannot, I think, be said to choose not to act. They may have a response arrested by some competing response, but that is a different matter.

Interiorisation is derived from actions, but it is not to be confused with the internalisation of any particular action. On the contrary, internal structures are developed which, we might say, correspond to universal statements, as an accompaniment to particular actions. For example, the four- or five-year-old child is able by itself to follow the path from A(home) to B(school) perfectly well. The path is guided by the recognition of perceptual indices (or signals). But to represent to oneself such a system would involve translating the sequence into a set of elements occurring simultaneously, and this the child cannot do. It is unable to depict the route AB by means of experimental material representing the particular landmarks named (buildings etc.) (Piaget, 1972, p 26). But as the co-ordination of these actions - walking from A to B, and of walking from B to A - is interiorised, the child begins to develop a structure of the relationship AB. This structure finally allows the child to be able to represent conceptually the movement AB, and to achieve what Piaget calls
'reversibility', to understand without having to make the physical journey that the distance BA is exactly the same as the distance AB. Let us look again at the difference between internalisation and interiorisation. What the child represents in what Piaget calls this 'structure of knowing' is not a picture of some entity, or even of the phenomenal appearance of the route AB, but an understanding of a system of relationships between actions separated in space and time. The understanding of which gives the child the power to manipulate those relationships in thought, to imagine the consequences, and the 'undoing' of various actions. All of this capacity, claims Piaget, has its roots in the sensory-motor actions themselves.

Now, we may well ask, even if this is all true as a matter of fact, what precisely has it to do with disengagement, with semiotics, or with representation? The answer should become clearer as we move on. So far we have been concerned with some general aspects of Piaget's theory of knowledge, as a way of preparing the ground for understanding his theory of symbolic representation, with its crucial characteristic of disengagement. To sum up these last few pages let us say that interiorisation, by the development of increasingly general structures, and structures of thought, leads to the separation of thought from any particular here and now. In the next chapter we shall see how all this bears on disengagement and representation.
CHAPTER SIX

DISENGAGEMENT (2): THE SEMIOTIC FUNCTION

6.0 Introduction

Chapter 5 was introduced by the suggestion that true representation is the crucial differentia between sensory-motor and operational intelligence. Also that what distinguishes 'true' representation from lesser forms as in say signal-use is the capacity to be disengaged from the immediate here-and-now, the capacity to be aware of things in a general way, apart from any particular given context. The sensory-motor infant lays down schemes of actions which connect a variety of objects and events across time and space. And this is part of what is involved in disengagement, because if we want to get away from particular to general statements we need a number of like instances which can be described by the one statement. But so far we have an account only of how the connections are established between the actions. We have not yet dealt with how the child is able to recognise the schemes for what they are and describe things in terms of them. And it is not until the child had conscious access to these schemes that it can be said to be genuinely disengaged.

This transitional process is described in some detail by Piaget in his account of representation in Play, Dreams and Imitation in Childhood. What Piaget suggests here is that the 'system of meanings' involved in conceptual representation has its origins in the sensory-motor action schemes. Conceptual structures have their origins in the earlier action schemes, which undergo certain 'transformations' during the developmental process. Imitation - the child's overt behavioural representation of other things - is the central feature of this account of the means by which the child gains conscious and explicit access to its action schemes.

In this chapter we shall begin with an introduction to the concepts of play and imitation and of their part in the child's progress from signal-user to symbol-user. In section 6.2 we shall examine the adequacy of some of Piaget's claims about representation. Finally in section 6.3 in the light of what emerges from the study of disengagement we shall return to a consideration of signifiers.
6.1 From signal to symbol, via play and imitation

At the sensory-motor level the signifier is inseparable from the signified. The child can make use only of signals. What Piaget calls 'meaning' is at this level no more than the schemes which are evoked by the object, for example a rattle evokes the response and the schemes for grasping. This connects the rattle with other things to be grasped - bottle, ball etc. But at this level there is no 'conscious' articulated meaning. Earlier objects and events affect present objects only implicitly, through the intermediary of a scheme of action. So for two things to have the same meaning is to react to them in the same way. Signifiers thus become all important: they allow evocation of past objects and schemes. A primitive kind of representation occurs in the form of a union of signifiers with a system of 'meanings' (Piaget, 1951, p 277). But this representation remains at a primitive level as long as the infant has no conscious awareness of what it is able to represent, and the fact that it can represent.

As Taylor recognises, language supremely has the function of making it possible to talk about these structures as structures. But what is it that enables the child to graduate from signal-user to symbol-user? And why is it that other animals cannot make use of their signifiers in a communal way to develop a language? Many of the other mammals are herd and social animals, after all. So what more does it take, than a signifier and a social community of users, in order to develop a language?

Piaget believes that he has the answer to this question. True representation (including language) begins when the signifier becomes detached from the signified. In Play, Dreams and Imitation in Childhood (the original French version more appropriately has as its main title, La Formation du Symbole), he sees this detachment occurring as part of the process of assimilation, accommodation and equilibrium, which he applies this time to play and imitation in the infant.

Play and imitation are two aspects of the same basic function - representation. Play occurs when there is a primacy of assimilation over accommodation. In this case the child exercises the sensory-motor schemes 'just for their own sake' (Piaget, 1951, p 276), for example the child will swing a spoon for fun, or it will assimilate all sorts of things to its own schemes: a box becomes not a container, but a bed or a table or a chair. Imitation occurs when there is a primacy of accommodation over
assimilation. Then the child is aware of the perceptual characteristics of objects in isolation from the assimilated schemes which should determine the appropriateness or otherwise of responding to perceptual characteristics. For example, Piaget's daughter Jacqueline witnessed a tantrum thrown by another child. The next day she performed an imitation of the tantrum. The context and Jacqueline's behaviour made it clear that the tantrum was not an expression of her own feelings at the time. Rather it was her imitation of the scene which had occurred the day before.

Piaget claims that imitation must precede, developmentally, imagery or any other form of representational recall. In fact, he sees imitation as being this crucial link between sensory-motor and operational (or conceptual) recall. The state of affairs for the sensory-motor infant is that it has memory without content, or rather without conscious access to that content. Because the infant as yet lacks representational thought, it is unaware of the extension of its action schemes. It is in fact altogether unaware of the existence of such schemes qua schemes, since it lacks the apparatus for designating them and grasping them in consciousness. Present situations - for example, something (a rattle) which can be grasped - do not evoke earlier situations (other things which could be grasped). Present situations merely involve the perceptual recognition of certain characteristics which then give rise to the same actions as did the earlier situations.

"In other words, assimilation in terms of schemes certainly takes account of the properties of objects, but only at the moment of their perception and in a manner not differentiated from the actions of the subject to which they correspond (except in certain causal situations in which the predicted actions are those of the objects themselves, actions which are attributed to them by analogy with those of the subject). The important epistemological distinction between the two forms of assimilation by sensory-motor schemes and by concepts is therefore that the first still inadequately differentiates the properties of the object from those of the actions of the subject relative to these objects; whereas the second concerns simply objects, but absent as well as present ones, and thus at once forces the subject from his dependency on the present situation in giving him the ability to classify, serialize, set up correspondences, etc., with much greater flexibility and freedom."

(Piaget, 1972, p 29)

How is the infant to gain conscious access to its action schemes, to recognise them as schemes, to move from the sensory-motor to the conceptual? The child cannot yet summon up something in memory or thought,
just because the signifier is linked to the signified. What is needed is for this link to be severed so that a present signifier can summon up some past or future or absent signified.

Imitation, claims Piaget, is the means of severing this link between signifier and signified. Notice that this claim— that the child by his action can provide a model of a past event— does not commit Piaget to the further claim that the child must first be able to summon up in thought some earlier event and only then reproduce it. On the contrary, as with any other action at the sensory-motor level, the child simply responds to some present cue and exercises its schemes; but in exercising the schemes inappropriately in this case, the child provides itself with a signifier. In case it is not clear what is being suggested here, a reminder about what is involved in imitation may be needed. Imitation occurs as we saw earlier, when there is a primacy of accommodation over assimilation. The child's attention is drawn to some perceptual characteristics of a situation on which it ‘centres’, ignoring other relevant characteristics, and in isolation from its assimilated schemes which should determine the appropriateness or otherwise of responding to just those perceptual characteristics.

Thus, Jacqueline was triggered into the tantrum routine inappropriately (because she was not angry and frustrated). Then having gone through this action which was 'called into being' without prior thought, the child is able to use this piece of behaviour as a signifier which not only evokes the past, but also provides the means for thinking about the past. And thus Piaget sees imitation as being the first form of true representation.

Later the child is able to 'internalise' imitation in the form of imagery or the recall of phenomenal, perceptual characteristics by thought alone, without having to perform the action of imitation. When the child reaches the stage of equilibrium between assimilation and accommodation, between play and imitation, it becomes able both to exercise schemes appropriately and to reproduce past scenes appropriately and at will. At this stage play and imitation begin to overlap with the beginnings of spoken language, until at the adult level language becomes the primary means of access to the not-present— providing the means of talking about structures as well as merely employing them.

Drawings and gestures perform a function similar to imitation. At this point it may be objected that some other animals, other than
human, have the power of imitation. It is not clear that most of these cases qualify as genuine imitation. For example, it is unlikely that most animals are capable of deferred imitation, corresponding to Jacqueline's feat of re-creating the previous day's tantrum. Most cases of non-human imitation (except possibly those of the apes) are responses to present cues. (The whole question of the nature of imitation is, as ethologists know, a complex one, and I shall not discuss it here, except in the limited context of our present concerns.) However, even if it is the case that some non-human animals have the power of 'genuine' imitation, which might lead us to ask why they do not then move on to the next stage of full representation, I think we can still make the following reply. The question of what capacity a particular species has, and why it should have that capacity, rather than some other, seems to be an empirical question. But questions about what is involved in a particular capacity, such as the capacity for language (or, for that matter, imitation), are, of course, conceptual questions, some of which we are considering here.

It is an interesting fact that sensory-motor infants seem in some ways to resemble other higher (adult) mammals in their capacities, and yet human infants progress to the level of conceptual thought while other species apparently do not, except - in a limited way - the apes.

Studies of apes and language provide some interesting food for thought. The most recent work suggests that apes can learn how to use language creatively, inventing new words, developing linguistic classification systems, and 'swear' words, and demonstrating verbal humour (Linden, 1974).

Apes have given other indications of representation capacity. Young chimpanzees were trained, first to get grapes out of a machine by putting tokens into a slot, and then to obtain tokens by working another machine. The apes were prepared to work for an hour to get a supply of tokens, even though they had to wait 24 hours to use them. In another instance apes in two adjacent cages, only one of which had a distributing machine, learnt to make gifts and exchanges, the symbolic value of the useful or worthless tokens being perfectly recognised. (Quoted by Piaget, 1951, p 69.) An interesting implication of these studies is the suggestion that there is no clear species cut-off point in representational capacity. And studies of ape capacities in language and representation may well provide us with more fruitful insights into the nature of these capacities.
Finally, before we consider the adequacy of Piaget's account of the transition from sensory-motor to operational (or conceptual) signifiers, there is one more aspect of his theory that needs to be mentioned: centration.

The term 'centration' derives from a physiological phenomenon of visual perception, which Piaget discusses at length in *The Mechanisms of Perception*. The term refers to a focusing on a specific part of a stimulus. In normal vision, the eye wanders over various parts of the stimulus in a succession of fixations. If focusing is fixed in a single centration, the result is a 'distorted' perception, e.g. an optical illusion, rather than an 'objective' perception of the object.

Piaget extends the notion of this physiological phenomenon to a metaphorical use, in discussing assimilation and accommodation. In the early stages of disequilibrium between assimilation and accommodation the child has a tendency to centrate to a particular aspect of a situation, ignoring other relevant characteristics. For example, Jacqueline had heard a hunchbacked boy described as "being ill", "having a hump". Later the hunchback was ill with 'flu. Next day Jacqueline was told that the hunchback was no longer ill, to which she replied, "He no longer has a hump". Piaget comments about this case that Jacqueline had identified the illnesses one with another, instead of distinguishing, in the general class of illnesses, the one that produced the hump and other possible ones (Piaget, 1951, p 235). Jacqueline had 'centred' on a particular aspect of the situation which caught her interest and attention at that moment, instead of attending also to the 'flu. She did the same thing when she went into the tantrum routine.

This tendency is what Piaget describes as 'egocentricity'. The child is unable to get away from a particular perspective. Later the child becomes able to 'decentrate', to view the situation from a number of possible perspectives simultaneously. Here we are brought back to the notion of disengagement. When equilibrium between assimilation and accommodation becomes complete, the child becomes aware of the full extent of the assimilated schemes, and then accommodates appropriately to the relevant features of the situation. What is more, the child achieves full 'reversibility' - is able to see the outcomes and consequences of any action in thought without, as formerly, having to engage in that action. Full representation implies decentration, the release from the egocentric perspective of here and now. What is represented is not an entity or a perceptual figure. Rather it is a system of inter-related actions or,
ultimately, mental operations derived from those actions.

6.2 Examination of some of Piaget's claims

It is time to examine the adequacy of Piaget's claim that there is a continuous development from sensory-motor to conceptual intelligence, and that the foundations of adult conceptual representation are to be found in sensory-motor action. With this claim goes the implication, that the 'operations' of intelligence (i.e. adult conceptual thought) are derived from sensory-motor action; for as we noted earlier (5.1) Piaget says that in its broad sense representation is identical with thought - "with all intelligence which is based on a system of concepts".

True representation begins when objects not actually perceptible are evoked by means of signifiers which call the absent objects 'to mind'. This crucial act requires the separation of the signifier from the signified. The signified is no longer merely the whole (object or event in the world) of which the signifier is a part, nor is the signifier the effect of which the signified is the cause. Now, with the advent of true representation, the signified is beginning to develop into something which Piaget interprets as an act of thought. When signification occurs at sensory-motor level in the form of a signal, the signified is quite unambiguously the object or event in the world. But when signification occurs at conceptual level in the form of a symbol, in addition to the item in the world that is referred to, there is also a network of assimilated schemes involved in the act of signification. The way Piaget puts this is to say:

"Representation thus occurs as a result of the union of 'signifiers' that allow of evocation of absent objects with a system of meanings by which they are related to present objects." (Piaget, 1951, p 277)

He goes on to say that this specific connection between signifier and signified goes beyond sensory-motor activity: it is the dawning of the 'semiotic function', and this function makes possible the acquisition of language and collective use of 'signs'. What he means by this is that at the level of conceptual representation the child no longer simply responds at a sensory or action level to the signified item. It is aware of that item within a network of schemes that connect it to other similar and dissimilar items. But in order to do this the child must become aware of the schemes as schemes (in other words achieve disengagement). As we saw earlier, the all-important step in this transition is the differentiation
between accommodation and assimilation, the separation of signifier from signified, i.e.

"Between imitation and the assimilating mechanisms of intelligence and play... As soon as imitation has become sufficiently flexible and reliable to function as a separate unit, it becomes capable of evoking absent models and consequently of supplying 'signifiers' for the assimilating activity, provided that the latter is capable of connecting them with present data." (Piaget, 1951, p 278, my emphases)

If we simplify the developmental pattern we have just been discussing, and break it down into its vital stages, we arrive at something that looks like the following (these stages are not meant to correspond to Piaget's own detailed stage-by-stage description of the development process).

1. At the sensory-motor level, repeated actions of the same type, (e.g. grasping) develop and call into play certain schemes. Every grasping action calls into play a subset (not necessarily the same subset) of the total set of schemes. At this stage 'memory' of the past consists not in any memory content (e.g. a thought such as "this action Ø is like that earlier action ¥" or "a bottle is a thing to be grasped and a ball is a thing to be grasped"); it consists merely in the bringing into play of a subset of the total set of schemes. And for an action Ø to be identified as 'the same' as an action ¥ requires only that schemes S₁ and S₂ are subsets of the total set of grasping schemes S. In other words the child, in grasping a bottle and in grasping a ball, is repeating the same action. It remembers how to grasp things because it has learned how to co-ordinate its hand and eye so that it can grasp. But what it does not have to do (and cannot do) is to know that it is repeating an action. Things in the world simply call the schemes into play and the child responds. No conscious identification, 'this is the same as that' is required for this sort of performance.

2. At the operational or conceptual level we have the capacity (although we often do not need to use it) of going through the above performance, but, in addition, having the conscious and explicit awareness of the network of assimilated action schemes before us. We may not be aware of the entire complicated network in detail and simultaneously, but we could in principle at least gain conscious access to the whole structure.
Piaget's claim is that our conceptual schemes have their genesis in the action schemes of sensory-motor infancy (Piaget, 1972, pp 12-20). These action schemes provide potential disengagement from the here-and-now. The explicit recognition of these action schemes, with the emerging semiotic function, makes that disengagement actual—and hence true and full representative thought becomes possible (Piaget, 1972, p 22). But there remains a problem about how we get from (1) to (2).

According to Piaget the vital step in providing the child with access to its own schemes qua schemes is its own deferred imitations of past objects and events. Notice again that Piaget's way of finding a solution to the problem of how the child gains access to its actions schemes avoids committing him to the position that the child, for example, uses an image to summon up the past. Because that would require that thought, without as yet a signifier, creates the signifier. Piaget is aware of that same difficulty that Merleau-Ponty has commented on in his discussion of temporality (4.2). Like Merleau-Ponty, Piaget sees that we cannot use some present item to explain our grasp of the concept of 'the past', without already presupposing a sense of the past. So Piaget's argument goes the other way: thought cannot get going without a signifier. Piaget also avoids the position that the child is simply able to say to itself, or recognise, 'this is the same as that', because that also would require that the child can call to mind these spatio-temporally separated items before it has language or any other signifier.

