PERCEPTION: THE JUSTIFICATION OF PERCEPTUAL BELIEFS

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

in

THE FACULTY OF GRADUATE STUDIES
(Department of Philosophy)

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA
August 1977

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The thesis is an enquiry into what provides the basis in justification for perceptual knowledge and beliefs. Thus, it is solely concerned with what has been called 'epistemic perception'. Non-epistemic perception - perception in which, or as a result of which, no beliefs are acquired - is not discussed. The question of whether there is non-epistemic perception is not addressed.

In the early chapters of the thesis a major philosophical problem of perception is stated and "traditional" philosophical theories of perception are discussed with particular attention to how adequately these theories deal with the problem. In addition to emphasizing that the traditional theories are not satisfactory, this review illuminates a feature common to the theories and a natural way of stating the problem.

This feature - the Cartesian doctrine of perception - is the thesis that perceptual awareness is the justificatory basis for perceptual knowledge and beliefs. Having established that the Cartesian doctrine is a tenet of the traditional theories, it is argued that the doctrine is unsatisfactory and that no theory that accepts it can be adequate.

The criticisms made of the doctrine can be divided into two broad classes. First, there are arguments that rest on the actual occurrence or logical possibility of some phenomenon. For example, it is argued that because perception can occur without awareness (the logical possibility of subliminal perception, the occurrence of proprioception, etc.) the Cartesian doctrine cannot be correct. Further, it is argued that some phenomena (the optical "blind spot", stabilised retinal images, etc.) necessitate
that even in those cases where perception is accompanied by awareness, the awareness is not always the basis for the justification of perceptual beliefs and knowledge.

Second, it is argued that awareness cannot be a relatum of the justification relation and that the Cartesian doctrine is thus ruled out a priori. Some attempts to argue the contrary are examined and rejected. Further, it is argued that the Cartesian doctrine can be replaced by the doxastic thesis - the claim that only beliefs can justify perceptual beliefs and knowledge. Some putative problems with the doxastic thesis are disposed of in arguing that the thesis can form a satisfactory element of a philosophical theory of perception.

D.M. Armstrong's theory of perception is briefly examined and it is concluded that he appears to accept the Cartesian doctrine of perception. It is argued that, despite this, a theory could be developed which is very similar to Armstrong's except in that it rejects the Cartesian doctrine in favour of the doxastic thesis.

It is argued that rejecting the Cartesian doctrine of perception is an instance of a larger general advance in epistemology - an advance that has already been accomplished in philosophical accounts of knowledge and memory.

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Professor Jonathan Bennett
Research Supervisor
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I Introduction

A. The Phenomenon for Discussion

The following pages are concerned with the phenomenon of perception. At first glance, that statement might seem sufficient but, as there will be occasions when one will be led to puzzle over the question of whether a described situation involves perception, it would be helpful if at the outset one could say clearly what is meant by the word 'perception'.

However, for the philosopher to define the area of his interest in this way is impossible. At least a part of the task of the philosopher interested in perception is giving the meaning of 'perception'. Thus, to define the term before one begins the philosophical discourse is impossible because, having defined the term, one would already have begun doing philosophy.

Although one cannot define 'perception' before one begins, there are things falling short of this that one can do. Because they have in common the English language, people who read this work will think it appropriate to use the word 'perception' in much the same sorts of situations. Thus, one can say that the subject of these pages is the phenomenon that users of the English language refer to by using the word 'perception'.

1 Throughout, I shall use single-quotes primarily in order to mention rather than use a word. Double-quotes will mainly be used: 1) around quoted material; and, 2) around words that are being used in a strange or technical sense. These generalizations will be violated in accordance with the standard practice of alternating double- and single-quotes for occurrences of quotation marks.
This, of course, is not totally satisfactory; and in one way it is very misleading. It is not totally satisfactory in that any two competent speakers of English probably would not use the term 'perception' in exactly the same situations. While one might expect them to agree in most cases, one can also expect situations which one speaker will say involve perception where another will deny this. If one is to produce a definition of 'perception' that legislates about these disputed cases, as one surely must in giving a comprehensive account, one has to adopt some principle for deciding what usage is correct. One could resolve such issues on the basis of the principle that the usage of the majority is the correct usage - but, even if that were desirable and satisfactory, such a course is hardly the province of the philosopher who does not collect the relevant empirical data. Rather, philosophers seek to settle such disputes in a normative way - for example, by noticing that certain general conditions apply to those cases about which users of English agree, and then deciding disputed cases on the basis of whether or not they violate the general conditions. The statements in the previous paragraph could be very misleading in that they might suggest that the philosopher's practice is more descriptive than, in fact, it is. For, it could be that, on the basis of normative considerations, the philosopher would be justified in giving an account that legislated a use for some word which, in some respect(s), is at variance with the use of the majority, or even all, competent speakers of the language.

Such a suggestion for a change in usage might be thought
to be impertinent. But, such changes are not uncommon, and the arrogance necessary to suggest that the use of the majority of English-speakers is incorrect is not peculiar to the philosopher. Consider one simple example from physics: the word 'elastic'. The physicist noted that this term is used of substances that deform under pressure but return to their original shape when the pressure is removed. Taking this as the normative condition, the physicist then uses 'elastic' of substances such as steel and glass, of which one previously would never have used the term. This revised usage of the physicist has, to some extent, seeped over into ordinary use.

In a philosophical enquiry the balance of normative and descriptive factors is delicate. It would be a bold philosopher who went so far as to suggest that most of the things one would normally say one perceives are, in fact, not able to be perceived at all - and it seems to me that ridicule would be the reaction appropriate to any suggestion so extreme. However, other considerations aside, the more drastic a suggestion as to how usage should be amended, the more difficult it is to take it seriously. Any two philosophers would probably disagree as to what balance should be struck between these two elements. All one seems able to say is that although it is reasonable sometimes to suggest some realignment of usage, there are possible changes that would be so major that they would have to be considered to derive from an analysis of a concept other than that purportedly under discussion.

One can say further positive things about perception by
indicating the species that fall under this generic concept. Because of the act/faculty ambiguity of the noun 'perception', consider for a moment its cousin, the verb 'to perceive'. Whenever some conjugation of the verb 'to perceive' is applicable a corresponding conjugation of one of the more specific verbs of perception is also applicable. These more specific verbs of perception include 'to see', 'to hear', 'to taste', 'to smell' and 'to feel'.

Mention of some of the specific concepts that fall under the generic concept perception, brings me to an important negative point that can be made in indicating the phenomenon under discussion in this work. The specific verbs of perception all get used in what one might provisionally label 'a non-perceptual sense'. Consider the verb 'to see' - the specific perceptual verb that displays this sense most conspicuously. Completely standard and unexceptionable uses of this verb occur in sentences such as: 'The blind man saw the error of his ways', 'The blindfold man, by feeling in front of himself, saw that he was about to run into something', and 'One can most easily come to see the solution to knotty philosophical problems by thinking

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2 This, of course, is not to say that whenever one knows that 'to perceive' applies one knows which more specific perceptual verb applies - one might, for instance, not know what sense-modality is involved.

3 The classic use of this technique for indicating more narrowly the phenomenon under discussion occurs at the beginning of Grice's discussion of 'meaning'. H.P. Grice, "Meaning", Philosophical Review 66 (1957): 377-79.
about them in a totally dark room with one's eyes closed'. These examples make it obvious that one can see (in this non-perceptual sense of the word) without the use of one's eyes. Indicative of the non-perceptual sense of the term is that it can, without change of meaning, be replaced by some word that has no suggestion of the involvement of the sense-organs. For instance, 'saw' in the first and second sentences can be replaced respectively by 'realized' and 'determined', while 'see' in the third sentence can simply be omitted.