He attempts to avoid these difficulties with the explanation that the child, at the level of action not thought, produces an imitation. This imitation then becomes a signifier which allows the child to evoke the past event (the other child's tantrum), and so paves the way for fully-fledged representational thought about the not-present. For once the child has the assimilated schemes (which it has developed through play) and access to them (which it has gained through accommodative imitation), it can be aware of a number of things, and their consequences, simultaneously. The child can survey the extension of its schemes. For example, instead of performing this action or that (grasping a ball or a bottle) it can see the possibility of doing both, without actually doing either, and then choose which, if either, to do. Thus the child gains disengagement, for once it has come this far it can see the action of grasping simply as an action, in isolation from any particular piece of grasping.
But all this depends on the link of imitation, the signifier which has become separated from the signified. And this solution really only pushes the problem back one step, because what it still seems to leave unexplained is how the child is able to relate its present behaviour (the imitation) to the past item and its related schemes, without a further signifier of the past event. What now stands in need of explanation is how the link becomes established between the signifier and the signified, because if there was a problem about the content of memory being inaccessible without a signifier, surely the same problem crops up again in slightly different form in explaining how the child knows that this imitation which it finds itself performing, is in fact an imitation of something that happened in the past. If the child has a problem in being able to say 'this is the same as that', because it cannot identify 'that', when 'that' is spatially or temporally removed, surely the same problem exists not in producing the imitation of yesterday's event, because that may well be carried out at a motor level without any inner, content-laden thought, but in identifying this imitation with that past event? Just this problem seems, in fact, to be unresolved in Piaget's own formulation of his solution in the passage quoted earlier (6.1) where I have underlined the words, "provided that the latter (assimilating activity) is capable of connecting them (the absent models) with the present data". It is not clear from Piaget's account that this condition is fulfilled. Piaget's studies seem to have established this much: that the stages which he has observed do occur universally in the human developmental process. He seeks, however, not only to show that the stages do occur in this sequence - that as a matter of fact the sensory-motor period precedes the operational period - but also to explain conceptual representation by sensory-motor action, and to show that conceptual thinking is possible only as a result of conscious access to the action schemes laid down in the earlier period. And this, I think, he fails to do.

It may, of course, be the case even if Piaget has not been successful in demonstrating it, that sensory-motor action and conceptual thought are strictly continuous, and that the latter is explained by the former. If this were the case it would have interesting consequences for the continuity of thought and intelligence between human and other species, since as we have seen there are a number of common features between sensory-motor and other animal intelligence. ¹ If the continuity that Piaget seeks

¹. It may be possible to find other support for this position, in the studies of apes and the use of language, which we noted earlier (6.1).
to demonstrate were established it would also be a powerful argument for explaining thought as internalised action. However, as we have seen, Piaget's account fails at this point; and whether it fails for empirical or for conceptual reasons is not easy to decide. Piaget claims to provide empirical evidence that conceptual thought is rooted in sensory-motor action. But what sort of empirical evidence would decide a question like this is not obvious. As Wittgenstein recognised, it takes more than knowledge of the facts about language-learning in the child to explain the nature of language.

Nevertheless, whatever the success or failure of Piaget's aims, there is much of philosophical interest in his account of genetic epistemology and representation or representative thought (and for Piaget these two are the same). He provides many illuminating insights into the nature of representation and, in particular, its important feature of disengagement. Although there are problems in his attempt to show exactly how conceptual representation arises out of sensory-motor schemes, he does succeed in making a good case for two very important points:

1. Disengagement is central to representative thought.
2. Disengagement requires not only a semiotic function, but also a network of schemes that connect items which are spatio-temporally separated. And the suggestion that these schemes are action schemes, before they are conceptual schemes is a plausible way of running to ground the usual regress that accounts of meaning lead to.

Piaget has also shown what must be included in our account of full and true representation, by providing us with comparison samples of less adequate accounts. He makes it clear, for example, in what respects sensory-motor signification falls short of true representation. Sensory-motor signification is recognisably signification at a certain level, i.e. responding to one item as if it were another item, or responding to a part as if to a whole. But the account of this sort of signification is not powerful enough to explain many of the characteristics of, for example, the entertainment of a number of possibilities simultaneously.

'Disengagement' is the word used by Taylor to refer to an important aspect of Piaget's account of representation; and the aim of Chapter 5 and the first part of this chapter has been to show how content can be given to this important notion.

We shall make use of this notion in the discussion of Chapter 7,
but first we shall reconsider some earlier questions that were raised in our examination of Saussure, Peirce and Frege.

6.3 Signal to symbol: from 'bare' reference to sense and reference

As we noticed in examining the semiotic theories of Peirce and Saussure there were a number of occasions when the sense/reference distinction might have been helpful in clarifying some features of their accounts. For example, Saussure's 'signified' could be identified with Fregean sense, while his sign 'in its totality' (signifier plus signified) has as its referent some item in the world. For Peirce the object of a sign - what the sign stands for - appears to be identified with its referent or denotation: "the thing or occasion, however indefinite, to which it could be applied." (5.6). But something like Fregean sense also comes into the account (standing between the sign and its object) in Peirce's conception of the 'interpretant'. Problems which arise out of the relationship between object, interpretant and sign could perhaps have been resolved by paying attention to the distinction between sense and reference. Similarly the mistake that Peirce sometimes lapses into in his thinking about indices may arise out of sense/reference problems. Symbols are associated with concepts (or sense). They cannot pick out any particulars, so indices are needed, believes Peirce, in order to denote actual entities. He does not see that there are any problems in explaining how reference is achieved in the case of indices. He sometimes appears to think of sense and reference as the separate functions of different kinds of signs (symbols and indices) but does not explain how this comes about.

In both Saussure's and Peirce's accounts of signification we find elements of sense and of reference, but they are given different emphases in the two accounts, and the relationship between these two aspects of signification is implied rather than completely worked out.

If we turn now to Piaget's account we find again that there is no articulated sense/reference distinction as such, but we can see a clear - if implicit - distinction of this sort in the difference between the signified of a signal and the signified of a symbol, as we noted in 4.5. In the case of a signal, where signifier is not separated from signified, the signified corresponds to something which is denoted - and only denoted, without connotation. In the case of a symbol, the signified includes both sense and reference: absent objects are evoked "within a system of
meanings by which they are related to present objects" (Piaget, 1951, p 277). For Piaget the question of how reference is secured in the case of the signal does not arise in the usual form, precisely because the signal-user does not understand the signifier as a signifier, but simply responds to it. At this stage, then, (the signal stage) signification involves only bare reference; there is no 'sense' aspect, since no conceptualisation is involved, and 'meaning' is no more than the particular action schemes which are aroused, i.e. 'aroused' in the sense of actions being brought into play, without conceptual thought.

These features of Piaget's account - bare reference, or denotation without connotation - are interesting in relation to Wittgenstein's and Frege's views about 'bare reference'. Both Frege and Wittgenstein argued that there cannot be cases of bare reference (they were of course concerned only with the domain of language-users). Reference cannot be fixed without sense. We cannot know what is being referred to unless we know how it is being picked out. For example, pointing to a tree will not tell us what is being referred to - the whole tree, the shape of the tree, the absence of leaves, the colour of the trunk etc - unless the reference takes place in an understood context of interest in the tree from some particular point of view (a practical class for a botany group, say). When we refer to something, we have to refer to it under some description or other - even if that description is only implied, as in the case where we merely point to some shrub or other in the context of a botany class looking for melaleucas in a particular area of scrub country. That description supplies the sense which fixes the reference.

But if it is true that there cannot be bare reference, what are we to say about the so-called 'bare referents' of Piaget's signals? Perhaps we can deal with the problem in the following way.

Wittgenstein's and Frege's arguments apply to reference as it is employed by language-users or, in other words, to the referents of symbols. The position is different for signals. The referent of a signal is not fixed by 'sense', understood as the sort of conceptual sense that Frege had in mind. But even the referents of signals have to be fixed or determined in some way or other. Otherwise just the same problem arises for signals as for any other signifier. If the door with a triangle on it is to act as a signal of food for the rat, the animal must discriminate between the triangle and the circle in order to jump at the appropriate door to release the food. In a certain manner of speaking, therefore, we
may say that the triangle has been picked out within a particular context—the context of food-seeking activities. And the rat learns to discriminate between the part of the environment which will provide food and the rest of it which will not. So, although the referent cannot be determined by conceptual sense for the rat, it is fixed in some analogous way. The rat can both discriminate between perceptual cues and endow them with a behavioural significance, even though the rat cannot give to what it does the description: "jumping at a triangle which will release food".

In this manner, then, certain actions in relation to an environment (e.g. jumping at a door bearing a particular mark) play the same role in fixing a reference as the sense of a referring expression does. And this looks like some sort of justification for Piaget's claim that the 'system of meanings' involved in conceptual representation has its origins in the sensory-motor action schemes (Piaget, 1951, Ch. 10). What is interesting about Piaget's account of the development from signal-use to symbol-use is that it works out a coherent relationship between denotation and sense in signification at just the point where Saussure's and Peirce's accounts founder. And it is this feature about the signal—that it is denotation without connotation—that makes signal-use a primitive form (only) of representation.

As Piaget shows, in human use of signifiers we move from signification which involves only denotation to signification in which denotation is essentially linked to sense. Saussure and Peirce are implicitly aware that sense and denotation must both play a part in a full account of signification, but they do not spell this out explicitly. Saussure makes two important points (as we saw in 4.2): (1) that signification takes place within the sign itself—the uniting not of a name and a thing but of a sound image with a concept; and (2) that the signifier becomes connected to some item or reality within a community of language-users. But what he does not do is to bring together these two points explicitly in the one account—as Frege did with his account of sense and reference—although the implication is that for Saussure as for Frege, the 'sense' of a sign (the concept) determines its denotation.

In Peirce's account, sign and object come out as the two major terms, whereas the "meaning" is the "idea that attaches to that object" (Peirce, 1967, 5.6), although it is not exactly clear how. In 4.2 we
considered the possibility that this meaning might be connected with the
interpretant, especially when we remember that Peirce says about the
interpretant that it is something in the mind of an ideal interpreter who
understands the sign as standing for an object.

Perhaps we can elucidate this suggestion in the light of
Piaget's conception of objects evoked within a network of assimilated
structures, so that 'meaning' comes to be the system of relationships
between one item and similar ones - relationships which developed out of
the action schemes of the sensory-motor period. By the time the
operational stage is reached, therefore, understanding the meaning of a
sign begins to involve being aware of both a particular network of
relationships and the denotation of the sign. The denoted item must be
recognised in order to 'plug into' the appropriate system of relationships
between the denoted item and other items. It follows that the dependence
goes the other way, too: it would be impossible to be aware of the
denotation of a sign without being aware of the position of that denoted
item within the structure of related items.

This point may become clearer if we consider how it applies in
the following grasping example. Initially the meaning of 'thing to be
graped' is just to arouse the appropriate action schemes; but later the
schemes are not only aroused, they are also recognised as such. Then, to
see some object as 'a thing to be grasped' is to see its association with
all those other objects which are acted upon in the same way. So to see
something as a symbol (or sign) of grasping is simply to see it as
belonging to that network of schemes, which were formerly merely aroused
without awareness. Of course, by the time the child has reached the
level of operating with symbols, any item, such as a bottle or a ball, is
part of many structures - it has many action schemes attached to it - all
of them implicitly recognised and adding to the richness of the 'meaning'
of the object. On Piaget's account, then, we can see that the signal
signifies only by denotation, while the symbol signifies in a way that
involves both sense and denotation.

One of the consequences of Piaget's account of the lock-step
interaction of accommodation and assimilation is that it shows how an
item comes to be perceived within a framework of 'meaning' and also how
the assimilation of that item itself enlarges the frame of meaning. This
consequence offers a solution to the gaps that we noticed in the accounts
of Saussure and Peirce when it came to showing how sense and denotation
both fitted into the account of signification. For example, some sort of
meaning structure must be presupposed in order that, as Peirce maintains, there can be:

"some explanation or argument or other context, showing how - upon what system or for what reason the Sign represents the Object or set of Objects that it does." (2.230)

Piaget's account offers a way that this system can be cashed out. (Again we can make comparisons with the Wittgenstein of the Tractatus. Previously we noticed the apparent tension between Wittgenstein's arguments against bare reference and Piaget's account of signals with its implication that here is an example of bare reference. But Piaget's account of a symbol as signifying some item within a system of meanings has strong affinities with the Tractarian account of names referring to objects, but having meaning "only in the context of a proposition" (Wittgenstein, 1961, 3.3).)

We also noticed earlier (4.3) that Peirce occasionally makes the mistake noticed by Ayer of assuming that some signs - icons and indices - 'point to' the objects they stand for independently of any act of mind on the part of the sign user or interpreter, whereas symbols can act as signs only if someone so constitutes and interprets them. Peirce says about icons and indices:

"The interpreting mind has nothing to do with the connection, except remarking it, after it is established." (2.229)

As Ayer points out, Peirce overlooks the fact that mere similarity alone does not make something stand for something else: signification is dependent on the prior attribution of similarity as a convention of signification. Nothing ever stands for something else unless it is recognised as a signifier, we might say. But against this claim I argued earlier that these restrictions apply only in the case of witting use of signifiers.

We can now see more clearly the implied differences between witting and unwitting use of signifiers. In the case of a signal, the animal or sensory-motor infant cannot be said to know that it is using a signifier. Now in this very limited sense there is some truth in Peirce's remarks that there is some signifier which is "physically connected with its object" and that the interpreting mind merely notes the connection. But as we saw in Piaget's analysis of the signal there is no content to the notion of 'mind' other than the behaviour of responding to one object as if it were another. And this is not the way that Peirce's indices
function. He does want to give content other than overt behaviour to the notion of mind, namely, the content of having the capacity to recognize the index or icon as a signifier, even though he also thinks the mind has nothing to do with establishing the connection. To put it another way, Peirce makes the index a signifier which is wittingly used, unlike a Piagetian signal. And in this case we cannot account for how the signifier is seen as such unless we explain what is involved in the act of signification, instead of merely presupposing it.

This point brings us back to the distinction noted earlier (4.3; 4.4) between the view that a signifier can be intrinsically significatory and the view that a signifier can signify independently of any user or observer. As we saw, what makes something a signifier (whether it is wittingly or unwittingly used) is just the fact that it is both used as such and is seen to be used as such, although it is not necessary for both those conditions to be fulfilled by the same individual. Peirce falls into some inconsistency and confusion over this matter when he claims that the piece of mould with the bullet hole in it serves as a sign of a shot whether or not anyone is able to discover its cause (2.304), although he also claims that nothing counts as a sign unless it is so interpreted.

By now it should be clear that the bullet hole may be there independently of the witness of any living creature, but the signifier is not. What we have seen, then, is that, as Piaget has claimed, the signifier is only as good as the intelligence that uses it. What is built into the signifier is not some physical characteristic, but rather something that belongs conceptually and intrinsically to the structure of the sign, in virtue of the use to which the mark, sound, gesture etc is put. Without that use the signifier has no status as a particular kind of signifier (symbol, signal etc), or even as a signifier at all. One of the most interesting and important features which emerges from Piaget's account is the relationship between disengagement, the semiotic function and action schemes and conceptual structures. As we saw in 6.2 disengagement is central to representative thought, and disengagement requires not only a semiotic function, but also a network of structures. It is this network of structures which lies behind the ability to use signifiers, and to use them at various levels of representative adequacy.

This point brings us back to Taylor's remarks about disengagement, with their implication that language is the tool which has enabled human intelligence to diverge from other animal intelligence (5.0). If this is interpreted to mean that language is a system of sounds or marks which
enables us to make something stand for something else and thus refer to absent items and achieve distance from the immediate context, it fails to meet the case. For many other animals can use physical items in a limited way to represent other things, but they cannot achieve what humans can achieve with language. If, on the other hand, 'language' is interpreted so as to include the ability to use signifiers as, say, symbols, then this capacity stands as much in need of explanation as the mysterious 'disengagement' which is supposed to be explicated by reference to language. What Piaget's analysis shows is that disengagement is tied up with the very structure of the symbol. The relationship between language and disengagement cannot be as straightforward as simply that one is the condition for the other. Rather, they appear to develop in a mutually interlocking way, on the model of assimilation and accommodation. One of the purposes of the earlier exposition of Piaget's theory of knowledge is that it provides a plausible content to the rather mysterious and elusive notion of 'disengagement'. In particular, it illuminates the fundamental nature (fundamental to disengagement) of the capacity to be aware of a number of items which are separated spatially and temporally, and it makes clear how this capacity is tied up with the ability to be able to think of some item outside of any particular context. To put it another way, being aware of some item outside of its location in a particular context is just to be aware of the structure of relationships in which it is involved.

6.4 Conclusion

What we have seen in this chapter is that Piaget conceptualises the full adult capacity for representation as associated with both the semiotic function (i.e. the capacity to use signifiers to stand for absent objects and events) and the structures of 'meanings' that can be ultimately traced back to the sensory-motor schemes of infancy. These action schemes - later conceptual structures - release us from involvement tied to the immediate present, and also provides us with the means of using signifiers in a more flexible way than animals can use signals. What we do not know is why the other animals do not, like humans, progress beyond signal-use to language-use. One might speculate that the answer to this empirical question is tied up with species-specific differences in potential and actual brain structure. But this is a question which needs to be settled by investigation rather than by armchair psychology, and interesting though it might be it is not of immediate relevance to present interests.
But although we are not concerned with empirical questions about the capacities of various species, we are concerned with the conceptual question of what it is that the various species do when they use signifiers, and what it is that marks the distinction between one sort of performance and another, in short what is the nature of the signifying act.

Piaget sees the conscious access to our conceptual structures as structures as the crucial step in moving from signal-use to symbol-use. Although he does not succeed in his attempt to explain the transition from limited representational capacity to fully adult representation by the mechanism of imitation, his account of the different stages of representation illuminates the fundamentally different character of sensory-motor and conceptual representation. We also saw how the nature of 'the signified' undergoes a change when the signal-user graduates into symbol-user. The signified of the signal is some object or event tied to the signifier and denoted without connotation. The signifier of the symbol, on the other hand, is some item in a context of conceptual structures - which had their origins in the action schemes of infancy. Signifier and signified can now be separated in time and space.

There are some interesting parallels to be seen between this account of signifier and signified and Frege's account of sense and reference, also Wittgenstein's account of names having reference only within the 'sense' of a proposition. Piaget's account and Frege's sense/reference distinction also suggest a clarification of some of the problems which arise for Saussure and Peirce in their discussion of the nature of the signifier, and the relationship between signifier, signified and that which is represented. We saw, for example, that the signifying relation discussed by both Peirce and Saussure is connected with the structure of the signifier, the structure being the use to which a mark, or a sign or a gesture is put.

In Part II we have been concerned with a particular aspect of representation, i.e. semiotics and signification. What has emerged from this analysis of the function of the signifier and the nature of the signifying relation is the following: to say that signification is intrinsically built into the structure of the signifier is to say something about the way that the signifier is used. To quote Piaget's dictum once more: the signifier is no better than the intelligence that uses it. We have now seen in detail what is wrong with a Lockean sort of account which pins everything on to the representative item without explaining how that
representation can come about. What we now see is that it comes about not by some simple one-to-one correspondence between names and things, but through the use of sounds, marks, gestures etc. within a context of actions upon the world - first, by engagement with the world via actions upon it, and later by disengagement from the world by means of conceptual structures. All this adds up to an account of active representation which is very different from Locke's account. But it does show a similarity to Aquinas' active account of representation where the 'intelligible species' of the intellect are the means by which the world is represented and understood. There are obvious parallels between Piaget's conceptual structures of thought which develop out of interaction with the world (by accommodation and assimilation), and Aquinas' species (or concepts) which also develop as a result of interaction between the species and sensory experience (phantasms) - what we perceive being shaped by the species and the species being enriched as a result of experience.

In Part III there is a development of this conception of active representation: what we shall see in the remaining chapters is an extension of the notion of active use into the wider domain of representation.
PART III

THE REPRESENTATIONAL ACT
INTRODUCTION

In Part I a number of questions about representation were raised in the context of some classical theories. In doing this, especially in looking at the inadequacies of these theories, we noticed a number of recurring themes which indicated the essential features which have to be explained by an adequate theory of representation. In particular it became clear that there can be no representation without there being some Intentional act by an agent who uses or interprets an item as the representative of some other item. For representation is not and cannot be brought about just by there being some representative item; it must depend on the way an item is used to represent. Representiveness, that is to say, is not some feature that the item has of itself, but some feature which it is deemed deliberately to have.

There are then two aspects to representation which need to be elucidated. First, focusing on the representative item or the signifier itself, we have to ask how exactly one item can represent another and what part the representative item plays in the whole act of representation. These were questions discussed in Part II. But secondly focusing on the activity of representation, we have to ask what kind of act this is, and how it is possible. It will be apparent undoubtedly that these latter questions have already made themselves felt. Not only were they fore-shadowed in the classical accounts, especially in the Cartesian ambivalence between 'idea' as act or as object, but inevitably they emerged in our analysis of signification. For as we saw the signifier cannot be discussed in isolation from the way that it is used.

Now however in Part III we move on from a focus on signifiers and signification to the broader topic of representation as a whole. We shall begin in Chapter 7 by looking at a contrast between active and passive senses of representation, and this will lead us to an appraisal of the questions that have just been raised - what is the nature of the representational act and how is it possible? - and of related questions. For example, if images can represent, as we commonly believe them to do, how is this possible? Does it mean that they must be thought of as mental or internal pictures? But that would be to put them into the category of mediating entities, and we have already seen the serious inadequacies of theories about mediating entities. If then we say (as we must) that images
are not internal pictures or any other kinds of mediating entities, can we speak about imagery as representational thought? Chapter 7 shows why the answer to this question is: Yes.

In Chapter 8 we shall return again to the topic of animal thought. As we have already found, contrasts between human capacities and those of other animals have the heuristic value of isolating some differentia that are crucial to a full account of representation. In Part II we noticed that animals, unlike humans, do not use signifiers as signifiers. Chapter 8 is directed towards an answer to the question of what non-representational thought (i.e. thought without witting signifier-use) would be like.

Thus the general question, 'What exactly is a representative act and how is it possible?' raises important subsidiary questions in the philosophy of mind and in comparative psychology. But there are other important general conclusions that begin to emerge more clearly in Part III, although they have also been implicit in the earlier Parts. These conclusions have to do with:

(1) the relationship between representation and all thought; and

(2) the relationship between representation and reality.

Piaget makes the claim that "representation is identical with thought" (7.1.2). While it is not the aim of Part III to establish anything so bold as that claim, there is as we shall see strong support for the notion that conceptual thought must involve representation.

Second, we shall begin to see that no only must representation involving images or any other signifiers be tied down by a reference to reality, but also that we could not have any sense of reality, or any notion of the actual and the possible were it not for the representational thought that we bring to items in the world.

The above conclusions begin to emerge in Part III. They will be discussed more explicitly in the concluding chapter.
CHAPTER 7

REPRESENTATIONAL THOUGHT AND IMAGES

7.0 Introduction

In Chapter 3, in the context of a discussion of Descartes' treatment of 'idea' sometimes as an act of thought and sometimes as object, questions were raised about the separation of the content of a thought from the act itself. It was suggested in that chapter that representation is essentially intentional in nature: i.e. that it is an act of thought directed towards some object. But we must not confuse the content of that thought with the object to which it is directed. We may be tempted to do this if we lose sight of the essential unity of act and content of thought, and try to detach the content from the act. The temptation to do this may be most compelling when the mode of thought is a 'mental image' (as it was in Descartes' sun example). If we succumb to temptation, we do try to detach the content (the mental image) from the act of thought, and the image is then taken to be an 'inner' representation of reality. In other words, the image is taken to be the object of thought, rather than the thought itself.

Chapter 3 dealt with the diagnosis of this problem, but we are still left with the question of what is the role of 'mental' items, such as images in representation: and how do they relate to the active aspect of representation? We turn to these questions now in Chapter 7. The chapter begins with a comparison between active and passive senses of representation, and this comparison leads on to a study of the role of images in thought. There is an apparent tension between Piaget's emphasis on the active nature of representational thought and his characterisation of images as "concrete symbols". This tension is investigated in the light of Sartre's analysis of images. As a consequence of this analysis we see that images must be analysed intentionally as acts of thought directed towards some absent object or event. The image is not an inner picture, but a thought which uses the figural or sensible features of some object as a means of focus. These features act as what Sartre would describe as a 'presentifier'.

The image, then, is just one form of representative thought; that is to say, it is an act of thinking which is about (or involves some reference to) absent or non-existent items. But our paradigm was said to
be the three-term relation of representative item, represented item and agent who makes the relation of representation by an act of thought. How does an image measure up to this paradigm if the image itself is analysed as an act of thought about some (absent) Y? Does it mean in this case that although we have the represented item, Y (the object of the image-thought), there is no representative item, $\mathcal{R}$, since the image itself cannot be identified with the representative item? The answer to this question is that there is indeed a representative item - namely, the remembered visual (or other sensible) characteristics of Y. But this is still not to say that those visual characteristics are a mental picture, or any other kind of mental item. And why this is so we shall see in more detail in the last part of this Chapter.

7.1 Active and passive senses of representation

7.1.1 Passive 'representative' items

Hans Furth has commented on the implications of the 'active' and 'passive' senses of representation, in Piaget's treatment of this topic (Furth, 1969, p 69). The etymological origin of representation is literally re-presentation - 'to make something present by means of...'

(rem praesentam facere) - which implies the activity of making something present. But in the passive sense, a representation is that (the vehicle) by which something is made present. As we noticed in our discussion of Locke, this latter passive sense became virtually the only sense recognised by Locke, and not only did this interpretation continue through the writing of the other British Empiricists, but we find it still as the most usual interpretation of representation today. For example, 'representational thinking' usually means thinking in images. We still find in contemporary cognitive psychology the view quite commonly held that 'representations' can be stored in memory or act as 'mediators' in verbal learning. For example:

"In a given situation, they (images and verbal processes) may be relatively directly aroused in the sense that an object or an event is represented in memory as a perceptual image and a word as a perceptual motor trace .... In addition, it is assumed that chains of symbolic transformations can occur involving either words or images, or both, and that these can serve a mediational function in perception, verbal learning, memory and language." (Paivio, 1971, p 8)
Paivio's theory is concerned with two separate coding systems, one for image mediators and the other for verbal mediators, which are organised as a string of 'mental words'. This sort of conception, which we find as recently as 1971, has something in common with similar notions underlying the learning theories of some psychologists (e.g. Osgood and Mower) in which 'mediating stimuli and responses' (inner representations like Lockean ideas) elicit further responses.

Sartre in The Psychology of Imagination discusses at length the 'illusion of immanence' - the tendency to talk of images and other mental phenomena as if they were entities in the mind. The illusion consists in transferring all the spatial and sensible qualities of an object to the image or 'representation' (Sartre, 1972, p 61). Something like this illusion seems to lie behind the theories of the psychologists just mentioned. They find themselves, like Locke, in the position of being forced to assume that 'meaning' or 'significance' is somehow stored in a mediating entity, which then goes on to trigger off a further response in the form of behaviour. Paivio's account presupposes that when we remember we bring back earlier thoughts which are stored as meanings. But words and images cannot contain 'meanings'. Words and images are only items which can be used to express some meaning, or which can be responded to with some thought. Even if I recall some earlier thought, expressed by a particular string of words, and I now express that thought by the same string of words, it is not the same thought (as the earlier one). At best I can express some further thought t₁ which may be a memory of t. But even in a memory of t, which might be expressed as

'I remember thinking (t)',

(t) can never the the same as t. In our consideration of Descartes we saw the problem of trying to separate the 'content' of any Intentional act from the act itself, and it is for reasons of the same sort that difficulties arise in identifying the contents of the brackets in (t) with the earlier thought t.

We can find an illustration of these difficulties by turning once more to Merleau-Ponty's account of temporality and the past (Merleau-Ponty, 1962, p 414ff). He gives the following sketch of an erroneous understanding of time and a sense of the past. Time is like a series of events strung out like beads on a string. When I think of the past I look back over this string and see the beads stretching away into the distance, for example, an incident in Corsica before the war, Munich at the outbreak of war, a suit that was made before the armistice. But, argues Merleau-
Ponty, this account of a string of incidents is not enough to explain a sense of the past or even the passage of time. All I have is a multiplicity of events that might as well be extended spatially and simultaneously.

What is it, then, that gives a particular sense of time and the passage of future into present, and present into past? In order to answer this question we must first abandon the conception of a succession of discrete instants that can be represented by a line marked with points to indicate events A, B, C, and so on. Rather we should think in terms of a network of overlapping 'horizons' or perspectives which ensure an unbroken continuity between, for example, Munich at the outbreak of war and the present. When I look back at some event that occurred in the past I do not see it and experience it as I saw and experienced it then; I see it transparently through the intervening events and through my previous recollections of that past event. Every time I look back into the past I have a particular perspective, and those perspectives continuously overlap, and it is this fact - that a particular event can be viewed simultaneously from a number of perspectives and that those perspectives overlap in a continuous chain - that gives a sense of the past. For example, about Munich at the outbreak of war, Merleau-Ponty would say that he can look back now to his feelings at the time of the outbreak of war, but whatever memories he has now of his feelings then - his hopes and fears - are inseparable from his memories of the intervening time, his feelings at the end of the war, his memories of that earlier recall of Munich at the outbreak of war from the perspective of the end of the war, and so on.

It might be argued that the beads-on-string-model can be made to work if we recognise that we 'date' the events by arranging them in a sequence. We know that the incident in Corsica was before that time in Munich at the outbreak of war, and we know that the suit was made after the outbreak of war and so on. This move, however, requires the assumption that we already know the meaning of 'before' and 'after', but 'before' and 'after' are part of what we are trying to explain in our account of time and our sense of the past.

What is important in Merleau-Ponty's analysis is that all these events that stretch back from now to Corsica before the war are not viewed from a single temporal perspective but from many overlapping ones. It is the plurality, plus the overlap, which provides a sense both of the passage of time and of continuity which could never be accounted for on the model of events strung out like beads on a string. Merleau-Ponty illustrates this conception of time with a diagram taken from Husserl:
What is given, says Merleau-Ponty, is A transparently visible through $A'$, then the two through $A''$, and so on, "as I see a pebble through the mass of water which moves over it". I don't begin with objective landmarks (as in the beads-on-a-string model) and then derive a temporal significance from the objective landmarks. It is the other way round: I can assign a place in my memory to these so-called 'objective' landmarks only because "gradually, step by step, the synthesis of apprehension links me to my whole actual past". As a result of these identifying syntheses, I am able to obtain the point A itself.

"The upsurge of a fresh present does not cause a heaping up of the past and a tremor of the future; the fresh present is the passage of future to present, and of former present to past, and when time begins to move, it moves throughout its whole length.... There is, then, not a multiplicity of linked phenomena, but one single phenomenon of lapse." (Merleau-Ponty, 1962, p 419)

In demonstrating the weaknesses of the string-of-beads type of account, and offering an alternative which meets the objections to the other, Merleau-Ponty makes an important point: the impossibility of recovering some ideal instant A, mistakenly thought to be crystallised like a bead on the string of time. There is no such moment which persists – even in memory. It is simply an illusion, arising out of our constant and changing syntheses. The illusion is undermined by understanding that every time I think about that posited instant A, I recapture something slightly different, the centre of a new perspective, which I however identify as the ideal moment, or the reference point A. Every recapturing of that ideal instant A must be different, because it is reached through further layers of experience. It follows from Merleau-Ponty's arguments that if this
we are not so, if, *per impossible*, there really were some crystallised and enduring instant A which could be continually reached in memory, then we should not have a sense of the past or of time at all. We should indeed be left with the string-of-beads model which is insufficient to yield any grasp of temporality. The reason for this is that we should never have anything but what an observer might describe as a succession of 'present moments', without, however, any possibility of our having understanding of the succession, and therefore in the end no possibility of giving content to the notion of 'present'.

We can apply arguments like Merleau-Ponty's to those psychologists who think of a representation, whether in words or in images, as a bearer of significance — as if the meaning that was recognised in the initial act of representation can itself be stored or laid down in memory, to be recovered on subsequent occasions, like the ideal instant A. An image or a string of words may be remembered, but when they are recalled they are remembered only as the instant A is, through the transparent layers of further experiences. The original thought t can be recalled, but only by a further act of thought, and that act is a thought about t: it is not a re-experiencing of t. In fact, as we saw in our study of Locke, the notion that there can be any thought, either in the form of an image or of a string of words, laid down in memory and then having a life of its own (e.g. acting as a stimulus for further responses) is simply incoherent. And yet this conception, which is implicit in the theories of some psychologists we have noted, follows as a consequence of recognising only the passive sense of representation.

If the problems discussed above arise out of interpreting 'representation' exclusively in what Piaget would call its narrow (i.e. passive) sense of the representative item *simpliciter*, let us turn now to Piaget's other sense.

### 7.1.2 Active representation

"In its broad sense, representation is identical with thought, i.e. with all intelligence which is based on a system of concepts or mental schemes, and not merely on perceptions and actions. In its narrow sense, representation is restricted to the mental or memory image, i.e. the symbolic evocation of absent realities. It is obvious that these two kinds of representation are related. The concept is an abstract scheme and the image a concrete symbol, and in spite of the fact that we no longer consider..."
thought to be merely a system of images, it is possible that all thought is accompanied by images, or if thinking consists in relating meanings, the image would be a 'signifier' and the concept a 'signified'." (Piaget, 1951, p 67)

The above passage suggests that Piaget does indeed, as Furth claims, recognise two senses of representation: the broad sense refers to Intentional acts of thought which are not tied to the here and now; and the narrow sense refers to the vehicle by which that act of thought is carried out. We could say that the latter of these two senses could be compared with the notion of a signifier as we find it in Saussure; we might notice also that Piaget, like Saussure, identifies a concept with the notion of a signified. Piaget acknowledges the relationship between the broad and the narrow senses. But what precisely is this relationship? Does Piaget want to say that all cases of representation must involve both the broad and the narrow sense: that there can be no representation without some act of thought, and equally there can be no representation without some vehicle by which something is made present?