Although 'to see' is the verb most often used in what I have provisionally labeled 'a non-perceptual sense', the other specific perceptual verbs also display such usages. A deaf person can have heard, by having read the newspaper, that Bourassa was defeated; one can taste the bitter fruits of failure while one's mouth is anaesthetized, smell something fishy in the argument when one has the most debilitating nose-cold, and so on. With the specific perceptual verbs other than 'to see', there is some temptation to think that these non-standard uses are not so much uses of the verb in a non-perceptual sense as they are uses of the verb within a metaphor. Because it is not clear to me what distinguishes a common metaphoric use of a word from a second sense of a word, I do not wish to insist on either way of describing the situation with non-standard uses of specific perceptual verbs other than 'to see'. However, I think that it is clear that for this verb, at least, the "non-standard use" is so common that it would be misleading to suggest that it is a use within a metaphor rather than a different sense of the word.
One further comment about what I mean by claiming that there are two senses of the verb 'to see'. The word 'martini' is correctly applied to objects that fall naturally into two distinct classes: one class containing just a type of rifle and the other just a type of mixed, alcoholic drink. Similarly, the word 'grapefruit' is correctly applied to objects that fall naturally into two distinct classes: one class containing just pink grapefruit and the other just white grapefruit. Anyone familiar with contemporary philosophy would have no hesitation in claiming that 'martini' has two senses, whereas 'grapefruit' has only one sense that is indifferent between the object having "pink" or "white" flesh. Over and above the fact that the word applies to a class of objects that can be divided into two proper sub-classes, I am unsure what further condition has to be satisfied for a word to be considered to have two senses rather than one sense that is indifferent to some divisions that could be drawn. This lack of certainty over what further condition is involved is reflected in uncertainty as to how to classify certain words - for example, does 'ogive' have an architectural and a mathematical sense, or merely one sense indicating a shape indifferently of an architectural structure or a curve of a graph? Being uncertain as to what this further condition is, I do not know what more is claimed of a word when it is said to have two senses rather than one sense indifferent to a possible distinction. Thus, although I have talked of the verb 'to see' having two different senses, this should be understood as claiming nothing more than that the things the word is applicable to can be divided into two different classes.
It would be a mistake to think that every use of the verb 'to see' is easily and clearly classifiable as perceptual or non-perceptual. As I write up on the blackboard the steps of the proof, does the audience see in a perceptual or a non-perceptual sense (or, perhaps, both senses) that the sum of the internal angles of a triangle is equal to two right-angles? When one reads a description of the terrain and sees that progress across it will be difficult, is this seeing in a perceptual or a non-perceptual sense? But, of course, that the division is not absolutely clear-cut and easy to make does not totally vitiate the point of drawing the distinction. While it is difficult to determine the precise point of dawn, one can usually tell mid-day from mid-night. All I intend, in pointing to the two senses of the verb 'to see', is to indicate that some uses are clearly outside the area of the subject that I am interested in, despite the fact that it might be unclear where some other uses lie.

The generic verb 'to perceive' shares to some extent this feature of the more specific perceptual verbs. When one says that someone is very perceptive one may not mean that that person has exceptional sight and/or hearing, etc. Part of the point of Durrell's *The Alexandria Quartet* is that the different narrators perceive the same people and events very differently. There is, then, a sense of the expression 'perception' which

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suggests no involvement of the sense-faculties. This is the reason why it is not totally satisfactory to label the different senses of these verbs 'perceptual' and 'non-perceptual'. As the verb 'to perceive' itself shares in this same ambiguity, the labels would only be helpful if one first indicated in what sense 'perceptual' should be understood in them. One might adopt the labels 'sensory' and 'non-sensory' if that did not lead to tongue-twisting and confusing phrases such as 'non-sensory sense'. However, failing to find any totally satisfactory label neither undermines the claim that there is a distinction nor vitiates its importance. The sense of 'perception' suggesting no involvement of organs of perception (the sense that I have suggested might be labeled 'non-perceptual' or 'non-sensory') is used to refer to a phenomenon that is outside my concerns in these pages. Thus, a more narrow specification of the phenomenon under discussion has been achieved by distinguishing the two different senses of 'perception'.

The knowledge and beliefs acquired in perception will be a major interest in this work - and it will be convenient to refer to these as 'perceptual knowledge and beliefs'. However, as it is somewhat unclear exactly what qualification 'percep-

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5 To give one, randomly chosen, example: "He [Henry Kissinger] came to Washington originally with three main perceptions. One was, .... that 'our policy is enormous, but it is still finite'. .... His second related perception was that Soviet power was inevitably on the rise". Jonathan Steele, "The Kissinger Achievement", The Manchester Guardian Weekly, November 14, 1976, p.7.
tual' introduces when it modifies 'knowledge' or 'belief' (or even other nouns), I should say something about what I mean by this expression. (The following comments apply to items of knowledge, but for brevity I mention only beliefs). The distinction I shall make between perceptual and non-perceptual beliefs is based on how the belief is acquired. One might attempt to give an account by saying either that perceptual beliefs are beliefs which one has as a result of perception, or that they are beliefs had in perception. However, for several reasons neither of these accounts is satisfactory. If, as seems possible, a general empiricism is correct then, on the former account, every contingent belief (that is, belief in a contingent truth or falsity) would be a perceptual belief. Further, if one construes 'in' in the latter account as meaning that having the belief is part of perception, then these accounts dictate different answers to a substantial philosophical question that should not be prejudged: the question of whether having beliefs is only (causally) consequent upon, or an integral part of, perception. However, if the latter account is construed as merely asserting that perceptual beliefs are had at the time of perception, then it is too loose in that one can have any belief (even a belief in some logical truth) while perceiving something totally unrelated. My not giving an account of 'perceptual belief' is ameliorated by the fact that nowhere in this work is the modifier 'perceptual' essential: all the substantial claims made about perceptual beliefs will be true of contingent beliefs in general. Despite this, 'per-
ceptual' plays a useful role. For example, in some cases to be discussed later (see pages 166-175), there are "background" beliefs without which the perceiver would not have perceived what he did. In discussing these examples it is natural to use 'perceptual belief(s)' to refer to the belief(s) acquired in, or as a result of, perception, as distinct from the "background" beliefs. Finally, because different tokens of the same belief-type (for example, the belief that yeti can stand erect) can be acquired in different ways - one could see a yeti standing erect or deduce that it can stand erect from its tracks (and some assumptions) - it is belief-tokens (for example, the belief that yeti can stand erect that I acquire the first time I encounter one) that are divided by the perceptual/non-perceptual distinction, and not belief-types.

Some of the issues discussed briefly above are touched on by other philosophers writing about perception, as is one other matter I wish to mention. I have already indicated that seeing, hearing, tasting, smelling and feeling are some of the species of (different ways of) perceiving. For humans who neither are blind nor have very severely defective vision, by far the most important of the perceptual faculties is sight. It should not be surprising, then, that many of my examples will have vision as the mode of perception involved. I may even, at times, talk about, for example, what one sees, when it might be more appro-

appropriate to talk in general terms about what one perceives. Certainly, I shall often jump from a discussion involving solely vision to making general statements about perception. I shall occasionally discuss and give examples involving other perceptual faculties; not only in order to vary the otherwise monotonously visual diet, but also to indicate that certain relatively well-known oddities in visual perception have counterparts in other perceptual modes.

I mention these facts in order to dispel in advance the objection that general conclusions are not justified by such a particular discussion. This suggestion would be wrong because the vast majority of the issues to be dealt with in this work are so basic that they are not specific to any particular perceptual mode. Moreover, examples involving one perceptual mode will usually be able to be replaced or supplemented by examples involving all other perceptual modes, thus justifying the generality of the conclusion based on them. There are important and philosophically interesting differences between the various perceptual modes, but few of these are relevant to my concerns in this work.

B. Why Philosophical Theories of Perception?

The first thing that needs to be explained is why there are theories - and, in particular, philosophical theories - at all. A popular writer on perception started a recent article,
"The strange fact that we can perceive external objects...." -
but, to the uninitiated (and, perhaps, even to those correctly
initiated) there is nothing at all strange about the fact that
one can perceive objects. It is quite to be expected that the
non-specialist should feel that there is little more to do con­
cerning perception than collect facts. Where there are no puz­
zles there seems to be no need of theories - and perception
might seem, at first glance, an area in which there are remark­
ably few puzzles.

In fact, the bases for puzzles about perception are ever­
present - and, indeed, perhaps that is part of the trouble: the
grounds for puzzlement are so familiar that one no longer
notices that they might generate puzzles. Although there may
be reasons for constructing philosophical theories other than
the puzzles that I shall consider, the facts I adduce, and the
arguments developed around these facts, do provide at least one
stimulus for elaborating philosophical theories (or accounts) of
perception.

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7 Richard L. Gregory, "Choosing a Paradigm for Perception", in
Handbook of Perception Vol. 1: Historical and Philosophical Roots
of Perception, eds. E.C. Carterette and M.P. Friedman (New York:
p.255. I assume that by 'external object' Gregory means to refer
to such things as cabbages, kings and sealing wax.

8 Did Wittgenstein mean that this is true even of philosophers,
when he wrote, "We find certain things about seeing puzzling,
because we do not find the whole business of seeing puzzling
p.212.

For footnote 9 see following page (13).
Consider the following example. A wall, painted a uniform colour, say lemon-yellow, is illuminated by unadulterated sunlight. The wall is visible only through two circular holes in an otherwise obscuring white screen, and the two holes have annular rings of white light of very different degrees of brightness projected onto the screen around them. When the wall is viewed through the hole surrounded by the ring of weak light it appears yellow, but when viewed through the other it appears a dark shade of brown. Furthermore, the wall and screen are so arranged that exactly the same part of the wall is seen on looking through either of the holes. In this situation, one might know that the same part of the wall appeared at one time yellow and at another time brown, although, if one did not know the effect of surrounding annular rings of light on colour-perception, one would not know the colour of the wall.