In the context that we have been referring to Piaget is not explicit on this question. But this position – that both the act of thought and the vehicle by which something is made present are involved in any representation – is strongly implied throughout his discussion of the stages of representation in Play, Dreams and Imitation in Childhood. True representation is achieved, he maintains, only when the child has progressed beyond signal-use to symbol-use. Now in the case of signal-use there must be some vehicle by which something may be made present; what is missing, however, is the act of thought by which something is made present. Admittedly there may also be thought of some kind involved in signal-use. The behaviour of an animal which responds to a signal may well be called intelligent behaviour and even thinking behaviour, but as, we have noticed earlier in this sort of behaviour we have no need to say that there is anything more to the thought than the behaviour of responding intelligently to the signal - the thinking is the behaviour. In this sense, therefore, thought may be involved in signal-use, although not perhaps an act of thought. Certainly it is not an act of thought by which something is made present. For, as we saw, signal-use is by definition tied to the here and now, in contrast to symbol-use which involves conceptual networks of relationships to items which are removed in space and time. Piaget describes only symbol-use as true representation, because it is only with symbols that for the first time thought about the
not-present makes its appearance. Representation for Piaget, then, intrinsically involves both some vehicle of representation (some signifier) and some act of thought by which something is made present.

It may be objected here that in his own definition of the broad sense of representation Piaget says simply that representation is identical with thought, not that it is identical with thought about the not-present. Yet it should be clear now that this condition (that it is thought about the not-present) follows from his qualification that thought is "intelligence which is based on a system of concepts and mental schemes and not merely on perceptions and actions", because concepts and mental schemes, in contrast to perceptions and actions, are dependent on the network of relationships between items which are spatio-temporally separated.

7.2. Images and representation

7.2.1 Problems in the Piaget-Furth analysis

So much for a general outline of Piaget's conception of representation. Let us turn now to his discussion of images and their role in representation. We noticed in the quotation above (7.1.2) that Piaget described the image as a 'concrete symbol' in contrast to the concept which is 'an abstract scheme'. Later in that same quotation Piaget suggests that images can be thought of as 'signifiers'. Piaget also frequently claims that images are internalised imitations (Piaget, 1951, pp 5 & 279; 1971, p 257).

These remarks prompt some questions about just what kind of mental item a Piagetian image is. On the face of it, there is a tension between the position that Piaget holds on the activity of the mind and these remarks about images, which imply mental mediating entities. We should surely expect that Piaget's emphasis on the activity of the mind ('the mind' being understood in terms of thinking, constructing acts of the intellect) would rule out anything like mediating items. However, we get the same impression from Furth's interpretation of Piaget's two senses of representation, when he suggests that the narrow sense is that of a

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1. The translator here renders Piaget's term intérieur as 'interiorise', although as we have already noted (5.3) Furth points out a distinction made by Piaget between two uses of the word. The use in the above context would be better translated as 'internalise' i.e. to make covert something which was formerly public.
'mediating instrument' (or signifier) (Furth, 1969, p 69). Elsewhere Furth says that "images are one basic form of symbols" (p 90). This remark, taken together with Furth's and Piaget's position that symbols are (one of) the means by which representation takes place implies that images themselves are 'mediating instruments', since symbols are signifiers or 'mediating instruments'. This sort of talk about images as mediating instruments sounds like the talk of mediating responses and stimuli by other psychologists; and we have already found objections to that. So where does Piaget stand on this issue?

As we saw (in 5.3) Piaget thinks of an image as an 'internalised imitation'. First the young child represents some object by means of an imitation (e.g. Jacqueline's imitation of the other child's tantrum), and this imitation is seen by Piaget as a reproduction and representation of the sensory and figural characteristics of the represented item. Later the child does not need to represent these characteristics by overt bodily actions; it has the capacity to think of the figural characteristics merely, and this it does in the form of an image. Hence the notion of an image as an internalised imitation. But now Piaget wants to say that just as the imitation is used to represent some other object or event, so the image represents some other object or event. The image, therefore, is a mediating and representative entity. To put it in Furth's words:

"It is the figurative aspect of an image that makes it representational and assures its privileged status in the spatial area. A mental image of the tree has a figurative resemblance or correspondence to the perceptual configuration of a particular tree. The correspondence comes about via the accommodative imitation during perception; the imitation is internalised and transformed by the symbolic function into a symbolic instrument for the knowing of a tree." (Furth, 1969, p 140)

Furth himself thinks of a question that we might now want to put:

"If an image signifies a tree, why not say a perception signifies a tree?" (p 141)

His short answer to this question is that in the perception the act of perception and the object of perception are one and the same reality. We should have no disagreement with this view for the reasons that we discovered in our earlier attempt to split Intentional act and content (Chapter 3). But then Furth goes on to claim that this is not so in the case of an image. To put it in his words again:
"But the mental image is another thing than the perceived thing; because of this differentiation, an image can come to represent the perceived thing."
(Furth, 1969, p 141)

We shall return to a consideration of this claim, but first there is another strand to the Piaget-Furth position on images that requires some explanation.

Furth analyses the relationship between a symbolic image and the event that it stands for in the following way. There are three items involved: the symbol, the real event, and the 'known event'. 'Intelligence' (which in this context apparently means conceptual thought) constructs and transforms a sensory event into a 'known object', and the symbol, therefore:

"... refers directly to the knowing of an event, precisely because it is constructed or comprehended as a representation by means of the same scheme of knowing that was operative in constructing the known event in the first place." (Furth, 1969, p 88)

Furth illustrates the relationship of symbol to known event in the following diagram:

```
SYMBOL refers to KNOWN EVENT

is comprehended by

KNOWING

Furth's diagram of relationship between symbol, known event and knowing (Furth, 1969, p 87).
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Looking at the above diagram, we may ask what is the distinction between 'real event' and 'known event'? Some earlier discussion by Furth suggests an answer:
"Knowledge does not merely derive from the taking in of external data; the organism in interacting with the environment transforms or constructs external reality into an object of knowledge.... For Piaget operations or concepts as such are not reified objects which we know but rather that through which we interact intelligently with the world and society and constitute them as an objective reality vis-à-vis our own person." (Furth, 1969, p 81)

In all of this there is something very like Aquinas' doctrine of the mind with the different roles of phantasms (Furth's 'external data'? and species ('operations and concepts which are not objects of knowledge'), and the manner in which both are used by the agent intellect ('through which we interact intelligently with the world'). And in the reference to the organism which constructs external reality into an object of knowledge we can see parallels with Husserl's distinction between the object as it is in itself and as it is under some description or aspect by which it is picked out (i.e. the noema). We might, then, conclude that Furth's 'real event' corresponds to an object in itself and that his 'known' event corresponds to a noema or to a synthesis of noemata.

But now what does Furth mean by saying that the symbolic image 'refers' to the known event? Why cannot the image just be the known event? Why does Furth make a distinction between, say, the image of an earthquake and the known event of an earthquake, claiming as he does that the image is a symbol of the known event, a symbol which refers to the known event?

We have already looked at (in Part II) the relationship between various kinds of symbols and those things which they stand for. For example, we can say about a drawing that it is a symbol of an earthquake. The drawing is a physical mark which becomes a signifier because it is used as such to refer to an earthquake. In being used in this way it has significance built into its structure as a signifier. Let us suppose that I think about an earthquake that I have seen and then I make the drawing. I can now say that it is a symbol of the earthquake that I have seen. What we have supposed here is like the position that was envisaged in Chapter 3 where it was suggested that the content of a thought about the sun could be drawn. There, however, we saw that the content of the thought could not be separated from the act of thought, and that what had been drawn was the recalled characteristics of the sun (the real object). But, of course, what made the drawing stand for the sun was the fact that I was thinking about the sun, recalling its characteristics, drawing them and intending the drawing to stand for the sun (although this is not to say that I must
have had an explicit thought to that effect). The signifier, then, had
the components of physical mark (drawing of the sun), plus my recall of
the sun (known event?) which inspired the drawing, plus my intention that
the drawing should represent the sun.

Let us now return to the question, raised by Furth, of how a
symbol can be distinct from a known event. In a case like the above one,
there is no difficulty in separating the drawing of the earthquake from
the known event of the earthquake. One is a physical mark, the other is
an act of thinking. But it is not so easy to make a clear separation
between the drawing as a signifier from the known event, just because what
makes the drawing a signifier is that it is intended to represent the
earthquake - and the earthquake can only be represented as it was known
(or perceived). It is this very fact that might have tempted us to say
(in Chapter 3) that a drawing is of my thought, rather than (correctly)
that the drawing expresses my thought of the sun or earthquake.

If, then, we say that the symbol of the earthquake includes, as
a component of its structure as a signifier, the reference to the earth­
quake as it was known, we cannot make a complete distinction between
the symbol and the known event. We can, however, make a distinction, between
the drawing, qua physical mark, and the known event.

But now consider what Furth wants to say about the image as a
symbol of a known event. Both, he says, are constructed by an act of
intelligence (thinking) and the one refers to the other. If we had
problems before in separating the symbol from the known event, we face
even greater ones here, where there is not even any physical mark (e.g. a
drawing) to be separated from the known event. Surely, we might think,
the image just is the known event?

The main thrust of Furth's argument about the true nature of
representation was that the important and basic sense of representation
is its active sense, the active knowing that comes about through interiori­
sation, the development of general structures which release the knower
from simply registering the here and now. And this position is consistent
with Furth's and Piaget's general thesis that knowledge is not stored as
content, since there is no content to be stored. On the contrary, what
we know is constructed (or reconstructed) in the very act of knowing,
through the application of knowing structures which are specifications for
knowing, as it were, to something that exists externally in the world. In
this theory there appears to be no room for mental furniture such as mental
images which are 'concrete symbols', 'signifying concepts'. So surely neither Piaget nor Furth wants to analyse images as mental mediating entities, but rather as acts of thought? On the other hand, Piaget does describe the image as 'an internalised imitation' (Piaget, 1951, p 279). And, in fact, the more we explore Piaget's position the closer we seem to be getting to Sartre's 'illusion of immanence'.

7.2.2 Sartre's account of images

According to Sartre, the image is not in consciousness. When he has an image of Peter, the object of consciousness is not the image, it is the flesh and bone Peter:

"Peter is directly reached; my attention is not directed on an image, but on an object."
(Sartre, 1972, p 5)

If the image is not the object of consciousness how does it relate to consciousness? According to Sartre it is the mode of consciousness. To have an image of Peter is to have an imaginative consciousness of Peter, or to have a consciousness of Peter in the form of an image. The illusion of immanence is to make the image concrete, to endow it with the same spatial characteristics as its object. This view as it appears in Locke's writing - that ideas are ghostly copies of objects in the external world - is precisely the sort of view that Piaget surely should oppose. But let us see if this apparent inconsistency in his views can be sorted out. First we must investigate the nature of imagery more closely.

If images really were pictures we should be able to gain information by studying them just as we can see more detail in an ordinary picture when we examine it more closely. But in fact very little information is contained in the image itself. We get no more out of an image than we put into it. In psychological studies of imagery when subjects copy their images in drawings, the image frequently has to be interpreted by the subject. If I try to produce visual images of a hare and a rabbit, it is only by deliberate effort that I can make the images different - by lengthening the hare's ears, or by making the image move, so that the hare runs, rather than hops. But this occurs only when I try to discriminate between a hare and a rabbit. In thinking about the animal which I have seen around the campus, I do not depend on the clarity of my image in order to know that it is a hare. My image may be of some ill-defined hare/rabbit-like creature, but still I know that it is a hare that I am thinking of. And implicit in that consciousness is the knowledge that the
animal has longer ears than a rabbit, runs not hops, is a non-herd animal and so on. Similarly, if I think about Peter and I have a visual image of him, my image will 'show' only his visible characteristics, and probably not even all of those, perhaps only his eyebrows. Yet to know that my image is Peter is to be aware of many other characteristics which make up the identity of Peter; and these things that I 'know' or 'feel' towards Peter are contained in the very structure of the image. As Sartre argues, the image is not an *accompaniment* to thought; it is to think in a certain way. (Sartre, 1972, p 63.) So, for example, the image he has of delicate, white hands is a synthesis of cognitive and affective consciousness. The (real) hands are the object of both knowledge and affectivity (his desire for the possessor of the hands). But note that the image is not a picture of the hands which arouses desire. Rather he expresses his desire in the structure of the image (Sartre, 1972, pp 80/81).

If, then, to have an image of Peter is to be conscious of Peter, there must be more to the consciousness than is 'shown' in the image. The image may not be the same kind of entity as a drawing, but it has in common with the drawing that it doesn't 'show' everything that is known about the object of the drawing or the object of the image, or even everything that is being thought at the moment of imaging. In the case of a drawing as in the case of language the question arises, how does the symbol (drawing or language) secure reference? Does the same question arise for an image? To say that it does, seems to put an image on to the same footing as a drawing or language, i.e. a separate entity from the object of thought or reference. But to say that it does not, i.e. to say that the image *is* the consciousness of the object, therefore the question of securing reference cannot arise, leaves the problem that what is thought or known about Peter is not fully contained in the image. And so in what sense can the image of Peter be the consciousness of Peter?

Sartre, like Piaget, claims that the function of the image is symbolic, and that it serves neither as illustration nor support for thought (Sartre, 1972, pp 109/10). He had said already that the image *is* the consciousness of the object. Now he also says its function is symbolic. But he distinguishes between his own sense of symbol, and that of many psychologists who, he says,

"Look upon thinking as a selective and organising activity which fishes for its images in the unconscious to arrange them and combine them according to circumstances: the thought stays strictly on the outside of the images it gathers"
Sartre argues that the symbolic function cannot be added to the image from the outside, that it is symbolic in essence and in structure (and his arguments are similar to those that we have considered earlier - 4.4, 6.3).

On Sartre's account, to have an image of an object is to be conscious of that object - and to be conscious of it in a special way, namely as absent; it is to know that I am recalling or imagining some object which is not externally present in this time and in this place. But just as when I am thinking about something which I perceive, I may be (perhaps only implicitly) conscious of a number of facts about it, so when I think about Peter who is absent I may be conscious of a number of things about him, and these thoughts are focused into a symbolic presentation of him as an image. Sartre's account of the image might be interpreted as a particular form of noema - a consciousness of some aspect of an object or event which is experienced in the mode of an image, that is to say, consciousness focuses on (among other things) certain sensible features of the object.

If Sartre is right in his arguments, as I think he is, that the image is not an object of or within consciousness, but rather a particular mode of consciousness, can this view be reconciled with Piaget's position that the image is a symbol which signifies a 'known event' or item? There are two mental constructions in Piaget's account - the symbol and the known event - one of which Sartre manages to dispense with, thus purifying the ontology of the 'mental realm' which Piaget might be said to have polluted. It is worth noting in this context that when discussing the account of the psychologist Flach, Sartre denies Flach's claim that an image in the form of a symbolic schema is a representation. The image in question is reported by one of Flach's subjects who was asked to give the meaning of the word 'proletariat'. The subject sees 'a flat and black area, and below it, a sea flowing vaguely', and this claims Flach is a symbolic representation of the content of the idea 'proletariat'. Flach is wrong in his interpretation, Sartre maintains, because schemata such as the one described "in no way perform the role of sign and representative". The schema of that 'flat and black area' with the 'vaguely flowing sea' is not a sign for the proletariat, it is the proletariat in person. Sartre does, however, concede that there is a representative in the schema, "it is the
affective-motor analogue by means of which we apprehend the form and its colour. But the real meaning of the symbolic schema, says Sartre, is the object of thought (i.e. the thought about the meaning of 'proletariat') 'giving itself' to consciousness. For this reason Sartre claims that the role of the schema is that of 'presentifier' (Sartre, 1972, p 119).

These comments by Sartre suggest that his position is not in fact quite so clearly opposed to Piaget's as it might have seemed to be. First, Sartre's opposition to the idea that the symbolic image is a representation seems to spring from a narrow interpretation of representation. His account of what is involved in the nature and structure of the image might well be called representation in Piaget's wider sense. But Sartre appears to identify 'representation' with some physical entity which could be used as a sign. So in denying that an image is a representation what he clearly wants to deny is what he has already argued against: namely that an image is a mental picture or some sort of sensory trace. But, in fact, Sartre's analysis of the role of the image in mental life can be reconciled with the Piaget-Furth account of representation in the following way.

7.2.3 Reconciliation of Piaget-Furth with Sartre

Piaget assumes the need of some signifier to focus thought about the not-present. This need does not seem to arise when we think about the present: all we need to do here, as Ryle has argued at length in Concept of Mind, is to respond behaviourally to some present situation. I can drive a car from home to work, make all the necessary turns, avoid all the obstacles, obey the 'commands' of the traffic lights and so on, without any detectable mental events, and yet I cannot be said to drive without thinking, because to drive unthinkingly is to drive and to neglect to obey the lights, avoid obstacles etc. But any thought about the not-present (at least if it is to be accessible to consciousness) involves representation in the active sense of the word, namely an activity of the mind that involves the use of something to stand in for something else.

If this were not the case - if there were not some item which stood for something else - it is hard to see how we could have access to the contents of our thoughts. Of course, from this it does not follow that all our thinking about the not-present involves images. There are many other items that may function as signifiers, for example, language, items in the physical world, drawings, photographs and so on. We may want to say, with Sartre, that the image is the thought of the absent
object - that the thought dwells on certain sensible characteristics of
that object, and that this is what we call an image. When Sartre talks
about the image as a 'presentifier', he may mean just this - that the
thought dwells on certain sensible characteristics of an object, for
example Peter's red hair and his tall figure, in order to call him to mind.
Nevertheless the thought about Peter implicitly contains a host of other
meanings. In short, Sartre's presentifier is the item which is used as a
focus of thought about the not-present and hence becomes a signifier.
It might be thought that the item which is used as a signifier must be
some concrete item, such as a word or a picture. So that if we agree
with Sartre that an image is a particular mode of thinking, not an object
or content of consciousness, we may think that we must rule it out as a
symbol or as a signifier.

But to make this objection is to misunderstand the nature of the
symbol in a way that should by now clearly be a misunderstanding. As we
have seen there is nothing about the physical nature of any item - signal
or symbol - that makes it a signifier. It signifies as a function of its
essence and structure, and that essence and structure are dependent upon
the use to which the item in question is put. Whatever the vehicle of
signification happens to be, its signification (as a signal or as a
symbol) occurs only because someone or some thing uses it in that way. So
what is important about the symbol is its significatory structure, that is
to say, the structure it is given by the Intentional act of the user. Of
course, for there to be a symbol at all there has to be some ⦵, to be
structured by the Intentional act of the thinker, but whether material ⦵
or whatever is irrelevant to the structuring act. The memory image might
be interpreted as the memory of certain sensible features - visual,
kinesthetic etc. - of an object or event, and this will do as well for a
symbol as a drawing or a piece of language.

What I have tried to show here is that if we accept Sartre's
analysis of the image as an Intentional act of thought, as I think we must,
it does not follow from this, that it cannot also involve signification.
On the contrary, if we understand the nature of the significatory structure
of the symbol - and this is what we started to study when we examined first
Saussure's analysis of the relationship between signifier and signified,
and then Piaget's discussion of the interiorised structures which make
disengagement possible, and lie behind the use of the symbol - we shall
see that to use a symbol is to be involved in an Intentional act.
But we still have not quite dealt with the question that was raised earlier. Can Sartre's analysis be reconciled with Piaget's claim that there are two mental constructions - the image and the known event? In order to achieve this reconciliation I think we need to recognise that Piaget and Furth put the matter somewhat misleadingly. The image and the known event even for Piaget are really only two aspects or descriptions of what is in fact the same act of thought. We can see that this must be the case if we think about Piaget's account of the image as internalised imitation. The imitation of the young child is an action which allows the child to accommodate to the sensible characteristics of some item or event. This accommodation allows the child to 'plug into' its own network of action schemes, which at this stage are being interiorised as structures of thought.

When Piaget says that this imitation becomes internalised, he seems to mean the following: it is no longer necessary for the child to make the overt action of tracing or acting out the sensible characteristics of an object or event in order to accommodate to it since this same function can now be carried out in thought alone, the action withheld. The image, then, should be interpreted as a mental construction, construction not in the sense of some thing (while the known event is some other mental item), but in the same way as for Piaget any thought is a construction. That is to say, a construction does not imply an entity, but rather an act of construction: an act of thought which is directed towards its object in some particular way or another. In the case of an image the thought has two aspects: the recall of certain sensible characteristics, plus the particular Intentional character of the thought. For example, I have an image of certain trees and buildings on a route, and that is the focus of my attempt to decide whether I should take a right or a left turn at this point on my journey. To 'see' those landmarks is in some way to think about which way I have turned in the past.

We could say about Piaget's image that it is a way of using sensible characteristics as the 'presentifier' of a thought about some absent or past item in much the same way as Sartre suggests in his account. We should, however, notice an important point made by Sartre about the relationship between what we might call the sensible characteristics of the image and the thought that it expresses. The image is not to be thought of as a pictorial accompaniment or an illustration of thought. There are not two things - picture and meaning - the image is the thought itself and requires no interpretation (Sartre, 1972, pp 63-75). This conception of
Sartre's is in turn very much like Saussure's analysis of signifier and signified, which as we saw earlier, shows that these are only two aspects of the total act of signification. We found the same conception of inseparability behind Husserl's analysis of noema and noesis in Chapter 3. So what we find, then, on a closer examination of Piaget's two mental constructions, the image and the known event, is that they turn out to be merely two aspects of the one act of thought, and under this interpretation there appears to be no conflict between Piaget and Sartre.

But the important point to emerge out of this apparent problem for Piaget of the unnecessary duplication of mental items, is that the problem can be resolved only if we interpret the image as an act of thinking rather than as a mental picture, and this interpretation is justified, I think, by Piaget's own account of signifiers and representation.

7.3 Conclusion

This discussion of representation by means of images has highlighted once more the importance of active thought about some $\psi$ both in representation in general and in images in particular. For as we have now seen imagery is just one particular kind of representation. What makes thought representative is just that it is thought directed towards some absent item(s).

But while, in the course of our investigation, the activity of thought is gaining importance, the converse is happening to the representative item. In the primitive models of representation that we investigated at the beginning of this thesis, all the weight of representation was apparently born by the representative item. But now in the content of imagery we can see that this item is relatively unimportant. The important aspect of representation is the thought directed towards some item or other. And while some $\phi$ is used to stand for some $\psi$, the physical, or otherwise, characteristics of $\phi$ are of little importance. Anything will do as a representative item, because what makes it such is the structure given to it by its use. So, for example, an image is not a representation because it is a mental picture, but because it is an act of thought about some $\psi$ in which some remembered visual characteristics are used as a symbol and focus of a complex of thoughts and feelings about $\psi$. However, in putting it in this way, we must be careful to note that the representative item is not a mental picture of the visual characteristics, but the actual visual characteristics as they are remembered. Some people claim that their recall
of 'actual characteristics' is so strong that it is appropriate to speak of an 'introspectible inner trace'. And it is true that I can introspect what I may call an 'inner trace', but this is only to say that I am conscious of remembering the visual characteristics of some earlier perceived object. However, to talk of 'introspectible inner traces' is perhaps harmless so long as we do not go on to interpret this trace as having the characteristics of a genuine picture, e.g. an object which as a result of (mental) examination yields further perceptual data. Sartre's arguments against this position (in Part I of Psychology of the Imagination) are conclusive, I think. I shall not however discuss this point any further since it does not affect our main position. Even where people do speak of 'introspectible inner traces' these are still not 'images' in any way that could make them bearers of representation.

To put it another way, the image is not to be identified with the representative items; rather it must be identified with the entire representative act. It encompasses both the representative item (the remembered visual characteristics) and the act of thought which makes the recall of visual characteristics (e.g. the delicate white hands) the expression of a synthesis of thoughts and feelings about the possessor of those hands.

These conclusions about the correct way to analyse the representative nature of images may become clearer if we compare them with the commonsense model of imagery.

The commonsense model is as follows:

X has an image of Y = X experiences a picture of Φ which stands for Y. This looks as if representation is part of, and only a part of, the imaging experience; and, given our earlier analysis of representation, it leads to a regress. Peter Sheehan has made a similar point in a discussion of Intentionality in Aquinas (Sheehan, 1969).

The correct account is as follows:

An image is itself an act of representative thinking of the form Φ[R]. But Φ alone is not to be identified with the image (a picture). The analysis is rather that, where X is the person having the image, then 'X makes Φ stand for Y' means 'X makes the remembered visual characteristics of Φ stand for Y'. And Y, it must be understood, is not just bare denotation. It is denotation with connotation.
CHAPTER EIGHT

THINKING WITH AND WITHOUT REPRESENTATION

8.0 Introduction

In the previous chapter we looked at what seemed to be a problem case of representation: imagery. In doing this we saw that 'mental images' should be analysed as representative thought, not on the commonsense model of a picture standing for something, but rather as an act of thought directed towards some non-mental object. To put it another way, images like other forms of representation must be analysed intentionally. What we also saw in Chapter 7 was the relative unimportance of the representative item compared with the representational act. Although in acts of representation there is some $\phi$ which is made to stand for $\psi$, it is unimportant what that $\phi$ is, since it carries out its representational function only by means of the act of thought which uses it to represent, and anything whatever may be used as the representative item: provided that it has some internal structure.

Chapter 8 approaches the relationship between thought and representation in a rather different way. Here we shall look at some examples of non-representational thought. As we have already seen non-human animals do not use signifiers as signifiers. That is to say, they do not use representation deliberately or intentionally. (Perhaps I should make it clear here, once more, that I am not concerned with empirical questions about the particular capacities of different species. But since the non-human species, with the possible exception of the apes, give no indication of using signifiers wittingly, most animal behaviourists, applying the law of parsimony, do not attribute witting use to these species. If however it turned out to be the case that dogs, or more plausibly dolphins, do in fact use some system of representation, that should not concern us. For our interest is in what it is, or would be, like to think without representation, rather than whether this is a fact about certain species.) And what we shall see in this chapter is that to the extent that a creature is unable to use signifiers wittingly, which means inter alia that it is unable to use signifiers as a means of 'calling to mind' absent items, there are major limitations to its thought processes.