That example is rather artificial, but there are familiar, naturally occurring, examples of colour-illusions: the distant, green hills that appear a smoky-blue; the red fire-engine that appears black under sodium-vapour street lights; etc. However, these examples suffer from over-exposure in the philosophical


literature. My more contrived example of colour-illusion nicely illustrates a point to be made later.\textsuperscript{11}

Besides colour, one is subject to illusion with respect to properties such as shape, size, position, motion, weight, temperature, sound, smell and taste. Although most works in the psychology of perception are liberally sprinkled with examples of visual illusions,\textsuperscript{12} illusions involving other senses are less often discussed. Thus, my further two examples will involve other senses. An object placed in one's hand will appear to be smaller than the same object placed in one's mouth. (Size overestimation is even more pronounced for objects in the eye). Thus, if one was unaware of what the object was, although one knew that it was the same unchanged object placed in one's hand and in one's mouth, as it appears differently in these two different situations, one might not know what its real size was.\textsuperscript{13}

Another familiar example is a train passing swiftly nearby whose whistle will appear to be of a higher pitch as it approaches one than as it recedes from one on having passed. Again, some property (this time the pitch of the whistle) appears differently in two different situations and, given that the pitch did not

\textsuperscript{11}See page 66 below.


change, one might not know what is the true property.

As in the above paragraph, I will very often talk of the real, true, or actual property when contrasting something's property with its apparent property. The use of these terms in, strictly speaking, redundant - the real, true or actual property being just the thing's property. However, these terms are useful to emphasise the contrast between property and apparent property. Although terms such as these have sometimes been used to indicate a sort of metaphysical elevation, my use of them should not be construed in that way. Moreover, I intend my distinction between, for example, real and apparent temperature, to be compatible with the claim that objects do not really have temperatures but rather merely constituent molecules in motion. Even if there is a sense of 'really' in which this is true, there remains the well-established fact that one distinguishes real from apparent temperatures, and that knowledge of the latter is not the same as knowledge of the former. Such claims do not banish the fact of illusions.

What is one to say about illusions? It is natural to demand explanations: Why does the colour appear differently under these different conditions?; Why is the same object felt to be different sizes by different parts of the body?; Why does the pitch of the train's whistle appear to change? It is the scien-

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tist who answers these questions. He explains how and why the true pitch of the sound-source appears distorted to an observer in motion relative to that source; he explains how a bright annular ring of light affects the apparent colour of a surrounded object. However, such explanations indicate how the true quality causally interacts with some condition of the situation (relative motion, surrounding illumination, etc.) to produce, as effect, the apparent property. Thus, the causal explanation of illusions assumes knowledge of the true properties.

The philosophical problem pointed up by illusions is more basic than that to which the scientist addresses himself. One problem that the philosopher sees as raised is how one can ever know what the true properties of an object are. Consider the case of the whistling train speeding by. On approaching, its pitch appeared higher than when receding. (I shall assume that the pitch of the whistle did not actually change - an assumption which could be supported by the testimony of the train's engineer, facts about whistles, the pressure of steam, etc.). All one knows is that at one time the pitch of the whistle appeared to be higher than at another, and as it could not have been both, one (at least) of the appearances must have been illusory. The further evidence one could collect is summed up by saying that the apparent pitch of the whistle decreases from its highest when the train is approaching at maximum speed, through some apparent value when the train is stationary relative to the observer, to its lowest when the train is receding at its maximum
speed. With this one would have a very exhaustive catalogue of the apparent pitches of the train's whistle, but still no evidence on the elusive real pitch. As a further avenue of investigation one might compare the train's whistle with other sound-sources. A sound-source whose apparent pitch is the same as that of the train whistle when both are stationary relative to the observer, is, as a matter of fact, a sound-source whose apparent pitch varies just as does the apparent pitch of the train whistle with change in motion of both relative to observer. This would seem a good basis on which to conclude that the pitch of the train whistle is the same as that of the new sound-source. But, one only breaks out of the realm of apparent pitches if one knows the true pitch of the new sound-source. What further sort of evidence could it be that enabled one to ascertain the true pitch of the new sound-source? One only has the same sort of evidence for it as one has in the case of the train whistle itself. No advance would appear to have been made, and it suggests that no other empirical enquiry will solve the problem the philosopher has raised.

To the claim that it is obvious that the true pitch of the whistle is the apparent pitch when at rest relative to the observer there are several, variously contentious, responses that could be made. Despite what might seem obvious, the phil-

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15 The problem here is not that of choosing a scale or choosing names for different pitches. Even if one has names for various pitches and a scale on which to rank pitches, the problem of which apparent pitch is the real pitch remains.
osopher could point out that while there is no obvious reason for taking any one particular pitch to be the true pitch, there are good reasons for thinking that none of the apparent pitches is the real pitch. Because speed is a continuously variable property, there are an infinite number of different speeds of approach (and/or recession) of train to observer. As apparent pitch is a function of speed of approach of train to observer, there are an infinite number of different apparent pitches. Of these, no more than one can be the true pitch. Therefore, there is a sound inductive argument that has (infinitely) many true premises of the form 'Apparent pitch x is not the true pitch of the whistle', and whose conclusion is 'No apparent pitch is the true pitch of the whistle'. Somewhat less polemically, the philosopher might say that what is obvious is not that the apparent pitch at rest is the true pitch, but merely that one commonly takes this to be the true pitch. Cleaving what (really) is the case from what merely is taken to be the case, while it might underline that there is a problem demanding resolution, is somewhat disingenuous in this case. Even if one were to accept that it is obvious what the true pitch of the whistle is, the philosophical problem would still not have been banished. Knowing the true pitch of the whistle does not explain

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16 An infinitely sensitive instrument for measuring pitches would record an infinite number of different apparent pitches. But, the human ear is not infinitely sensitive, and thus the number of different pitches apparent to some observer will not be infinite. Even so, given a sufficiently fast train, the number of different pitches an observer might discriminate is sufficient for a healthy inductive argument.
how one arrives at such knowledge - and that is the philosophi-
cal question. Though they vary in the degree to which they
are disingenuous and polemical, these further lines of argument
indicate that the problem is not easily solved.

These arguments would appear to lead to skepticism, and
they apply not only to the pitch of the whistle, but also to the
size of the object held in the hand and the mouth, and the colour
of the wall. And, skepticism will not end there. In much of
one's perception one is subject to, or suffers from, illusion
(though these locutions should not be misconstrued to suggest
that the perceiver is necessarily deluded). Consider only
colours. On average, a fair proportion of any day is spent not
in sunlight, when things either appear not to be coloured at all
or their apparent colour is to some extent distorted from their
true colour by artificial illumination. Then, if one lives in
an area like Vancouver, much of the year is spent under cloud
cover which similarly affects apparent colours. Much colour per-
ception should be judged illusory even before one begins to con-
sider distorting factors such as distance (blue-appearing green
hills; blood appearing white with red patches under the micro-
scope), bodily conditions (jaundice), etc. Illusory apparent
colours (by which I mean apparent colours other than the true)
would appear to be more common than veridical apparent colours

17 See, for example: John L. Pollock, Knowledge and Justifi-
cation (Princeton, New Jersey: Princeton University Press,
1974), pp. 4-6.
(apparent colour identical to the true). Perhaps even more prevalent are shape illusions due to perspective.\textsuperscript{18} Illusion, then, is not at all an unusual condition in perception. Skepticism would seem to threaten more and more of the fish in the ocean of our knowledge.

In arguing that a very large part of perception is subject to illusion I have indicated how acute the sceptical problem might be made to seem. In fact, the problem is not quite as acute as this. Consider one example – the shape of a flat circular surface. Although an ideal camera would record an infinite number of different ellipses corresponding to the infinite number of different inclinations of camera to surface, the surface would not in every case appear differently to an observer at these different inclinations. Apparent properties (shape, size, colour, etc.) under changing conditions are more constant than that.\textsuperscript{19} But this is merely a rather minor reduction in the scale of the sceptical problem. If there is (or even, merely could be) one case where the same unchanged object appears differently under different conditions, skepticism would seem to threaten


even those cases where the apparent property is unchanging. A single case of illusion shows that knowledge of apparent properties can be misleading as to true properties, and so, even in those cases where the apparent properties do not vary under changing conditions, the possibility of a disparity between true and apparent property remains. Even if the apparent property is unchanging, it might be unchangingly deceptive as to what is the real property. In this way, one case of changing apparent property - which, surely, must be allowed - puts under skeptical threat all knowledge of the world.

Common in the philosophical literature are so-called arguments from illusion. It seems to me natural to give this name to the skeptical arguments discussed in this section, although on some understandings of this term this would not be correct. There is a fairly extensive literature - dating mainly from the 1950s and 1960s - discussing the credentials of such arguments. Whether or not this name is adopted, such arguments can be based on any example of non-veridical perception (that is, perception in which the apparent properties are not the real properties). Besides illusions, other species of non-

veridical perception are delusions and hallucinations.

Although these arguments threaten all knowledge of the world, one does, of course, have such knowledge. Thus, there must be something wrong with the arguments that lead from examples of illusions to skepticism. What is needed is an explanation of how knowledge of the world is obtained via the senses. Such an explanation will be (at least, a part of) a philosophical account or theory of perception.

This brief sketch is intended to do nothing more than outline one kind of motivation for constructing philosophical theories of perception: the attempt to counter the skepticism which seems to follow from the occurrence of illusions, hallucinations, etc. This may not be the only impetus towards that end, and indeed, some of the excesses of philosophical theories seem able to be explained only by the fact that theory-building, once begun, tends to take on a life all its own. But, demonstrating the need for a theory should, at least, allay some of the puzzlement and incredulity that might otherwise greet the presentation of such theories.
II A Lightning Sketch of "Traditional" Theories

A. Disclaimer

Having revealed the need for philosophical theories of perception, I turn now to consider some of the main types of theory that have been proposed. But first, some cautionary remarks.

The topics of the following four sections are very broad. A full consideration of any of them would be very extensive and thus, my discussion will not be as comprehensive as it could be. This is not a regrettable limitation imposed by extraneous considerations - a full treatment of these topics would be inappropriate in this work. This is because the argument of the whole work undermines a common ground of all theories of any of the traditional types. So, all that is called for here are sketches of broad types of theories - fine detail of differences between theories of a type being otiose. Thus, the reader may at times feel that all that has been given is a caricature. While caricatures are misleading in some respects, unless they are realistic and representative in others they would never be successful caricatures of something. I shall strive to provide caricatures which, while perhaps being misleading in some respects, accurately capture and represent the relevant features of the type of theory under consideration.

As this chapter is largely a sketch historical review, I
shall sometimes present arguments that are typical or representative, rather than what I consider to be good, or even the best arguments for some conclusion. Further, because I am presenting types of theories in some degree of abstraction, I will often refer to secondary rather than primary sources. In a primary source presenting a particular theory, the detail sometimes obscures the factors that determine its classification. Finally, I will be interested neither in the conclusive refutation of a type of theory nor, correspondingly, in all the modifications to it that could be made in attempts to save it from refutation.

B. Introducing Sense Data

The arguments most often used to introduce the term 'sense datum' are extensions of the sort of arguments I earlier constructed on the basis of examples of illusions (pages 13-14 above). Consider the case where the wall under one condition appears yellow and under another brown. Now under the condition that gave veridical perception (that is, when the apparent property is the real) the object that is yellow is the wall. What is it that, under the other condition, is brown? The wall is not brown, and there is no "brown light"; however, something that is brown is the appearance. Similarly, in any case of non-veridical perception any property which appears to be present but which is not a property of an object can be construed as a property of an appearance. (My distinction between objects and entities or things that are not objects will be largely self-evident, but it is perhaps somewhat unusual in that it includes,
for example, shadows and rainbows as objects, and it is a little "ragged at the edges" in that it is not clear how mirages and afterimages, for example, are to be classified).

Now, although the argument provides an inclination for saying that in non-veridical perception there are entities other than objects (appearances), it will not do to identify sense data with appearances. Sense data are private - no one can ever have another's sense data - whereas appearances are public - anyone can see the black appearance of the robin's red breast under sodium street lights. However, the sensation had in non-veridical perception is like the appearance in being an entity that bears the properties that are merely apparent, but is unlike the appearance in being private. Thus, the above argument, with 'appearance' throughout replaced by 'sensation', will serve to introduce the entities which, following Moore, have come to be referred to most commonly as sense data. Should one feel that this argument too brutally misuses 'sensation' to be satisfactory, one could introduce sense data by simply stipulating that sense data are those entities which bear the properties which objects merely appear to have.

If sense data are present whenever appearances are illus-

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2 As would, e.g., Gilbert Ryle; see his The Concept of Mind (London: Hutchinson's University Library, 1949), pp. 200-201.

3 Some philosophers give other arguments for the existence of sense data. See p.41 for a sketch of another, reasonably common, argument.
ory, is there any reason to deny their presence even when appearances are veridical? When the wall appears as it really is (that is, yellow) besides the yellow wall itself there is still the yellow sensation had by the observer. Thus, it would seem correct to conclude that sense data are present in all perception. Most commonly, a somewhat different argument, which is (I think) somewhat weaker, is given for this conclusion. Consider the case of the different apparent pitches of the train's whistle corresponding to different speeds of approach and recession of the train. Given that one of the apparent pitches is the true pitch, then, because there is no quality that distinguishes the veridical from the non-veridical case (that is, because all the apparent pitches are sufficiently alike) there is no reason to say that sense data do not occur in cases where the apparent property is the real property.\(^4\)

Consider the following, very crude, analogy. A "conjurer" displays a glass of blue liquid. After having distracted their attention, it appears to his audience that the liquid in the glass has turned red. The "illusion" is caused by having a card with a picture of a glass of red liquid painted on it come into place before the real glass, thus obscuring the glass from view. In this "illusion" the red that appears to be the property of the glass of liquid is, in fact, the property of an object that interposes itself between glass and observer. In a roughly analogous way, the argument which introduces sense data, failing to

find some intervening object to bear the merely apparent property, asserts that the property which is apparent is the property of an entity that is not an object - that is, a sense datum.

One instructive respect in which the analogy does not obtain is that there is an inclination to seek an intervening object to bear the apparent property only in cases of non-veridical perception, whereas sense data are postulated in veridical as well as non-veridical perception. This difference is reflected in it being an empirical question whether anything intervenes between glass and audience, but not an empirical question whether there are sense data. These differences rest on the fact that the analogy is an explanation of how some "illusions" occur, whereas the argument for sense data purports to identify the entity that bears apparent properties.

A second respect in which the analogy does not hold is that while one sees the intermediary object in the conjuring "illusion", many philosophers are hesitant to say that one sees (hears, smells, etc.) sense data. It is felt that to talk of perceiving sense data, rather than being the beginning of an account of perception, is merely to have regressed the problem. Other writers talk of being directly aware of, or directly per-

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ceiving, sense data. Such ways of specifying the relation between percipient and sense data carry additional connotations, for example, of certainty in one's knowledge of the properties of sense data. To avoid prejudging such issues I will follow the common practice and say that percipients have sense data - the relation having being undefined, but supposedly intelligible on analogy with having sensations, itches, pains, thoughts, etc.

A few observations about the sort of things sense data are will indicate some of the problems with talking about them. First, individuation. How many sense data are had when one sees for example, a white circle on a black background? Is there one white, circular, sense datum, and another black sense datum with an inner circular hole? Is there one complex sense datum? Why should there not be two semi-circular, sense data side-by-side which together form the white circle? Besides individuation through space there is individuation through time. If one perceives a change, does one have one changing sense datum, or a series of "static" sense data analogous to the stills in a movie film? Similar questions can be raised about, for example, physical objects and, in either case, one could dissolve the problems by specifying more or less arbitrary restrictions on the concepts. However, as it stands, the concept sense datum is vague in this, and possibly other respects.

Second, sense data must be able to be incompletely deter-

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6 Ayer, Problem, pp. 95-97.
minate in their properties. The Empire State Building has a determinate number of storeys, but to most it probably appears only as many-storeyed. Because sense data bear the apparent properties of physical objects, the sense datum had by someone to whom the Empire State Building appears as merely many-storeyed has the property of being many-storeyed without having the property of being n-storeyed (for any value of n). Similarly, the sense datum had when one hears a sound might have only the property of being high-pitched, whereas the sound itself is not just high-pitched but also of some particular pitch.

Another feature sometimes claimed for sense data is that, unlike objects, there is no distinction between their apparent and real properties. This feature is obviously closely associated with the fact that the apparent properties of an object are the actual properties of a sense datum. If it were true that the apparent properties of sense data are always their real properties, then one's knowledge of them would not be open to some of the errors that infect one's claims to knowledge about objects - namely, errors dependent upon taking a merely apparent property to be a true property. However, there is some reason for thinking that the claim is not correct. For example, a sense datum might appear to me to have the property of being identical in its shape and colour to one I had yesterday, whereas it is, in fact, different in some respect with regard to which my memory is faulty. Various modifications could be made in an attempt to defend this claim against the putative counter-
example. For example, one might argue that the sense in which such properties are apparent is different from the sense in which the yellow wall is apparently brown - the difference between 'The cardinal appears black' and 'The decimal expression of π appears to be non-recurring' reflecting the "perceptual"/"non-perceptual" distinction between senses of 'see', 'hear', etc. - and maintain that the claim is only true in the latter sense of 'appear'. However, I will pursue no further this or any other claim to be found in the very extensive literature on this topic. Even so, it is reasonable to conclude that one's knowledge of some properties of sense data is in some ways less liable to error than one's knowledge of similar properties of objects.