As long as we operate with what I have called the commonsense model of images and other mental items (such as 'ideas') as objects in the
mind — objects which somehow represent, of themselves, external items of reality — we do not notice the problems which are involved in anthropomorphising the 'thoughts' of, say, the family dog. We can attribute beliefs and other mental episodes to it, and think that the only problem lies in ascertaining from an animal which cannot tell us, what its mental episodes are like. But the problem we are faced with here is not the epistemological problem of how we can find out about the mental states, but rather the logical or conceptual problem of what it could mean to attribute some mental content to an animal unable to use representational thought. This problem comes sharply into focus when we abandon the notion of mental images which 'picture' what they stand for. According to this notion (the one now abandoned) there seems to be no reason why dogs should not have images, just as humans do. Unlike languages, the meanings of images do not have to be learned, they simply speak for themselves. But as we have now seen (in Chapter 7) images are not to be identified with 'inner pictures'. To have an image is simply to think about some absent item in a special way which involves making some visual (or other sensible) characteristics represent the object or event as a whole.

In other words, our commonsense model of an image as a mental content which represents some external item of reality becomes open to two kinds of objections:

(1) The image is not an inner entity at all, but an act of thought about some external item of reality.

(2) No item represents without some act of thought which makes it representative, i.e. even if images were mental pictures which 'resembled' the external world this would not be sufficient to make them represent the world.

For these reasons, then, dogs (or any unwitting users of signifiers) cannot be said to think representationally about the world by means of images.

Thus, to say that animals have images is to attribute to them the capacity for representational thinking of a particular kind, and for this there is no evidence. Our attribution is, therefore, anthropomorphic. But even if this is agreed, it may yet be thought that there is good evidence for saying that animals are capable of other kinds of mental activity: they have beliefs, memories, and perhaps even knowledge. Such facts about them can be inferred inductively from their behaviour. For example, a dog jumps and yelps around the trunk of a tree where a cat is hidden: it
'believes' the cat is hidden there (we might even say this is a justified true belief because it has seen the cat run up the tree). The rat has 'learned' that food lies behind the door with the circle on it: it has the 'memory' of the training trials, and so on. Are we then to say that animals are capable of representational thinking in these respects, at least? Or is it, rather, that there is a kind of thinking which is not representational?

The answer which will be given to these questions is that it does make sense to talk about the beliefs, memories, etc. which animals have; but that, insofar as it does, the kind of thinking which is implied is non-representational and can be given an explanation in SR terms. The question then is how exactly this kind of thinking differs from representational thinking: is the difference between the two kinds, or perhaps the two levels, to be explained in terms of a mental content which 'stands for' an 'outer' object; and is consciousness to be explained in terms of this? It is true that we have experiences which we may want to describe as 'introspection of mental content'. And we are surely not wrong in believing that we do introspect some mental phenomenon. But that mental phenomenon owes its existence to an act of thought about some reality quite separate from mind. All so-called 'mental contents' have items in the world as their ultimate objects and referents. We saw that this was so in the analysis of thoughts and their contents in Chapter 3. We shall see the wider implications of this fact when we examine some of the differences between representational and non-representational thought. The difference between the two may, in fact, be seen in terms of mental content. Non-representational thinking yields no introspectible mental content; representational thinking on the other hand presents us with what we can think of as 'mental content'.

The last part of this chapter deals with the question of how this mental content must be analysed in order to avoid a position analogous to the one we have already rejected in the particular case of images - that images are mental pictures which 'stand for outer objects'. The question now becomes much more general, and leads us to a final discussion of representational thought i.e. an act of thought which combines in the present many diverse features of the absent and the possible.
8.1 Non-representational (animal) thinking

First we shall see that, to the extent that 'mental' activity can be attributed to animals in terms of the available evidence, we have no grounds for positing representational activity. What has been shown in the earlier chapters is that there is never any representation which speaks for itself. As we saw in Part II, the signifier is no better than the intelligence that uses it. It is because of this crucial fact, that it makes no sense to ascribe mental states such as beliefs, hopes, desires, etc. in the full human sense of these states to non-human animals (excluding perhaps the other primates).

As we noted earlier, the problem is sometimes put as if it were the epistemological one of finding out what an animal's 'thoughts' are. But the problem is rather what it would mean for a non-language-using animal to hold beliefs, propositional attitudes and so on. Does it mean that the animal has some brain content which we could in principle discover by observation and experiment? Or does it mean that the animal has some mental state which if only it had language it could tell us about? In the same way that we might want to say that an animal can act intentionally (deliberately) we might also want to say that it can believe certain things to be the case even though it cannot tell us or even perhaps know that it believes. How then are we to cash the claim that the animal believes p? Suppose we take the example of the dog that chases a cat up a tree, the cat finds sanctuary out of sight in the boughs at the top of the tree, and the dog continues to jump at the trunk of the tree, scratching and yelping. This we may say is evidence that the dog believes that the cat is up the tree.

But suppose that the animal is physically prevented from behaving in this way. Can we then say that the dog holds the belief that the cat is up the tree even though it has no way of showing us that it believes that? It might be argued that we can if the dog has the appropriate internal state - the 'internal' state being either a brain state or a mental state. Let us first consider the case for a brain state.

8.1.1 Can an animal belief be identified with a brain state?

In his book Content and Consciousness, D.C. Dennett has analysed a case which we might describe as a case of 'rat belief'. The rat can discriminate between food doors which are marked with circles and squares, and jumps at the door which leads to food. Thus we might say that the rat
believes that the circle represents food. But now suppose that we do not observe the rat's overt behaviour. Can we tell that the rat holds the belief that the circle represents food? As a first step to doing this we might investigate the animal's brain to see if it could discriminate between circles and squares. As Dennett suggests, we could in principle record the afferent activity (input into the nervous system) when the rat's eyes are presented with circles and squares. We might also discover that the animal's afferent analysis system had unique and different outputs for circles and squares. And then we might ask whether these different outputs are enough to indicate that the animal discriminates circles from squares. Dennett answers this question by saying:

"In one sense, it would. This is the sense of discrimination of interest in research into pattern recognition devices, where all that is at issue is whether or not the system is capable of producing outputs - whatever they may be - that co-occur with the critical patterns of the inputs. In principle we could know that in this sense an animal could discriminate circles from squares without ever examining its overt behaviour. This is not yet discrimination by significance, however. We would not give as the conclusion of this experiment that the animal could discriminate circles as circles and squares as squares."

(Dennett, 1969, p 75)

As Dennett goes on to point out, there is no sort of experiment that could be devised even in principle which would test such an hypothesis, because circles and squares have no bearing as circles and squares on the life and activities of the animals. They can serve as right- or left-turn indicators, or as cues to food. These are uses which the animal can indicate overtly by behaving in the appropriate way, e.g. finding and eating the food. There is something that a rat can do with a food pellet such that it makes a difference whether it is a food pellet or a marble - to discriminate the food is to eat it. But this is not so with circles and squares. Even at the behavioural level, therefore, there is nothing that an animal could do to show us that it recognised the significance of circles and squares as circles and squares. On the other hand the animal could indicate behaviourally that it believed the symbols to be food indicators. If this is so, can we not find evidence for this in the animal's brain, just as we can find evidence for the discrimination (in a certain sense) of circles and squares?

What we are looking for, then, is some brain state which indicates that the rat gives to circles and squares the significance of 'food indicator'.
a significance which the rat can appreciate, as it demonstrates by its behavior. What we are saying is that the significance an item in the environment can have for a creature is limited by the creature's behavioral repertoire, but that this should also be evident in the animal's brain states. And, again in a certain sense, this is true. But it is not true in the sense that the animal has some central 'brain state', mid-way between input and output - on the analogy of a telephone exchange which connects incoming calls to outgoing calls. In order to see why this is so we need to go through some elementary neurophysiology.

In discussing the nervous system, neuro-psychologists often use the analogy of a 'wiring system' for the chain of nerve cells which connect up input (stimulus) with output (response). At the afferent end receptor cells are stimulated by some external stimulus and this starts up a chain of electrochemical events - the firing of neurones - which leads to the central nervous system, where the nerve fibres carrying the incoming message enmesh with the efferent (output) nerve fibres. So, to take a very simple example - the Patella reflex - the receptor cells which are caused to fire when the knee is tapped start off a chain of events which ends with the jerking of the foot. The same sort of thing happens, via a more complicated series of interconnections, when the receptors of the rat's retina fire in response to the stimulus of the circle or square, and the output in this case is the rat's jump at the circle or the square.

All of this might lead us to suppose that the central nervous system (brain or spinal cord) is some kind of analyser which sifts through the incoming messages, assesses their significance and then selects the appropriate output. This situation might be represented by the following diagram:
But this would be a misleading way to put the matter, because there is no analyser or brain reader which first assesses the significance of the message and then selects the appropriate response. All that happens is that an input chain gets linked up with an output chain, e.g. A with B (see diagram), but even now we cannot say that for A to connect with B is for the analyser to have interpreted the significance of A as, say, a circle and to have assigned the appropriate output B. At this stage, where the afferent-efferent intermeshing takes place, the response is still undetermined, because there are many more choice points along the wiring system before the output of overt behaviour is realised.

Until we have traced a pattern of neurone firings right through to the final point - behavioural output - we cannot say what the significance of the afferent message was. There is never any point at which we can interrupt the chain and say: this is the significance or the content of the message from the afferent network. In other words, at the level of brain events, there is no content or significance to some given input other than its final output. It is important to appreciate this fact, or else we are left with the model of the analyser of 'brain reader', both of them merely sophisticated versions of 'the little man in the brain' who understands, interprets and in general intelligently uses the brain. And this, of course, is to rob the brain of just those intelligent functions which we are trying to explain. We need not here go into the question of how the afferent impulses link up with the 'right' efferent emissions (if they are not selected by some brain analyser), except to say very briefly that at birth there are all sorts of possible connections between afferent and efferent impulses. Some of the connections are probably pre-wired genetically, and some of them get stamped in during later development as we learn environmentally-appropriate behaviour.

What can be seen from the above is that no stimulus has any intrinsic significance, as a physical event, except what accrues to it in virtue of the brain's discrimination. The idea of a stimulus being
recognised by an animal, and meaning something to the animal, prior to the animal's determining what to do about the stimulus is a conceptual mistake:

"In the brain, discrimination of afferents according to their significance just is the production of efferent effects; differential response to afferents, and hence it does not make sense to suppose that prior to the production of an efferent event or structure the brain has discriminated its afferents as anything at all." (Dennett, 1969, p 74)

By now it should be clear why there can be no brain state which has the content of a belief or any intelligent content at all. And for the same reasons it makes no sense to hypothesise that if only we could look inside the animal's brain we might be able to ascribe to it the belief that it is unable to express because it lacks the linguistic means of expressing that belief.

8.1.2 Can an animal belief be identified with a mental state?

So far, we have considered only brain states as candidates for the ascription of content, where there is no overt behaviour which might be said to constitute a belief. We have not been successful in making this ascription of content to brain states, but this does not yet rule out the attribution of beliefs to animals who never express those beliefs in overt behaviour. We can perfectly well attribute unexpressed beliefs to people, without any reference to brain states. The content of a belief might be ascribed to me in virtue of some mental state or disposition, which I may or may not have explicitly articulated to myself in language. Perhaps I have never expressed the belief in so many words, but it may be implicit in other attitudes that I have expressed in language or in behaviour. Could it not be the case, then, that non-language-using animals might have the mental state of belief while not having the language to express it? We might be able to get at this mental content if we could (by means of some kind of telepathic apparatus) tune into the content of other minds.

We might be persuaded to think that this could be the case, because of our own human experience of introspecting and finding some content which does not appear to be verbal. For example, I may be aware of something like a pain or some other sensation, or of some vague impression or 'feeling' or of a sudden memory image, etc. And if people can have mental events which are non-linguistic, why not animals? Animals indicate by their behaviour that they remember things, so surely, we might say, they must have 'memories'? In order to answer this we need to look
more closely at what is involved in introspection and 'awareness', also at the notion of a 'content' which is introspected. Dennett takes us some of the way in this inquiry.

He makes a distinction between two kinds of awareness (consciousness of something): one of which is connected with behaviour control, for example, in driving a car; and the other with introspection. In the case of behaviour control which he calls being aware 2 , a person may be aware 2 of the environment when driving: she follows the road, avoids obstacles, obeys traffic signals etc. Yet she may do all this for hundreds of miles without ever, or only rarely, introspecting (being aware 1 of) what she is doing. Someone may drive from home to work, thinking about a problem, and fail to have any recollection at all of the route or the drive. To be aware 2 means to respond to the environment in an intelligent way, but as can be seen in the case of driving we can do this quite effectively without knowing that we do it.

To be aware 1 is to be aware of what we are doing - to be engaged in some activity and to be consciously engaged in that activity, as for example when we first learn to drive a car and we are very conscious of depressing the clutch, the brake or the accelerator, of changing gear, of steering and so on.

These two kinds of awareness, as we can see, are separable - or else it would not be possible to drive along a complicated route without having any consciousness of doing so, or only a very vague sort of consciousness. But as Dennett points out in our ordinary usage of the words 'conscious' or 'aware' we are apt to run these two senses together, so that when we say that someone or something is conscious of or aware of x, it is not clear what we are saying. Non-human animals clearly possess one sort of awareness - that which Dennett calls awareness 2 or behaviour control. We can see them negotiating obstacles and generally responding to the environment intelligently.

But what are we saying when we say that the bird is aware of the cat or the dog is aware of the bone or that the bee is aware of the tree? We claim that they are aware of things because of their reactions to the environment: the bee must be aware of the cat in order to fly away as the cat springs, and the bee must be aware of the tree in order to fly around it. But we do not need to say any more about the nature of this awareness than we say about the awareness that is involved in human behaviour control in, say, driving a car. We don't need to say that the
bird is aware of the cat as a predator or as danger or even as a cat, and we don't need to say that the bee is aware of the tree as an obstacle, or that the dog is aware of the bone as a bone, in the same way that a human is aware of a bone.

However, although we need only attribute awareness to non-human animals in order to explain their behaviour, we are tempted to attribute the additional awareness that has been suggested above because of our own ability to make introspective reports. The reason we feel safe in attributing awareness of as to people is because people can tell us about awareness . As Dennett says:

"The human capacity for making introspective reports is seen as a mode of access to the content of awareness, and...its deliverances are seen as reliable - indeed conclusive - evidence of the content of awareness." (Dennett, 1969, p 169, p 116)

But, as Dennett goes on to point out, these two features of behaviour control and introspection do not always mesh as we would like. The driver may claim to be unaware of the route she took. We may perhaps bully her into admitting that she must have been aware of the curves, but this sort of acquiescence is not to be confused with the authoritative status of the introspector:

"There is an activity which is giving error-free introspective accounts of awareness, but it can be subverted by misplaced allegiance to the other feature of awareness that interests us: behaviour-al control. Consider the man who reasons thus: I must have been aware that the glass had reached my lips, or I wouldn't have tipped it. This man is not introspecting. He is speculating, framing a hypothesis on no more evidence than any other observer might have. He should have said: I was not aware of the glass at all; I was listening attentively to the conversation, and so cannot provide any privileged information on the perceptual clues that must have initiated my drinking." (Dennett, 1969, p 117)

Dennett suggests that these two senses of awareness are customarily mingled and confused in ordinary usage. So that when we say of the driver that she must have been aware of the curves under some description we are relying on the behaviour control sense of awareness, and when the driver says she was day-dreaming or talking she is relying on the introspection sense of awareness. Because of this confusion between the two senses we think, for instance, that when we say the dog is aware of the bone we are saying the same thing about the dog that we should be saying about a
person in saying that a person is aware of a bone. We note from the animal's behaviour that it responds 'intelligently' to its environment (the bone). And on the basis of our own personal experience of awareness, we are apt to assume that the dog's experience must be like our own. Dennett's distinction is a useful one in many ways, and, on the basis of this distinction he believes that:

"...it is at once clear what one could mean by saying that animals are not aware of things in at all the same way people are: animals are only aware of things, which is saying very little, since 'nothing in our definition would prevent certain cybernetic machines from also being aware of things. People are aware of things, but they are also aware of things, a possibility ruled out in the case of dumb animals. The temptation lapses to say we cannot know how animals are aware of things, and if only they could tell us. If animals could tell us, they would be aware of things, which is entirely different." (Dennett, 1969, p 120)

Intelligent behaviour control alone does not, then, give us a licence to infer any episodes of awareness in dumb animals. But, in the lack of any other evidence, intelligent behaviour control was our only justification for attributing an inner life of introspectible items and representational capacity to dumb animals. If we no longer have that justification we have no grounds for the attribution to dumb animals of thoughts and other 'mental events' such as seeing x as φ. If we are to exclude mental events such as the above, we must also exclude beliefs in the full human sense, where a belief is either consciously held or else is a potentially conscious belief, which is to say that it would be in principle possible to draw the holder's attention to the belief, and to obtain her recognition and acknowledgment of it.

This, of course, is not to say that we cannot talk about dumb animals as having beliefs as long as we are clear about what it is that we ascribe to them when we talk about them as having beliefs: we are not entitled to ascribe mental content of the awareness kind, but we may talk about beliefs which are implied by behaviour, as long as we remember that we have supplied the proposition which frames the belief. For example, it

1. I use the word 'intelligently' here in the way that it is often used about animal behaviour, i.e. environmentally-appropriate behaviour.
2. I say 'in principle' because there may be cases of 'unconscious belief' e.g. repressed beliefs, or a person may be 'persuaded' that she possesses a belief (e.g. by a psychotherapist) on the basis of her actions rather than any true 'insight', as in the case of the driver who retrospectively analyses her behaviour. But what is important in the case of humans is that there are always some beliefs which are accessible to awareness.
is legitimate to talk about the dog's believing that the cat is up the tree, or the rat's believing that food pellets lie behind the door, just on the basis of the dog's or the rat's behaviour, if the animal behaves appropriately. But to say this does not imply that the dog or the rat has the thought, 'the cat is up the tree', or 'the food is behind the door', any more than the behaviour control of the driver who obeys the traffic signals implies the occurrence of any thought about the signals.

The beliefs that we attribute to dumb animals are framed by us, the human observers; and we frame the belief in the form of some hypothesis or proposition which seems appropriate to the animal's behaviour and its environment, needs, interests etc. We can then look for some behaviour which supports the hypothesis. If we find the appropriate behaviour all it supports is a hypothesis about behaviour - it can tell us nothing about mental events. And if the animal does not behave appropriately, there is nothing further to be said - we have no means of ascertaining its supposed belief. The fact that most animals usually do behave in relatively predictable and stereotypic ways, masks the illicit presuppositions which are often made about their beliefs. We can get away with ascribing propositional content to non-linguistic behaviour because animals behave in predictable ways and usually do seem to support an anthropocentric hypothesis.

To take Dennett's example, we can say that Fido believes that beefsteak is food because our prediction that he will eat it when it is offered is unlikely to be falsified. But if Fido behaves inappropriately - for example, gathers together a little pile of straw, puts the meat in the middle and sits on the meat - it would be hard to know what belief to attribute to the dog. The behaviour does not support the hypothesised belief, but no other candidate is supported either, because the behaviour does not make sense in terms of what we know about dogs (Dennett, 1969, p 77).

8.2 Representational thinking

In 8.1.2 we saw that intelligent behaviour control can be separated from the introspection of mental phenomena, therefore the occurrence of the former does not imply the occurrence of the latter.

1. See Jonathan Bennett's discussion of animals as 'registering' propositions in Linguistic Behaviour (1976, 15 and 16). As a number of critics have noticed, Bennett has failed to appreciate how much is built into our way of talking about animal behaviour (B. Harrison, 1977(b) and J.R. Cameron 1977).
When an animal behaves intelligently, learns to jump at the appropriate food door, for example, we are not entitled to say that there are any accompanying mental episodes, unless there is other evidence for phenomena of this kind (any more than we can infer merely from someone's handling of a car at corners and traffic lights that she is aware of what she is doing). The evidence that we have of behaviour of non-human animals does not require us to attribute introspectible mental phenomena to them. This is not to say that they cannot think; but (so far as we know) their thinking is not representational thinking, because what is required for representational thought is the capacity to use signifiers as signifiers, and to know that one is doing so.

The last two sentences of the previous paragraph suggest that 'introspectible mental phenomena' are associated with representational thinking. And this, I think, is true. We have already met this view in Piaget's claim that representation is identical with thought, i.e. with all intelligence which is based on a system of concepts or mental schemes and not merely on perceptions and actions (7.1.2); and again in his contrast between the mere application of schemes in the sensory-motor period and the conscious awareness of those schemes in the concrete-operational period (Chapter 5). In what follows we shall explore this connection between introspectible mental phenomena (or content) and representational thought further, because now a second question arises.