There is a tendency, which should be resisted, to think of sense data only in relation to visual perception. As having sense data is taken to be an integral part of all perceiving, there will be sense data having the properties that are apparent in auditory, olfactory, gustatory, etc., perception. A problem arises with some properties, however. Consider lifting a weight that feels heavy. The apparent property of the weight - being heavy - is a property of some sense datum. However, it seems wrong to say that a sense datum is heavy: one feels inclined to

say that weight is a property only of physical objects (whereas, one does not feel inclined to say this of colour). Perhaps one should adopt a different locution, and say that one has a sense datum of heaviness. In general, the suggestion would be to replace talk of sense data having certain properties by talk of sense data being of certain properties. If this were merely the suggestion of a more felicitous expression, it would not be without defects - for example, it seems to call for a multiplication in the number of sense data because a different sense datum is required for each apparent property. However, other examples suggest that it is more than mere change of locution. Consider a savage to whom a plane appears as a great silver bird. In the proposed new locution this could be expressed quite unexceptionably: there are sense data of greatness, silverness and birdhood. However, in the old locution it cannot be expressed unexceptionably - it would require a sense datum having the property of being a bird. But birds are physical objects and as sense data are entities that are not objects it is logically impossible that a sense datum is a bird. Because one locution seems unexceptionable whereas the other is contradictory, they cannot be simply alternative locutions: specifically, it would seem that the proposed new locution is a way of disguisedly failing to attribute a property to a sense datum. As sense data are specifically intended to bear properties (that is, to bear those properties that objects merely appear to have) the proposed locution is unsatisfactory. Again, this is an issue that I will not pursue further. Suffice it to say that there are more than
visual sense data (that is, sense data had in visual perception) and that in both some visual and some non-visual cases there seem to be certain difficulties.

Because of the way in which it is introduced, it will be clear that sense data talk is dispensible. Sense data are called upon to bear apparent properties and conversely, whenever talk of sense data occurs, it could be replaced by talk about apparent properties. Although the term could be avoided, I have introduced it and will use it throughout this chapter because it is an aid to brevity.

Some philosophers have maintained that such talk not only could but also should be avoided, arguing that to talk of sense data is to make a mistake in analysis. Consider the sentences: 'The smoke rises in balloons' and 'The smoke rises in spirals'. The former sentence is correctly analysed in an act-object manner: the smoke stands in some relation (that of rising in) to some objects (balloons). There is no inclination to give an act-object analysis of the latter sentence. As it asserts something about the nature of the activity of rising - 'in spirals' quali-

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9 This widely accepted view is at least as old as Alfred J[ules] Ayer's The Foundations of Empirical Knowledge (London: Macmillan & Co. Ltd., 1940). However, it is not universally accepted - see e.g.: Mates, "Sense Data", pp. 234-36.

fies 'rising' rather than referring to an object of the activity - it is correctly analysed in an adverbial manner. To talk of sense data is to adopt an act-object (or, more properly, an act-entity) analysis - and it is this that some philosophers have held to be a mistake.

But, the division between when act-entity and when adverbial analyses are appropriate is not clearcut (and, it is probably neither exhaustive nor exclusive). Perceptual experience sits uneasily near the border. But, it is not alone there. Consider, for example, the sentence 'The smoke rises in puffs'. Should this sentence be given an act-entity analysis - that is, does the smoke stand in the relationship of rising in to the puffs (like the smoke rising in the balloons)? Or should the sentence be given an adverbial analysis - that is, does 'in puffs' qualify 'rising' (as 'spirally' or 'in spirals' does in 'The smoke rises spirally')? Another example would be the sentence 'The cook turned somersaults' - should it be analysed as one analyses 'The cook turned fishcakes' (act-object) or as one analyses 'The cook turned slowly' (adverbially)? Such sentences seem able to be analysed in either way, and it something like this with perceptual experience.

When one sees something yellow, is one experiencing yellowly, or does one stand in some relation (that of having?) to some entity (yellowness, or a yellow sense datum)? Neither seems an entirely satisfactory way to talk, but conversely, neither seems obviously unacceptable. In fact, an act-entity
analysis of perceptual experience would seem to be reflected in the common talk of having sensations, pains, thoughts, experiences, etc. This suggests that sense data talk does not introduce an act-entity analysis, but merely systematizes the use of one term for items of a common focus of interest in philosophical theories. However, although the act-entity analysis conforms to common modes of expression, perhaps conformity with ordinary English is not the final arbiter in the issue.\(^\text{11}\)

Substantially the same objection - that talk of sense data should be avoided - is sometimes made by saying that talk of sense data involves an uncalled-for reification. But, the objection is somewhat unclear because it is not obvious exactly what reification consists in. One might think that one reifies whenever one uses nominals (nouns, noun phrases, etc.) - in which case, simply to use the term 'sense data' would be to reify,\(^\text{12}\) but some critics of reification recognize that to reify involves more than the use of nominals.\(^\text{13}\)

If saying that the reification is uncalled-for were

\(^{11}\) See, e.g.: Frank Jackson, "The Existence of Mental Objects" American Philosophical Quarterly 13 (1976): 33. See the rest of this article for a very penetrating discussion of whether talk of sense data should be avoided.

\(^{12}\) Chisholm, Theory, writes as if this were the case (see pp. 33-34 and 96), though his comments on Smart (see p. 100) contradict this impression.

simply a way of making the observation that talk about sense data can be eliminated in favour of talk about perceivers being in certain states, it would be unexceptionable. However, the suggestion sometimes seems to be that Occam's razor should be wielded to eliminate sense data, as if having to accommodate these entities somehow contributed to ontological overcrowding.\footnote{See, e.g.: Chisholm, \textit{Theory}, p. 33.} If the issue is whether one's theory of the world countenances too many entities, it is not clear that a more broad understanding of Occam's razor does not favour sense data in that they allow for economy of total description.

I have introduced the concept sense data, and indicated some putative problems with it. I have not made a comprehensive criticism of that concept, nor have I attempted a complete defence of it. The concept will be further clarified when it is seen what role sense data play in the various theories of perception.

C. Naive Realism

No survey of philosophical theories of perception would be complete without mention of the area's most famous straw-man; naive realism. This theory is unlike most others in that it is much discussed without ever having been held by anyone. It is sometimes taken to be the theory of the common man, untouched by philosophy (a theory which he holds, presumably, merely impli-
citly). I doubt this claim, but I think that there are factors that explain why it is made.

There is good reason for beginning a consideration of philosophical theories of perception with naive realism. It is not just the pleasure of the attack, or the success guaranteed in attacking a straw-man - stating and attacking naive realism is instructive. Representative realism develops naturally out of a consideration of naive realism and phenomenalist theories are an obvious outgrowth from representative realism and the problems that it faces. So, naive realism is a good starting-point. I believe that this illuminates why naive realism has been thought to be the theory of the common man. If it is the position from which other theories might develop by philosophical argument, should one not expect it to be the theory of persons unacquainted with philosophical argument? The answer to that question is "No". The common man's (implicit) theory of perception is, I believe, not as naive as might be thought.

Another, even worse, reason for saying that the common man is a naive realist is that the two essential claims of the theory can be seen as abstractions on certain things that everyone believes. One of these claims is that one perceives objects. That is, objects are some, not all, of what is perceived - which is compatible with events, actions, etc. being perceived. That one perceives objects is an abstraction in the sense that, although Mellors might never say "I perceive objects", this sentence is merely generic for the sort of thing he might say:
"I hear birds.\textquoteleft, "I taste honey.\textquoteleft, and "I see butterflies.\textquoteleft. This is an abstraction on only certain things everyone believes because no one would say that in hallucinations objects are perceived - though one might want to say that there are other entities that are perceived.

The other claim is that things are the way they are perceived to be. One knows that there is something solid beneath one because one can feel it; one knows that there is a page in front of one because one can see it; and so on. The use of 'perceive' and the various specific perceptual verbs here is very unsophisticated: veridical senses\textsuperscript{15} are not intended and this can be explicitly indicated without undermining the argument. I know that this page is white because that is the way it seems (looks, appears) to me to be. This claim is an abstraction on only certain things that one says because everyone knows that appearances are not always indicative of the way the world is.

These two claims - that objects are perceived and that things are as they appear - are the two essential elements of naive realism. I have attempted to show how they can be generated by abstraction out of some of the things one ordinarily says, but most writers simply state the theory. Thus, for example, Montague states the theory as saying that "Things are

\textsuperscript{15} A veridical sense of a perceptual verb is a sense which entails that what is perceived actually exists.
It is immediately clear that this theory is not satisfactory. Illusions show that the world is not always the way it appears. That naive realism is so obviously in conflict with the occurrence of illusions is, presumably, why some writers discuss naive realism before ever mentioning illusions. I chose to talk about illusions first, so that the need for a philosophical theory could be explained. Once the need for a theory is seen, it is clear that naive realism does not meet that need.

Attempts have been made to develop naive realist positions that do not founder on the rock of illusions. Basically, what all such theories suggest is that corresponding to every apparent property of an object some actual property be ascribed to it. In one such theory, all the apparent properties are ascribed *simpliciter* to the objects: thus the yellow wall that appears brown is said to be both yellow and brown. However, it is simply contradictory to say that an object has, for example, two different colours (except where it is not uniformly coloured or is, like shot-silk, some exceptional case). Nor is it satis-

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17 This position is expounded in S. Alexander, "On Sensations and Images", Proceedings of the Aristotelian Society n.s. 10 (1910), (see, particularly pp. 29 and 33); and even more explicitly in T. Percy Nunn, "Are Secondary Qualities Independent of Perception"? Proceedings of the Aristotelian Society n.s. 10 (1910), (see, particularly, pp. 193 and 203-7).
factory to construe this modified naive realist position as involving a suggestion for linguistic change so that it is not contradictory to say these things, for such a reform would be so far-reaching that it is not within the compass of the sort of modifications a philosophical theory is justified in suggesting.\(^{18}\)

Another modified naive realist position avoids the contradiction by ascribing a relational property to the object corresponding to each of its apparent properties.\(^{19}\) This position seems acceptable for some properties: for example, of a circular surface which appears variously circular and elliptical from different angles of inclination of surface to observer, one might well say that the surface has the properties of being-circular-from-inclination-x and being-elliptical-from-inclination-y. However, the position does not seem as plausible for cases such as the yellow wall appearing brown, or white paper appearing yellowish to the jaundiced eye. Furthermore, because apparent shape, for example, does not vary with real shape and angle of inclination simply according to the laws of projective geometry,\(^{20}\) additional conditions (perhaps mentioning an observer) will have to be included in the specification of the corresponding relational property. When all the conditions of

\(^{18}\) See, pp. 2-3, above.


\(^{20}\) See, p.20, footnote 19, above.
these relational properties are specified, it is difficult to see that the ascription of the relational property says anything other than that under the given conditions the object appears to have a given property.

All such modified naive realist theories are confronted by certain problems. One is that they do not seem adequate to handle hallucinations. All these theories ascribe to the object a correlate for every property the object appears to have. Yet, in (some) hallucinations there are apparent properties of merely apparent objects - and, thus, no object to which to ascribe the correlate properties. Hallucinations, then, would seem to require ad hoc additions to theories of this type.

Aside from such problems, there is a fatal flaw. Ordinarily, one distinguishes between the true and apparent properties, and to even present the philosophical problem depends upon making this distinction. Now, in these theories either there is a correlate for this distinction or there is not. If there is not, then the philosophical problem cannot even be put: and, far from having solved the problem, the theory has merely replaced ordinary English in which the problem can be expressed with the impoverished language of the theory in which the problem cannot be stated. On the other hand, if there is a correlative distinction (say the theories were to postulate T-properties which are contrasted with ordinary properties or relational properties, corresponding in the usual way of talking to real properties
which are contrasted with merely apparent properties), then the question can be put. But, although the problem can be expressed, a solution is no nearer: the theories say nothing about how one gets from knowledge of the ordinary (or relational) properties to knowledge of the T-properties of objects. The modified naive realist theories introduce a new language but, either the new way of talking is less helpful than the old or it merely alters how one states the problem. No substantial advantage is gained; no solution is achieved.

Although I have intentionally discussed naive realism without mentioning sense data, the theory could be stated in terms of them. Its second element would be restated to read: "The properties of sense data are the properties of objects". (And, similarly for the modified theories).

Many writers state naive realism in sense data terms as that sense data are parts of (the surface of) objects. But this is a mistake. Sense data are private, so, if sense data are parts of (the surface of) objects, then it follows that (the surfaces of) objects are private. But, this claim is not a part of naive realism. The mistake is made, I think, because many authors subscribe to an epistemological argument for sense data. This argument uses 'direct awareness' in such a way that the

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22 See, e.g.: ibid., p. 3.
apparent properties of the object one is directly aware of are its real properties. Citing illusions, it points out that one cannot be directly aware of objects, and concludes that one is directly aware of sense data. Looking back at naive realism - which says that perception is a direct awareness of the object - the erroneous conclusion, that naive realism states that sense data are parts of (the surface of) objects, is drawn.

I have not exhaustively examined naive realist theories. However, the discussion has set the stage for the introduction of other theories.

D. Representative Realism

In showing naive realism to be unsatisfactory, illusions indicate that the properties of sense data must be clearly distinguished from those of objects. Thus, a theory must be developed in which the properties of an object are not taken to be identical with the properties of sense data had when that object is perceived. One such theory (or type of theory) has traditionally been called 'representative realism' - a name I shall use although it fails to capture a necessary element of the theory.

Representative realism claims that, in the first instance, all knowledge in perception is knowledge of sense data and their properties. Assume, for the sake of the current argument, that one's knowledge of one's sense data is certain in that whatever one believes to be true of them really is true. (I earlier indi-
cated that there are problems with this claim - see pages 29-30). Even given this assumption, a perfect knowledge of one's sense data does not provide one with any knowledge of the world unless there is some correspondence between objects (and/or their properties) and sense data (and/or theirs). The name 'representative realism' suggests that there is such a correspondence, and, in particular, that the sense data and their properties represent the objects and theirs (or at least, that the properties of sense data represent the properties of objects). But, how much knowledge does this give one of objects? Representatives are often chosen on the basis of a resemblance they bear to what is represented (for which, of course, there are good practical reasons), but a representative need in no respect resemble that which it represents. For example, churches with towers, marshes and airfields might not be represented on a map by, respectively, '玷', '_fname', and '刀', but arbitrarily by symbols such as '@', '#', and '$'. It would seem possible for a representative to have few, if any, properties in common with what it represents. Thus, merely knowing the properties of sense data, and that sense data represent the world, one would know little more than that there is a world that is represented. A map with arbitrary symbols and no "key" does not show the way to safety. So, mere representation is not enough for knowledge of the world.

The classic statement of representative realism is John Locke's theory of perception. In that theory, properties (or qualities) are divided into two classes: primary and secondary.
Locke maintained that corresponding to different primary properties of sense data (or ideas) there are distinct properties in the object, but that corresponding to different secondary properties of sense data there are merely different combinations of primary properties. Although this is a complication in the theory, I pursue the distinction no further because it is clearly of no assistance in explaining how knowledge of sense data gives one knowledge of objects. It amounts, in fact, to claiming that there is less to be known about objects than might have been thought.

Representative realism is sometimes called 'the causal theory' because often included in the theory is the optional claim that having sense data is the last element in the causal chain that constitutes perception. Contemporary statements of such a view, to be found in the works of some physiologists and psychologists, state that having a sense datum is caused by an event in the brain. Earlier statements of the view are less clear as to what is the immediately preceeding cause (but this is of no great moment, causality being a transitive relation).

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The causal theory is obviously compatible with the causal factors which contribute to illusion, delusion, hallucination, etc. If having a certain type of sense data correlates with some other event (say, the firing of a certain brain cell), illusion is explained by some "interference" in the "normal" sequence of elements earlier in the causal chain: an "interference" which is outside the body in cases such as the changed pitch of an approaching train's whistle and the appearance of a mirage, but inside the body in cases such as the "yellowing" of everything to the jaundiced eye and the hallucinations of the drugged brain.

However, although it is very natural, it is not essential, to state the theory in terms of a causal relation. Even if having a certain sense datum is constantly conjoined with some other event (thus permitting the causal explanations of illusions, hallucinations, etc.), one could still deny that there is a causal relation between these two events. Such a position would be attractive, for example, if one held that there could be no causal relation between mental and physical events; but, whatever one's reasons, the claim itself is independently intelligible. Constantly conjoined events are sometimes not related as cause to effect: for example, seeing the puff of smoke from the distant ceremonial cannon does not cause hearing the report, although the two are constantly conjoined. Thus, one can either consider 'causal theory' to name a particular type of representative realism or, as is more common, construe it as a (not entirely suitable) name for representative realism.
But, might not this optional element be just what is needed to bridge the gap between knowledge of sense data and knowledge of objects? Footprints are caused by feet, and knowing the shape of a footprint gives one reasonably good knowledge of the shape of the foot that made it. Unfortunately, any hope such an example engenders is largely without justification. Effects are only like their causes in some respects: the colour of a footprint does not tell one the colour of the foot that made it. And some effects seem to be like their causes in no respects: the death of a man does not tell one much about the attaching of explosives to his car's exhaust system. If knowledge of the effect provides knowledge of the cause, should not Watson, who as a medical doctor surely knew more about the effect, have been a better sleuth than Holmes? If knowledge of the properties of an effect provide one with any knowledge of the properties of the cause, it does not seem to provide enough to account for the richness of one's knowledge of the world.

What is needed is a system of representation with a "key" or a relation stronger than representation or causality that, as it were, "carries its own key with it". Resemblance is such a relation, and most versions of representative realism claim that the properties of sense data resemble those of objects. Thus, the inappropriateness of labelling the theory 'representative realism' is exposed: 'resemblance realism' more accurately captures an essential feature of the theory. I shall now briefly discuss some of the main problems facing representative realism-
problems which cluster around the claim of a resemblance between sense data and objects.