It follows from what we have already seen that when we do have grounds for attributing awareness (as in the case of language-users), we then have grounds for attributing introspectible mental 'content'. So now we must ask what is the nature of that content. This is the same kind of question which we asked earlier in the case of images, extended now to all representational thinking. As we shall see, having what might be called 'mental content' is what distinguishes representational thinking from non-representational thinking.

Dennett's claim that only speaking creatures can have awareness appears to be related to the nature of this content. What is it that we are aware of, when we are aware of some content? Dennett gives some suggestions about the sort of answer we should expect to this question. For example, he restricts his use of both kinds of awareness to Intentional use (i.e. awareness of something, rather than just a generalised alertness).

One of the first things, then, that might be said of the content that we are aware of is that it is the content of some Intentional
description. Second, as we have already noticed, Dennett says that awareness is restricted to speaking creatures, but 'speaking creatures' may be used to refer to machines as well as people. The feature that is important to awareness, and which people and some machines have in common, is what Dennett calls a 'speech centre' between input and output. And this speech centre distinguishes this system (of the person or machine in toto) from the sort of system that was outlined earlier in the discussion of brain states, where afferent events linked up directly with efferent events, without there being any intervening 'interpreter' or any other kind of 'brain reader'. And, as we saw, this means that there could be no assignment of 'meaning' to any given input until there was some output in the form of overt behaviour. In the 'speech centre' system on the other hand, output may be expressed in language, without any other overt behaviour.

As an explication of the difference between these two afferent/efferent systems, one with a speech centre and the other without, let us look at Dennett's example of the perceiving machine (Dennett, 1969, section 13). The machine receives its visual input by means of two television cameras. It also has an analyser which produces outputs to which one has to assign significance by finding regularities between the scenes set before the cameras and the outputs. The next step is to program the machine so that a 'speech centre' takes over this job of analysing the input and converting the output into the form of English sentences, such as "I see a man approaching".

This machine would, of course, differ from a human in several obvious ways: it would have no capacity to lie about its reports, or to withhold them, to ask questions etc. It would "simplymindedly reel off reports of what it saw - giving almost Skinnerian verbal responses to its visual stimuli." (Dennett, 1969, p 109). But it would have one important characteristic in common with human perceivers: "it could not be mistaken about its 'mental' states". It could of course 'make mistakes' about the outside scene - for example, it could be tricked by the presentation of a dummy into making the report that a man was approaching, and this would result in an analyser output that was mistaken relative to the outside scene. It would not be mistaken relative to the mental state, because that would be a logical impossibility, since the verbal output would, in a sense, be part of the mental state.

Another way of making this point is to say that the verbal output is an expression of the mental state, rather than a report about
it, made on the basis of some inward intuition. This situation can be compared to some feedback system, such as a thermometer. The thermometer does not have inside it a mechanism which ascertains the temperature and then gives the appropriate reading. It is designed in such a way that the mercury or alcohol responds to the heat by rising in the tube, and we interpret the output by calibrating the tube to mark off a 'reading' of the temperature. So for the thermometer to have responded to the outside event - the heat of the atmosphere - is for the fluid to have expanded to the point where its upper level is at a certain point in the calibration. So, barring physical malfunctions, the thermometer cannot help but 'report' accurately its 'analysis' of the temperature. Likewise, for the perceiving machine, the only possibility of error (barring verbal errors) is relative to the outside world. It cannot misidentify the output which comes from the analyser, which is the same logical state as the speech centre input. In other words, as Dennett says, "it cannot be mistaken about that which it seems to see".

The point that Dennett is making here, when applied to people becomes the Wittgensteinian point that: human utterances about certain sorts of 'inner states' - those which we think of as being infallibly introspected, such as perceptions, sensations etc. - are not reports of some kind of inner content, but rather expressions of that content.

"In using this ['I seem to see...'] idiom a person is not intentionally expressing the input of his speech centre, for he has no notion of speech centre input at all, most likely; what accounts for the immunity to error is nothing the person does - no personal action, intentional or otherwise - but what is going on in his brain." (Dennett, 1969, p 111)

In other words, when a person is uttering sentences about 'inner states' such as perceptions, sensations, etc., what is uttered is the verbal expression or output of some cerebral event, not a report of some mental event, although we may be misled into thinking this as a result of the language we use.

However, these 'inner states', such as perceptions and sensations which can be infallibly introspected, account for only a small segment of our rich experience of supposed inner life. All the cases we have considered so far are the kinds of 'experiences' a perceiving machine might introspect. But these experiences, as Dennett recognises, add up to only a pale copy of a human perceiver, because no machine has been made which provides a mechanism by which the machine may withhold or lie about or
imagine fictitious experiences. There seems, in fact, to be a whole wealth of human experience which is not available to the sort of perceiving machine which Dennett has described. Can we account for this surplus experience, perhaps, by saying that the mental event (thought, image etc.) is what is reported when the cerebral state is expressed? But thoughts and images are no better candidates for the ascription of content than brain states.

Dennett describes thoughts, images and "other colourful performers in the 'theatre of consciousness'" as 'non-referential' terms (Dennett, 1969, pp 13, 14, 131-146). As I understand him in his discussion of images etc., he is saying something similar to what we have already seen: that in spite of the persistent illusion of 'mental pictures', the referent of the term 'image' is not an internal picture. My account of the image (in Chapter 7) was derived from Sartre's analysis; and in the next section we shall return to Sartre's analysis of consciousness and mental events.

8.2.1 Sartre's analysis of consciousness: reflected and unreflected thought

In The Transcendence of the Ego, Sartre takes up what he sees as the main significance of Husserl's analysis of consciousness: its Intentionality, its directedness towards an object which is separate from consciousness. Sartre talks about two levels or degrees of consciousness, and these two levels correspond in some respects to Dennett's two kinds of awareness.

The first level, which has a rough correspondence with awareness₂, is unreflected consciousness. This consciousness may take any of the many possible modes of Intending, e.g. knowing, perceiving, desiring, believing etc., but what distinguishes any mode of unreflected consciousness is precisely its unreflected nature. There is no introspection involved at this level. The second level, on the other hand, is reflected consciousness; and this corresponds roughly to Dennett's awareness₁. Sartre talks about unreflected consciousness as the first and 'primary' level, because this form is logically prior to reflected consciousness. By that he means that the first can occur without the second, but not vice versa. Every act of reflective consciousness implies an act of unreflected consciousness. This is not to say that Sartre wants to split consciousness into parts (e.g. like the tripartite consciousness of Freud). The two levels are different aspects of the one consciousness.
It is important to recognise this point because Sartre holds the view that consciousness is neither an object nor a container of objects: it is nothing more than a 'directedness' towards objects. He would not, therefore, want to be committed to the Lockean view that consciousness finds objects within itself, or that there is something going on analogous to an 'inner perception' of 'ideas'. His conception of reflective consciousness is closer to Aquinas' understanding of the intellect which knows itself in its own acts. Sartre uses metaphors such as 'clear' and 'translucent' (describing consciousness) and 'opaque' (external objects of consciousness) in order to convey that in reflected consciousness we are not looking at some entities in consciousness, but we are aware both of the object of and the intentional act of consciousness (Sartre, 1957, pp 40-42). Even at the level of unreflected consciousness, the implicit knowledge of the act is there, but the focus is entirely on the object, as for example in the thought about the absent Peter the thinker is entirely preoccupied by Peter, yet is perfectly capable of switching to a reflected level and explicitly recognising both the thought about Peter and the fact that there is a process of thinking about Peter going on.

It might be objected here that as Dennett has shown, we are sometimes not even implicitly aware of our intentional acts of consciousness, for example, the perceptions of the driver whose thoughts are otherwise engaged. But this would not, I think, pose a problem for Sartre. There would be no adverse consequences for his position if he conceded that there may be some episodes of unreflected consciousness which we cannot recover. His point is rather that the way we become aware of our intentional acts (on those occasions when we do have an episode of reflected consciousness) is not by inspecting contents of the mind, but by shifting the focus of attention to what in a sense is already known. If it were not already known - though not explicitly - no amount of attempted examination of the mind's supposed contents would provide the knowledge. And we can find some support for this view in Dennett's example of the driver who could not remember being conscious of the drive - she only inferred that she must have been.

What Sartre wants to convey by the 'translucence' metaphor in particular is that reflective consciousness operates at a second-order or metalevel and is directed 'through' the first or primary level towards the intended object of consciousness. Consciousness, then, for Sartre, is nothing but an ongoing stream of 'intendings' (intentional acts) of
But when we introspect any Intentional act we become aware of not just this perception - what I now perceive in this instant of perception - but of what I have also perceived in the past. There is what Husserl would call a 'synthesis of noemata', so that I 'see' more than I actually perceive in this instant which is introspected. For example, I am looking at a box and all I can actually perceive in this one act (without shifting my position or the position of the box) is at most three sides of the box. Yet in my experience there is a synthesis of all the past perceptions I have had of the box, from many different perspectives, so that they become unified in the one experience, and I do not notice that I can in reality perceive only three sides of the box. What I seem to see is the full six-sided cube. I build into my perception not only what I perceive in this instant but also many other things that I know and have experienced about the box from past Intendings of the box. What Husserl says about this box - the one I seem to see - is that it is a transcendent object. That is to say, what I experience at this moment is, a construction, as it were, out of my immediate sensory experience (i.e. the visual display from three sides of the box) and what I know, from previous experiences and stored information. There is no such entity as a box that can be seen from all perspectives simultaneously.

Sartre develops this line of thought further in his analysis of emotional states such as hatred. For example, hatred of Peter is a state that can be apprehended by reflection. The state "is present to the gaze of reflective consciousness. It is real." (Sartre, 1957, p 61). But we must not conclude from this that hatred is some inner state that can be perceived. I may feel a profound convulsion of repugnance and anger at the sight of Peter (and this is felt at the level of reflective consciousness, so that I am conscious of this feeling). As Sartre puts it, "the convulsion is consciousness. I cannot be mistaken when I say: I feel at this moment a violent repugnance for Peter. But is this experience of repugnance hatred? Obviously not." (p 62) Why not? Because, if I limit myself to what I am conscious of at this moment, it is something instantaneous:

"I could not even speak of hatred any more. I would say: 'I feel a repugnance for Peter at this moment', and thus I would not implicate the future. But precisely by this refusal to implicate the future, I would cease to hate."

1. There are obvious similarities here to Hume's conception of the self as nothing but a bundle of perceptions. (Hume, 1946, Bk I, Pt iv, §6).
The state of hatred, in other words, like the box which can be seen from all sides simultaneously, is a transcendent object. The explanation of this transcendent state is like the explanation of the transcendent box. When I experience Peter, I not only have the present feeling of repugnance, I project on to him all the previous antagonistic feelings, and the expectation of future ones. These noemata become synthesised or united into one transcendent object, which then appears to be an entity, a state which is located within consciousness.

8.2.2 Pure and impure reflection

Sartre goes on to discuss the effects of this state which appears to be located within consciousness, a state which is then seen as being the cause of the present feelings of repugnance. But this need not concern us here. Our concern is with the transcendent state of hatred and with the illusion that it is within consciousness. But notice that Sartre makes a further distinction in this connection: the distinction between pure and impure reflection (pp 62-65). The first is purely descriptive of the instant which is being reflected upon (just this flash of repugnance), while the second is also introspective, but introspective of the synthesis of past noemata (the unified state of hatred). He calls this latter kind of reflection impure reflection just because it does not confine itself to the immediate phenomenological data, but instead surveys the synthesis of many past consciousnesses. The distinction between what is actually experienced in this moment and what has already been experienced and is now recapitulated passes unnoticed unless I make a deliberate attempt to 'purify' my reflection. (We are all aware of this situation at times when we make the attempt to describe, for example, what the camera can 'see'. Photographers and painters can carry out this attentive looking with ease, but it is not so easy for the untrained eye. For example, the apprentice painter may have difficulty in analysing just what tones and shapes are contained in the still life in front of her.) Only impure reflection gives rise to a transcendent object. But most of our reflective acts are acts of impure reflection. If they were acts of 'pure' reflection which did not go beyond this instant of consciousness, we should have no sense of continuity.

Husserl recognises this point in Ideas, in his explanation of the synthesis of noemata, by means of the notion of an overlapping of boundaries or 'horizons'. In any phenomenological experience there is a 'nucleus' (or 'theme') and a horizon. If, like Husserl, we take a
perceptual example, we could say that the nucleus corresponds to the centre or point of focus in a visual field and the horizon corresponds to the periphery of the visual field. What I focus on is my point of interest, yet I am also vaguely aware of other data around the point of interest, and the other things may become explicit if I change the focus of my attention. To put it another way, each theme contains further themes on its horizons and it is this overlapping of noemata which both gives a unity to experience through time and space and makes each experience a complex synthesis of many different ways of looking at and thinking about any given thing, event or situation. (We found this same conception earlier (7.1.1) in Merleau-Ponty's analysis of time.) Not only does the overlapping of noemata give a unity to experience but it makes it difficult to separate a 'single' experience from others.

Just because of this overlapping of noemata, most of our reflection is 'impure', a synthesis of many connected noemata. If I can manage a 'pure' reflection upon this moment of Intentional act then I attend to what really is the case: for example, the object of my Intentional act – Peter – and the act itself – a flash of repugnance directed towards Peter. There is no transcendent object to be located in consciousness, and I know my act, not by observation, but with the certainty that comes from being the agent who performs the act. ¹ In this case – of pure reflection – I know my own act and recognise the Intentional object as separate from consciousness, hence there is no need to locate some inner object or content to consciousness.

But as we have already observed these instances of what Sartre calls 'pure' reflection are rare, and are made possible only by attentive reflection. And if all our reflection were of this nature then all we should have would be a series of discrete instants of reflection, our experience would be lacking in both unity and continuity. However, since most of our reflection is 'impure' we construct 'transcendent objects' which might be explained as a system or structure of noemata.

This analysis of pure and impure reflection provides a clue to the explanation of the illusion of mental contents. Consider again the distinction between the way one knows by observation and the way one knows one's own acts. One of the differences in these two kinds of knowing

1. cf. Anscombe's analysis of the non-observational certainty I have of my own bodily movements in intention (Anscombe, 1957, §8).
In that the first, knowing by observation, takes an object, namely the thing or state of affairs that is known. But the second, knowing one's own acts, does not take an object - or only indirectly, and that object is not the consciousness which is known. It is the primary level of consciousness, the Intentional act of, say, desire that takes an object, not the knowing of the desire. The knowing in at the second-order level of consciousness: the reflective act by which both the desire and its object is recognised. The different 'feel' of these two kinds of knowing is so fundamental to them that we don't ordinarily confuse the two. Hence, as Anscombe says in talking about physical postures:

"Where we can speak of separably describable sensation, having which is in some sense our criterion for saying something, then we can speak of observing that thing; but that is not generally so when we know the position of our limbs. Yet, without prompting, we can say it." (Anscombe, 1957, § 8)

The same applies to a flash of anger or repugnance. We may perhaps not recognise it (we may repress the recognition), but if we recognise it, we know it without any separable sensation. It is true that if we have become trained in recognising our emotions, which usually means becoming sensitive to affect and physiological change, we may notice signs like an increase in the pulse rate and body temperature, constriction in the temples or chest and so on, but we don't notice these sensations and then infer our own anger (in fact, these same sensations may belong to other emotions also). Noticing the sensations is becoming aware of the anger - although it might be said to be awareness of anger in a more trained and analytical way than usual. And because we can tell the difference between this sort of knowing and the knowing that is by observation, we do not expect any criteria to be offered in the first case, whereas there is an implicit expectation of criteria in the second.

What I am suggesting here is that these two kinds of knowing - knowing by observation and knowing one's own acts:

(1) usually have a fundamentally different 'feel' to them; and

(2) are to be distinguished by the taking or not taking of an object.

How do these two points bear on pure and impure reflection? Pure reflection leads to non-observational knowledge of one's own acts, the Intentional acts in which one is an agent. There is a flash of repugnance towards Peter and it is recognised as such. Since this feeling
is recognised as being knowledge of one's own Intentional act – that kind of knowledge that the agent has of her own act – there is no expectation of an object to be known in consciousness. The only object here is the object of the feeling of repugnance. But what happens to impure reflection?

In this case the focus of attention does not confine itself to what can be, as Sartre says, known immediately and with certainty, namely this instant of consciousness. Instead it ranges over the synthesis of noemata, which become unified into the state of hatred, and we find ourselves in a state of impure reflection. So that what we have now, in impure reflection, is not the agent's knowledge of her own act in the moment of action, but something much more like observational knowledge. We remember our past feelings of repugnance, we anticipate more in the future, and from these we synthesise and construct a state of hatred which we seem to observe. Hatred thus becomes an object and its location within consciousness open to observation. This is the way it seems to be. But if we carry out the phenomenological reduction, no doubt we shall analyse this apparent state into an infinite number of Intentional acts, each of which has its object, an object, that is, which is separate from consciousness – for example, that self-same Peter the object of so many hostile Intentions. And then we shall see that the object of reflection is not just an entity in the mind, but in fact our reflection makes us aware of many transparent layers of reflected consciousness, each one of which has its own object.

I said before that the kind of knowledge that an agent has of her own act is not usually confused with the kind of knowledge that we get from observing some object or state of affairs (like the difference between knowing the position of one's limbs and looking to see where they are). But the position we have reached now is not quite so straightforward. It looks as if there is some confusion between the agent's knowledge and observational knowledge, just as, according to Sartre, there is a tendency to behave as if impure reflection (which "affirms more than it knows") were pure reflection. "Reflection", he says "has its certain domain and its doubtful domain, a sphere of adequate evidence and a sphere of inadequate evidence." (Sartre, 1957, p 64). The "sphere of adequate evidence" is that which is known with the agent's certainty of her acts, namely by pure reflection: which is directed towards and through consciousness. The "sphere of inadequate evidence" is that which is knowledge of an object. Hatred, says Sartre, is a real object, but it
is transcendent and outside consciousness – though, as we shall see, mind-dependent. But (pure) reflection, as I said a moment ago, is directed towards and 'through' consciousness. Hence, if we think when we introspect that we are introspecting our consciousness and we find an object, then it is not surprising that the object seems to have been found in consciousness. Thus the tendency to go beyond pure reflection, which confines itself to the present moment, to remember or anticipate further feelings, leads to the construction of a transcendent object (the synthesis of many feelings) which is really outside consciousness, but appears to be within consciousness. It seems then that the confusion about the proper location of objects, the tendency to posit transcendent objects within the mind, arises out of the phenomenon Sartre calls 'impure reflection'.

8.2.3 The function of the transcendent object

Perhaps we should try to purify our reflections in the interests of recognising our genuine Intentional acts? Sartre's very choice of terminology carries with it the implication that the one is the 'proper' kind of reflection, while the other is less adequate. But consider what would be the case if we were to carry out this kind of analysis every time we engaged in reflective consciousness. Sartre himself has recognised it. He makes the point in the following way:

"The unity of a thousand active consciousnesses by which I have added, do add, and shall add two and two to make four, is the transcendent object 'two and two make four'. Without the permanence of this eternal truth a real unity would be impossible to conceive, and there would be irreducible operations as often as there were operative consciousness." (Sartre, 1957, p 38)

Every act of pure reflection would require that all those 'thousand active consciousness' were recapitulated every time I know that two and two make four. The transcendent object, then, represents all those earlier active consciousnesses, which are still implicitly known by means of the transcendent object.

This brings us back again to the confusion between mental act and object that we noticed in Descartes' analysis of 'ideas'. We also noticed Descartes' tendency, related to this confusion, to try to detach the act of thought (the thought itself), from its content, an attempt which seemed to lead to the reification of the content. We are now in a better position to understand this reification. The illusion of some reified content, some transcendent object, located in consciousness,
protection is from the task of engaging in a massive reflection over a
thousand past and present acts of consciousness. The content of thought,
although expressed in a single proposition, such as 'the earth is 90
million miles away from the sun', is not just a simple irreducible thought,
but rather a synthesis of meanings, which could be unpacked into an
infinite number of further propositions - about the concept of a mile,
what it means to measure, and so on.

Dennett also has recognised this point in his discussion of
language and understanding, where he says when someone utters a sentence
we take it that the utterer knows or believes what the sentence states,
understands the statement that has been made. But then the question arises
about what is involved in understanding a statement? For example:

"What are the conditions that would suffice to show
that a child understood his own statement: 'Daddy
is a doctor'? Must the child be able to produce
paraphrases, or expand on the subject by saying his
father cures sick people? Or is it enough if the
child knows that Daddy's being a doctor precludes
his being a butcher, a baker, a candlestick maker?
Does the child know what a doctor is if he lacks the
concept of a fake doctor, a quack, an unlicensed