As resemblance is a relation that "carries with it its own key", it allows one to bridge the gap between knowledge of representatives (sense data) and knowledge of what is represented (objects). Again, setting aside the (very real) question of whether a representative can resemble in every respect what it represents, there remains a problem. Consider, again, the illusion where under different circumstances the same wall appears differently as yellow and brown. The representative realist theory maintains that in both situations sense data are had: in one case yellow and in the other brown. If the sense data resemble the object, then this entails that the wall is both yellow and brown. Similarly for any illusion, delusion, hallucination. Representative realism would seem to be faced with some of the problems that faced the modified naive realist positions (see, page 40, above).

Clearly, what is needed is to make a distinction amongst sense data. Corresponding to different speeds of approach and recession of the whistling train there are auditory sense data with different pitch properties and only one of these sense data can resemble, in respect of pitch, the train's whistle. I will say that a sense datum is indicative (with respect to some property) when the property of the sense datum is identical to the property of the object perceived when the sense datum is had, and, and non-indicative otherwise. If representative realism
is amended to say that only indicative sense data resemble objects, it can be saved from ascribing incompatible properties to any one object.

However, such a move avoids one set of problems only at the expense of creating for itself another. The problem now is to distinguish indicative from non-indicative sense data. For, without being able to tell the indicative sense data from the non-indicative, confronted merely with many "contradictory" sense data of the same object, one does not know which sense data resemble the object, and thus one does not know what are the true properties of the object. But, the "new problem" is just a reformulation of the old: distinguishing an indicative from a non-indicative sense datum is nothing more nor less than distinguishing veridical and non-veridical apparent properties. Representative realism seems to solve nothing because it either ascribes incompatible properties to objects or reintroduces, unmitigated, the original philosophical problem.  

A much more common, and much more fundamental criticism of representative realism also arises from the claim that sense data (whether it be some or all sense data, and in merely some or all respects) resemble objects. First, there is an epistemological point: how can one know that sense data resemble objects? To know that a first thing resembles a second one needs

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26 Again, it will be obvious that Locke's primary/secondary distinction does nothing to solve these problems. See, page 43-44, above.
to know independently the relevant properties of both. Ultimately, it is only through perception that one acquires knowledge of the properties of objects. But, according to representative realism the immediate knowledge that one acquires in perception is knowledge of one's sense data and, because one knows that sense data resemble objects, one mediately acquires knowledge of objects. Thus, the basis necessary to support the claim that sense data resemble objects is only available if one first assumes that same claim. Because the theory allows access to objects only via sense data, attempts to get at objects independently of sense data are doomed to be always frustrated. Sense data can be compared with each other in an attempt to detect resemblances, but never can they be compared to objects.27 Analogously, trying to determine that the views expressed in Howard Hughes' press-releases resemble his opinion is doomed to frustration if the only access one has to Howard Hughes' opinion is through his press-officer. One can compare one press-release with another, but this only indicates consistency (or lack of it) amongst press-releases and can never assure one that the opinions of the press-releases - consistent or not - resemble those of Howard Hughes.

Thus, a claim which is essential to the theory if it is to begin to tackle the prime philosophical puzzles about perception, is seen to be unjustified, and so the theory fails to explain how it is that one gains knowledge of the world in perception.

Sometimes a more radical claim is associated with this epistemological point. The epistemological point is that one can never know that physical objects resemble sense data. But, from that it seems to follow that one can know nothing other than one's sense data, which in turn raises the question whether it is intelligible to talk about anything other than sense data. This issue is far too involved to follow here, but I mention it in order to indicate the depth and gravity of the problems that have been charged against representative realism.

I have argued the above epistemological point, and the more radical point about meaningfulness, with respect to the relation of resemblance between sense data and objects. However, if the arguments are correct against a relation of resemblance between these two types of things, similar arguments would be equally correct against any other relations (except identity) between sense data and objects. In particular, one can never know (and perhaps it is even meaningless to assert) that relations of causality and representation obtain between sense data and objects. Thus, if representative realism were true, it would seem impossible ever to have knowledge of the way the world is.
Initially, the representative realist theory of perception seemed plausible. However, this initial impression does not remain after some scrutiny of the theory. A critical examination of the representative realist answer to the question how one acquires knowledge of the world would seem to lead to skepticism - the conclusion that one does not have knowledge of the world. This has led most philosophers to abandon representative realism.

E. Phenomenalism

Under scrutiny, the representative realist theory of perception splits in two. Its claims that in perception one has sense data and that one can know their properties may be beset by minor difficulties, but its claim that one can have knowledge of objects and relations between them and sense data seems to be totally unsatisfactory. Phenomenalism can be seen as being generated from representative realism by simply lopping off the latter parts of the theory.

It might seem radical to excise objects from one's theory of perception in this way, however, the phenomenalist has a sound argument. Representative realism leads to the conclusion that objects are totally beyond one's ken (that is, one is unable to have knowledge of them) and, perhaps, not even able to be talked about meaningfully. Thus, no satisfactory theory should make (knowledge) claims about objects. So, by dropping those parts of representative realism that talk about objects,
one obtains a satisfactory theory - or, at least, a theory without the major defects of representative realism. But, could any theory of perception that does not allow talk about objects be satisfactory?

A slightly more sophisticated version of this argument shows how phenomenalism accommodates talk of objects. If one construes 'object' as does representative realism, then objects are totally beyond one's ken. But, one does have knowledge of objects. Therefore, the meaning given to the term 'object' in representative realism cannot be correct. So, phenomenalism merely excludes the things that are called 'objects' in representative realism. On some other understanding of that term, talk of objects is able to be part of phenomenalism.

Thus qualified, this partial description of phenomenalism makes the theory seem a lot more credible. But, besides what is covered by what one might call this 'negative part of the theory' there is still much to be accounted for. An adequate theory of perception must not only say that objects understood in such-and-such a way do not exist - it must also explain under what understanding they do exist and are perceived. I turn now to this "positive" part of the theory, for it is here that the problems begin to show up.

According to what they say about objects, there is more than one type of phenomenalism. Idealist theories give an account of the nature of objects, while what I shall refer to merely as
'phenomenalism' gives an account of the meaning of sentences in which 'object' and other object-terms occur. Thus, as I shall use the terms, idealism is a version of phenomenalism (see pages 57-58, below). Sometimes 'phenomenalism' is used more narrowly than this, in which case idealism and phenomenalism are alternative theories. As Bennett has pointed out, there is historical warrant for both these incompatible uses of 'phenomenalism'. The former usage best suits my purposes here, and thus I adopt it.

Idealism maintains that far from being beyond one's ken and only causally related to sense data, objects are actually composed of, or constituted out of, sets (collections, bundles, families - the terminology varies from writer to writer) of sense data. As knowledge of one's sense data is certainly possible, this proposal brings objects within one's ken. However, there are difficulties with the view. First, it is difficult to see quite what is meant by saying that objects are composed of or constituted out of sense data. Presumably, this is not presented as an alternative to the view that objects are composed of molecules, atoms, electrons, etc. Neither, presumably, should it be construed as a scientific proposal concerning a further decomposition of what had previously been taken to be the "ultimate constituents of matter". The suggestion is, in

28 Bennett, Locke, Berkeley, Hume, p. 136.
29 Berkeley is the most well-known idealist. See: Berkeley, Principles, section 1.
this respect, somewhat unclear.\textsuperscript{30}

Another difficulty stems from the privacy of sense data. Sense data are private while objects are public, and although the sense data of many different people can be constituents of the same object, there remains a problem. It is not that no account can be given of different people \textit{perceiving} the same object - for one could maintain that A's perceiving public object X is constituted by A's having his private sense data of X, B's perceiving X is constituted by B having B's private sense data of X, etc. Rather, the problem is that if \textit{all} the sense data of some object constitute that object, then because any one individual can only have \textit{his} private sense data of that object, any one individual is only able to have sense data that are a \textit{part} of the object.\textsuperscript{31} Perhaps this problem would be dissolved if one knew more about how sense data \textit{compose} or \textit{constitute} objects.

A more troublesome question is whether idealism solves the problem that leads one to seek a philosophical theory. Does knowing the properties of, at least, some of the sense data that constitute an object bring one any closer to knowing the properties of the object itself? To ascribe to the object all the properties of all the sense data would be to ascribe contradic-

\textsuperscript{30} I will return to this issue later. See pages 55-56, below.

\textsuperscript{31} This issue is analogous to one raised concerning naive realism. See pages 41-42 above.
tory properties to the object. So, to account for one's talk of an object's (real) properties the idealist must consider the object's properties to be in some way emergent.\textsuperscript{32} Thus, it is not clear that knowledge of the properties of the constituent sense data provide knowledge of the emergent properties of the object and, certainly, an account of how this is so has yet to be given. Naive realism and representative realism confronted essentially similar problems (see respectively, pages 38-40 and 47-48 above).