practitioner? Surely the child's understanding of
what it is to be a doctor (as well as what it is to
be a father, etc.) will grow through the years, and
hence his understanding of the sentence 'Daddy is a
doctor' will grow. Can we specify what the child
knows when he tells us his Daddy is a doctor? It
may seem simple: what the child knows is that his
daddy is a doctor - that is, the object or content
of his knowledge in this case is the proposition,
'that Daddy is a doctor'. But does the child really
know this? One is inclined to say that he only 'sort
of' knows this, or 'half' knows this. If the propos-
tion is to be the thing known, we have to allow for
quasi-knowledge of propositions. Yet one might argue
that when the child only half knows the proposition
there is still something - something somehow 'less' -
that he fully or really knows." (Dennett, 1969, p 183)

What Dennett says about the child applies equally to the adult.
Do I know that table salt is sodium chloride? If I do what does that mean?
What I know when I know that table salt is sodium chloride is different
from what the chemist knows when the chemist knows it. But what is
important to our present interest is not that one person understands more
than some other person when both use the same proposition, but that for
every user there is an infinite number of further propositions which may
be unpacked from the one statement. And when we think some thought,
whether explicitly expressed in a verbal proposition or some other vaguer
not yet linguistic thought, the content of that thought always represents a unity of other thoughts.

As Sartre has noticed, the image-form of thought has a special function (Sartre, 1948, p 140). If an image appears it is never the result of a chance association, never a mere contingent accompaniment to thought. As we have seen, the image is thought itself. Now we are in a better position to see the kind of thought which is involved in the image form. Sartre describes it as 'intuitive' (p 140). The image presents an intuitive grasp of various meanings, often at different levels, such as cognitive and the affective. We can see how cognitive and affective meanings are intrinsically united in the one image by considering Sartre's example of the image of the delicate white hands (pp 80/81). They are the object of both knowledge (two fine white hands) and feeling (hands which are beautiful and desired). The consciousness of the hands is presented in the form of an image which intrinsically combines both the knowledge and the feeling (affectivity):

"...the knowledge that penetrates them gives them to me as 'the hands of such a person, white hands, etc.' and at the same time the feeling reproduces most poignantly what there is of the ineffable in the sensations of whiteness, of fineness, etc.... I know that the object which is there, transcendent, confronting my consciousness, stands for two white and delicate hands; at the same time I feel that whiteness and that delicacy, and particularly the nature of hands always so intimate, so personal."

(Sartre, 1948, p 81)

The cognitive-affective synthesis described here must be part of the fundamental structure of the image form of thought. There is nothing that could be added to or taken away from that image which would make it any the more or less an affective consciousness. If the thought involved only knowledge of the white hands, there is nothing that could be subtracted from the detail of the image which would make it include only the cognitive and not the affective content.

We can see why this is so if we bear in mind what we have already said about the image: it is a representation, but its representational quality lies in the act of thought. The image, then, is a way of being conscious of a number of meanings at once, not in the explicit manner of propositional knowledge, but intuitively and inexplicitly.
2.3 Conclusion

What I have tried to elucidate by means of these examples supplied by Sartre and by Dennett, is the phenomenon of 'the transcendent object'. This phenomenon can be identified as a synthesis of many Intentional acts, but once these acts (or rather their noemata) have been synthesised it is easy to reify the product (i.e. the synthesis of noemata) and to think of it as an object or state in the mind. This is all the more understandable in view of the fact that the transcendent object does not exist in the world. There is no such object as a box whose six sides can be seen simultaneously (from the outside), or a thimble which can be fully seen both from the outside and the inside. The transcendent object, then, is mind-dependent. But it is not a content which simply exists in the mind and can be inspected within the mind, or which, per se, stands for something outside the mind. It is the product of many Intentional acts, a synthesis of their contents but (as we saw in Chapter 3) these contents cannot be separated from the acts of thought. Nevertheless we, like Descartes, often find ourselves under a compelling illusion. Transcendent objects appear to become separable mental contents.

The purpose of this contrast between the thinking of non-language-using creatures and the mental life of humans was to bring out the fundamental distinction between two modes of thought. In the first case, there is no need to posit anything more than stimulus-response interaction between the creature and its environment. This is, of course, not to deny to non-language-users the capacity to think, or the capacity for sensations and experiences such as pain; but we must, I think, understand these thoughts and experiences as being directly related to the present stimulus, rather than as being an awareness of some introspectible inner content. Because of the obvious difficulties involved in trying to conceive of thought which is entirely confined to awareness₁, we have a natural tendency to attribute awareness₁ to all sentient creatures. Even when we take an example like Dennett's case of the unaware driver, we are talking of a creature which does possess the capacity for awareness₁: it is only that reflective thought is temporarily out of action. But we may well say that thought from which reflection is only temporarily absent is a very different phenomenon from thought which never had the capacity for reflection. After all, even the most inattentive driver has some sort of monitoring system which at any moment will switch over to awareness₁. We can perhaps gain more insight into a permanent state of unreflected thought if we turn once more to Sartre: this time to his analysis of the helplessness of the dreamer.
Sartre's concern (in *Psychology of the Imagination*) is not with the classic problem raised by Descartes in the *Meditations* of whether it is possible to distinguish clearly the waking state from the dream state. There is no need to do that, since no one really has any difficulty in distinguishing them - once the comparison is made. The real problem is how we are to characterise this difference that we all feel. Sartre's resolution of the problem is briefly that only in the waking state are we able to put the question, to make the comparison. In the dream state we may assume, or behave as if we are awake, but we cannot put the question which involves a comparison and thus a reflection. In other words, the dream state is the extreme of unreflective thought. The dreamer is even more 'enchained' than the ordinary unreflective thinker. Consciousness is entirely preoccupied with its object. In the dream world there is no room for possibility. Once the question is put: 'Am I or am I not dreaming?' with a genuine disjunction of possibilities, the spell of the dream world is broken and the question is at the level of reflective thought.

The importance and interest of the dream state, as Sartre recognises, is that:

"...what constitutes the nature of the dream is that reality altogether eludes the consciousness which desires to recapture it; all the effort of consciousness turns in spite of itself to produce the imaginary. The dream is not fiction taken for reality, it is the Odyssey of a consciousness dedicated by itself, and in spite of itself to build only an unreal world. The dream is a privileged experience which can help us to conceive what a consciousness would be which had lost its 'being-in-the-world' and which would be, by the same token, deprived of the category of the real."

(Sartre, 1948, p 206)

The point that Sartre is making here is that if our whole lives were spent in a dream state, we should lack the capacity to consider the possible, and against a background of the possible to recognise the actual. This capacity - the capacity to consider possible as well as actual worlds - is precisely what characterises the faculty of imagination according to Sartre. And here we can see similarities to the notion of disengagement which is central to Piaget's account of representational thinking.

The dream, as Sartre says, a privileged experience. It enables us to conceive of what other modes of thought could be like. It may, for example, help us to grasp the nature of non-representational thought. But now it might be objected that the dream is surely a paradigm of
representational thought? The answer to this is No - for the following reasons. Representation involves the witting use, at least in principle, of some representative item to stand for something else. The dreamer is unaware of the status of his thought in relation to reality and more importantly, unlike the imager, is in principle unaware of its status at the time of dreaming. The dreamer can of course reflect on the dream in a later waking state, and then thought may be representational, but not at the time of the dream.

The dream state, then, helps us to conceive of a kind of thinking which is tied to the here-and-now, that is to say, thought which because it is non-representational lacks access to other worlds.

In contrast to thought which is tied to the here-and-now, we turned in the second half of this chapter to thought which has some introspectible 'content'. This 'content', I attempted to show, has a close connection with representational thought. In the same way that images can be analysed as species of representational thought, that is thought directed towards some absent items, so can all mental phenomena such as beliefs, emotions etc. Now in the last chapter I want to turn to the relationship between representational thought and reality.

We have already seen that representation is dependent upon Intentional acts ultimately directed towards the world. But the discussion in this chapter has also contained implications for the dependence of what we call 'reality' upon representational thought. These implications will be more fully drawn out in the concluding chapter.
CHAPTER NINE

REPRESENTATION, THOUGHT AND REALITY

In the last chapter we saw the emergence of a theme that has been in the background of all the previous chapters: that representational thought is concerned with the making present in thought of what is spatio-temporally absent, or in some sense removed.

(1) To represent something is to let one thing stand for another. We can think of obvious examples: a photograph is a reminder of a dead friend; a map represents an area too large to be encompassed in a single view; a work of fiction is a representation of something which never has and perhaps never will exist; a sentence describes some state of affairs; some past scene is recalled in a memory image. All these are representations in the most obvious sense. Something is used as a presentifier for an act of thought, the object of which is removed from the immediate perceptual field.

(2) The antithesis of this sort of representational thought is direct interaction between a creature and its environment, of the sort that Dennett describes as awareness, the kind of intelligent behaviour control that is involved in driving a car, when our thoughts are elsewhere; the sort of thought that a rat may have when it responds to the square or the circle; the consciousness of an object that Sartre describes as primary and unreflective; and perhaps the sort of thought that a machine might have. All these forms of thought appear not to be representational.

But these two categories leave a large area of thought excluded.

(3) What about reflected or articulated thought about some present object? This can, and frequently does, involve awareness, - driving attentively, for example. I may stand in front of a tree, look at it and have completely articulated thought, 'That is a Cootamundra wattle'. This might seem like an example of an interaction between a creature and its environment, but it obviously involves a good deal more than awareness. On the other hand, we may feel reluctant to admit this large class of cases to our first category of representational thought because, to take the tree example, the object of thought (the tree) is not represented by anything else. Moreover, there is apparently no
need for representation in this case, because the tree is right there in front of me. I am looking at it and pointing to it.

This kind of case does not fit easily into either of the two categories (1) and (2). It is not thought about something absent as in (1); and it is a thought which is explicitly recognised, unlike (2). I have suggested that (1) is representational thought and that (2) is not. Is it true that (3) also is non-representational thought, in spite of Piaget's claim, quoted several times, that all thought is representational? I think it is not true, for reasons which will become clearer if we bear in mind what we have already seen about the nature of representation, and look again at the contrast between (1), (2) and (3).

I claimed that no representational thought is involved in (2), because the examples in this category are all cases where there is an immediate interaction between a creature and its environment: the creature simply responds behaviourally to something that it perceives. There is no representation involved here - nothing is made to, or seen to, stand for something else because there is nothing that could be thought of as 'introspectible mental content'. Does this mean, then, that there cannot be any representation without mental content? This might seem like too extreme a claim, because we could think of a case, say, of a driver who obeys traffic signals (even if it is without 'noticing' them)? Surely this is a paradigm case of representation, as the term 'traffic signal' suggests? However, although this might seem like a paradigm of representation, it is in fact representation only in the same limited way as the example of the cockatoos that we considered earlier. We, the observers of the driver, can say that representation is involved here, in just the same way as the human observers of the cockatoos can say that about the birds. And the learner driver or the driver who is thinking about what she is doing can say that the lights represent something to her, so that she is engaged in representational thought. But this does not seem to be true of most drivers. The proper analysis of driving which involves only awareness should surely be that we are conditioned to respond to the lights, in just the same way as the rat is conditioned to jump at the food door, and in a way similar to the way the cockatoos innately respond to the sentinel. What is different about the human performer in contrast to the lower animal performer is that we humans can comment on our own performance and in talking about some occasion when we must have obeyed the lights (even
though we don't recall it) we can then say that the lights represented something to us. But in this case we have observer status only; qua observer, we can claim that this is a case of representation, but not qua performer. Observing in retrospect that the lights must have represented something to me does not entail that I was engaged in representational thought at the time.

In respect of awareness, therefore, I have argued that cases in (2) cannot be described as representational thought in the full sense. The tree case (3) falls on the side of (1) in respect of awareness, but falls on the side of (2) in respect of the presence of the object of thought and the lack of anything to stand for something else. But here again we need to look more closely at what is involved in this statement. What I do when I look at the tree and think 'This is a Cootamundra wattle' is in some sense the same as I do when I have a mental image which synthesises a unity of meanings or utter a proposition, the meaning of which encompasses an indefinitely long string of further meanings. In order to be able to articulate any coherent thought about the tree I must be able to draw on a great deal that is absent in time and space - all that I have learnt from past events and past experiences about trees, classification, details which distinguish this wattle etc. All these past events and expectation of future events become as Sartre says in his analysis of 'two and two make four', the transcendent object. In some sense the real material object, the tree in itself, draws together the unity of previous experiences. In this sense the tree 'out there' stands for all those previous experiences. But to see how this is so it is important that we remember what we have already seen about the nature of representation as an act of thought which uses the representative item as a focus for past acts of thought: that there is nothing about the representative item in itself which can carry out the function of representation. Here also we come back to Piaget's notion of a network of conceptual structures (originally derived from actions) being called into play when we use a signifier. The same notion is to be found in Aquinas' account of the application of species as a means of understanding reality, the species being a stored system of rules, as it were. These two accounts - of Piaget and Aquinas - can be applied in the following way. The tree is not just the object of bare sensation; its perception is mediated through the network of conceptual structures (Piaget) or species (Aquinas). In both cases the tree as a present
physical object, acts as a representative item, which calls into play the network of concepts derived from other experiences.

In the light of this elucidation of the nature of representation, it becomes clear why the relations between representation and reality are those of mutual dependence. One half of this mutual dependence has been a major theme of the preceding chapters. What we have seen there is that no signifier yields information by itself. It must be referred by some agent to some feature or features of the real world. For example, a mental image has no representational value as an entity within the mind: it has to be explicated as a mental act directed towards something separate from mind. Similarly, as Dennett says, sentences yield no information without the intermediaries between sentences and states of affairs, "namely the sentence utterers and hearers, the makers of verbal messages." (Dennett, 1969, p 186). Admittedly the connection between representation and reality is not always an immediate one. Sometimes there is a chain of connections, as for example in the case of a thought about the memory image I had yesterday of the map of the route to Sydney (did I image the turn-offs correctly?); or in the case of a painting of a fictitious character or imaginary scene. Even in cases like these, however, the end of the chain is 'reality', in the sense that there is a reference to the public and shared world. In this sense, then, there is a reference beyond the item which represents, to some other thing or state of affairs. Of course, in many instances the representative item also exists independently of the Intending mind. Pictures, written signs, traffic lights, unlike mental images all have separate existence from the mind which uses them for representation. But qua representatives they are dependent on the mind(s) which so uses them, by referring them to reality. What I have been claiming here, then, is that representation is always some mental act which goes beyond the representative item to refer to some item of reality; and in that sense it is dependent on reality. But now it is time to look at the status of reality in relation to representation. What has been emerging from the investigation of Part III is the other half of a two-way dependence: the dependence of 'reality' upon representation. Let us look at this more carefully now. First, let us turn again to Husserl's phenomenological analysis of reality.

Some of the points made in the last chapter about the ontological status of transcendent objects have also been recognised by Karl Ameriks in a recent article on 'Husserl's Realism' (Ameriks, 1977).
And Husserl of course is quite opposed to the idea that things are immanent in the sense of being dependent upon (individual) consciousness, as he has already made plain in his attack upon psychologism in Logical Investigations, Volume I. This is why in Ideas Husserl produces the notion that things are 'correlates' of consciousness rather than parts. They are correlates in the sense that the transcendent object is in a certain way mind-dependent. But as correlates rather than parts, things remain quite distinct from consciousness. As to the way in which things are mind-dependent, what Husserl means is that mind should be understood not as the locus of individual psychological events in the life of some person, but as mind or consciousness "in the generic sense of some determinate, systematic cognitive structure" (p 507).

Things are mind-dependent in this sense, and we can see why by considering various alternatives. There is, for example, the concept of reality as something 'in itself' with a true nature wholly independent of the perceiving minds or conceptual frameworks which come to bear on it. This sort of concept can be found lying behind not only Kant's doctrine of the unknowable noumenal world but also behind extreme versions of realism which deny that what is in the world owes anything whatever to what we can discover or know about it. Husserl's line on both these extremes is simply that the hypothesis of things in themselves is absurd. What we think of as 'things in themselves' are either something in principle unknowable (like Kant's noumena), there is something absurd about polluting our ontology with in principle unknowable entities; or else they are identified with the transcendent items which arise out of the synthesis of perspectives (in other words, reality-in-itself is interpreted as the complete class of true propositions about any state of affairs).

And this brings us back to the claim that reality is dependent on representation. When Husserl recommends the phenomenological reduction in order to free ourselves from the preconceptions that we have about reality, he is trying to show the difference between any particular and momentary experience - which we notice only by careful attention - and what we unreflectively assume to be 'the thing in itself', but which is in fact the transcendent object (the object known as a synthesis of all our experience of and knowledge about it). The transcendent object is taken (unreflectively) to be the object 'in itself' just because that is the most natural and spontaneous way of
grasping the object, in contrast to the deliberate attention that is required before we notice a particular aspect (e.g. two and a half sides of a box) which is given in a single moment of experience. What we think of, therefore, as 'reality in itself' is dependent on the representation of many past experiences of the object; and that representation involves an act of thought which calls upon some systematic cognitive structure, within which the object is perceived and grasped. To say this is not to deny that there is a world that exists separately from the minds that apprehend it. But it does imply that everything that could give any sense to our characterisation of this bit of reality as this, and that bit of reality as that, arises out of our ability to detach ourselves from this particular moment of experience and see the thing in a larger framework of other experiences, all of which have to be represented in the form of some sort of cognitive structure, in order that we can be detached from any immediate experience and look at other possibilities simultaneously.

We have already met this idea in our earlier examination of Piaget's conception of cognitive structures which are developed (by assimilation and accommodation) out of sensory-motor behaviour, and pave the way for adult intelligence by presenting at a theoretical level a whole network of possibilities of behaviour which had previously been simply engaged in.

Finally, we are brought back once more to Aquinas' conception of representation. As we saw (in Chapter 2) Aquinas talks about two forms of representation, the phantasms of the imagination which may be very roughly understood as mental surrogates for objects in the world, and the species of the intellect. Although he talks about the species as likenesses (similitudo) and representations (repraesentativa), the species cannot be interpreted as mental pictures of what they represent but rather as the means by which a thing can be known. It was suggested earlier that in view of Aquinas' remarks on the subject, the species should be interpreted as conceptual frameworks, or sets of rules or conventions which tell us how reality is to be understood. The species, then, should not be interpreted as objects of knowledge, but rather as sets of specifications which we employ in order to obtain knowledge. It is in fact the species which bear all the important weight of the account of representation. But given the sort of analysis that I am claiming for the species, it seemed to remain something of a puzzle
that the species were called 'similitudes' and 'representations', since it turned out that they were not representations in the obvious sense that the phantasms appeared to be (resemblances). They were not even, in any obvious sense, items that stood for any other things, representing only the intelligible natures of things.

But now we can return to this puzzle with a better understanding of why the species may legitimately be thought of as a form of representation. The species are applied to the phantasms (representative items?), but these items alone would not do the job of representing anything. In order for that to occur there must be the appropriate act of mind. The species can be understood in two ways (as we saw in Chapter 2): (1) as something which can be stored, and then we can interpret it as a rule-system; and (2) as the full concept, and then it has to be understood as the active grasping of some reality through employing the rule-system, in other words, drawing on a conceptual network. That conceptual network has developed out of the synthesis of past experiences, and it comes into play in every new experience.

Aquinas, Piaget, Sartre and Husserl in their different ways all have the same message. By means of the activity of thought, which is in some sense representational activity, we grasp 'reality' through a network of concepts and past experiences. Were it not for the application of representation in this form to reality, not only could it not be recognised as reality, we could have no cognitive grasp of it at all. We should all be in the same position as those non-human animals which do not have the capacity for disengagement.

In conclusion, let us return to our opening problem with Locke. We are in a better position now to see where his account of representation has gone astray. There is (as usual with Locke) a grain of truth in his account of representative items before the mind. But in concentrating on the representative item alone, he has neglected the representational act. The representative item carries out its representative function only because lying behind that item there is a network of experiences and concepts which are brought into play by the activity of mind. Our examination of the theories of Aquinas, Piaget, Husserl and Sartre has thus served to clarify what is lacking in the passive model of representation.
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