The above issues are little discussed in the literature. The problem that faces idealism which is most frequently mentioned is what might be called 'the problem of discontinuous existence'. A sense datum only exists, it is supposed, while it is being had by someone. Thus, for an object that, at some time, is not being perceived by any sentient organism, there are, at that time, no sense data of it. If objects are constituted of sense data, then at such a time there can be no object, for there exists, at that time, no sense data of the object. Thus, if would appear that idealism leads to the conclusion that objects come into, and go out of existence fitfully and repeatedly, according as to whether or not they are simultaneously being perceived.

However, it is not clear to me that idealism is necessar-

\textsuperscript{32} By saying that a property is 'emergent' I mean that that property of the whole is not determined solely by that of its parts; e.g., shape, but not colour, is an emergent property of a stack of bricks.
ily faced with this difficulty. The problem can only be generated if one accepts the premise that if A constitutes B then B only exists if A exists. While this premise is true of many things - buildings and bricks, for example - it is not universally true. One might maintain that classes are constituted of their members, but that classes exist even when none of their members exist; lecturing consists in uttering (special types of) strings of words, but a lecture may be going on at a time at which no word is being uttered. If one takes such examples as models for the relation between sense data and objects there would seem to be no problem of discontinuous existence.

But the problem has been taken seriously by idealists, and various responses have been made to it. One is to accept the conclusion and maintain that it is a discovery of idealism that objects have a discontinuous existence. The position is immune to empirical refutation, however, the proposal it involves for changing how one talks about objects is so extreme that it is difficult to see that it could ever be justified. Even so, accepting the intermittent existence of objects would seem preferable to putative solutions that, at times, have been proposed. Attempts to plug the gaps with "unsensed sense data", "groups of permanent possibilities of sense data" or God's sense

The data are little improvement on representative realism in that they all seem to postulate the existence of unperceivable (and unknowable?) entities.

Historically, the reaction to the putative problem of discontinuous existence has been to abandon idealism. A retreat is made to a weaker position—that is, a position entailed by, but not entailing, idealism. If the idealistic analysis of objects being composed of sense data is correct, then it follows that any sentence mentioning objects could be replaced by a sentence (or set of sentences) which mention, not objects, but solely sense data. (If the temperature of a body is nothing but the mean kinetic energy of its molecules, then talk of temperature could be totally replaced by talk of mean kinetic energy). The latter thesis I shall refer to as 'phenomenalism'—thus, as I am using these terms, idealism entails phenomenalism (idealism is a version of phenomenalism), but not vice versa. In reducing sentences about objects to sentences about sense data, many phenomenalists see themselves as giving the meaning of object-sentences. In the light of some highly prevalent and influential views about the nature of philosophy, one might wonder if

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35 To be outlined later. See, pages 93-95, below.
phenomenalism is not the philosophical core of idealism - the elements of idealism over and above phenomenalism being non-philosophical. Alternatively, one could view talk of objects being composed of sense data as being an unsatisfactory attempt to express the philosophical content of phenomenalism. Certainly if one takes such talk to mean nothing more than that object-sentences are reducible to sense-datum-sentences, the problems I have mentioned as facing idealism seem to evaporate.

For instance, because phenomenalism analyses sentences that contain mention of objects, the non-existence of the entities mentioned in the analysis does not entail the simultaneous non-existence of the object. However, there is a challenge to phenomenalism that is comparable to this problem - and this is to give an analysis of what it means to say that objects exist unperceived. The basic intuitions of the theory are two. First, that sentences of the form 'A perceives X' can be analysed into a series of sentences of the form 'A has sense datum Y of X'. Second, that sentences of the form 'X exists' can be analysed into statements about the perception of X by different observers and, thus, ultimately into sentences of the form 'A has sense datum Y of X'. Now, if one's claim that some object exists unperceived is doubted, a natural reaction is to change the circumstances (for example, to get into the presence of the object, orient oneself to it) so that the object is perceived, or, if this is not possible, to state the conditions under which the object would be perceived. This natural reaction is developed,
in phenomenalism, into an analysis of sentences asserting the unperceived existence of an object. It is maintained that 'X exists unperceived' is analysed by a set of sentences of the form 'If A (some observer) were to satisfy certain conditions, Z, then A would have a sense datum, Y, of X'. The conditions specified in such sentences are, of course, those under which the object would be perceived: spatio-temporal proximity of object to observer; observer's perceptual system functioning; there being light if the modality of perception is vision; etc. Counter-factual conditionals provide the analysis that is needed.

Although they are needed to meet this challenge, counter-factual conditionals become a major headache for phenomenalism: the theory (all but) drowns in a flood of them. Consider, for example, the analysis of statements asserting the existence of an unperceived object. If one of the sentences in the analysis is 'If A were in condition Z, A would have sense datum Y of X', then similar sentences can occur in the analysis for other observers, \( A_1, A_2, A_3 \ldots \) (past, present and future; human and non-human; etc.). Further, if one can include sentences for different observers under condition Z, one can also include sentences for all these observers under different conditions \( Z_1, Z_2, Z_3 \ldots \) (different points of view, conditions of illumination, conditions of the observer's psyche and bodily health, etc.). Thus, there are very many, possibly infinitely many, sentences that could occur in the analysis of one object sentence. As there seems no good reason for including some of
these sentences that would at the same time exclude any others, it would seem that a complete analysis should include all such sentences. Once counter-factuals are admitted there seems no reason to exclude them from the analysis of any sentence mentioning an object: if part of what one means by saying that X exists is that A has sense data of X, then is not another part of what one means that B would have sense data of X if he were to satisfy appropriate conditions? Thus, the analysis of any sentence that (implicitly or explicitly) asserts the existence of an object will be indefinitely, even if not infinitely, long.

Not only are a very large (possibly infinite) number of sense-datum-sentences needed to analyse one object-statement, but also each sense-datum-sentence will have to contain very many (possibly infinitely many) clauses. I indicated above that different sense-datum-sentences are needed in the analysis for different conditions of observation, and this is true for alternative conditions: for example, $Z_1'$, $Z_2'$, $Z_3'$ .... which specify different points of view. However, at the same time as point of view causally affects what sense data are had, so do other conditions: such as the conditions of illumination - $Z_1''$, $Z_2''$, $Z_3''$ .... Thus, each sense-datum-sentence must include mention not only of condition $Z_1'$ or $Z_2'$ or .... but also of condition $Z_1''$, or $Z_2''$, or .... Further, each sense-datum-sentence will need to specify the condition of every other independent variable that can affect the nature of the sense datum obtained: the state of the observer's psyche - $Z_1'''$, $Z_2'''$ ....; the state of the observer's body - $Z_1'''', Z_2''''$ ....; etc. Now, because
there is no a priori way of knowing what variables can affect
the nature of the sense datum obtained, there seems no alterna-
tive but to extend the list of types of conditions (Z', Z'',
Z''', etc.) until every condition is mentioned. Thus, each
sense-datum-sentence will have to have very many (infinitely
many?) clauses. Thus, not only is it difficult (impossible?)
to in practice complete the list of sense-datum-sentences that
analyse one object-sentence, but also it is difficult (impos-
sible?) to complete one of these sense-datum-sentences. Both
the length of each sentence and the number of such sentences
raise a difficulty in practice but not a difficulty in principle.
In principle it is possible to complete a list of sense-datum-
sentences, one for every sentient organism. Similarly, in
principle it is possible to specify every condition in one such
sentence, and thus in principle possible to specify a list of
sentences with every possible different combination of condi-
tions for one (and, thus, for every) sentient organism. But,
to say the least, the enormity of the number and length of such
sentences is an undesirable feature of phenomenalism.

Some writers have felt that the length of such analyses
is a serious problem. Traditionally, the relationship between
the sentence to be analysed and the set of sentences giving the
analysis has been conceived to be that of equivalence. Some
phenomenalists have felt that because so many sense-datum-sen-
tences are needed to analyse an object-sentence the relation
between them could not be one of equivalence. (A possible
source, though not an adequate justification for this is the associated epistemological difficulty: how could an object-sentence be known to be true if this involved knowing to be true such a large number of sense-datum-sentences)?\(^{36}\) Whether or not it is necessary, there is a well-worked vein in the literature on phenomenalism seeking to find a satisfactory relation weaker than equivalence between object- and sense-datum-sentences.\(^{37}\) It is an issue that I shall pursue no further.

Another putative problem is sometimes referred to as 'the impurity of analysis'. Typically, sense-datum-sentences contain mention of objects: consider, for example, my stapler which nobody is perceiving because it is in my closed desk drawer. One of the sentences of the analysis of 'The stapler in my desk drawer is silver' is 'If M.A. were to open his desk drawer, look in the drawer and there were to be sufficient light, etc., then he would have a silver sense datum of his stapler'. This sentence mentions all sorts of objects - desk, drawer, stapler, etc. - and so cannot be considered to be a "pure" sense-datum-sentence. There are moves that one can make to eliminate such reference to objects. One might try, for example, the sentence: 'If M.A. were to have sense data as of opening up his desk drawer, and have sense data as of looking in the drawer, and


have sense data as of there being enough white light, etc., then he would have a sense datum as of a silver stapler'. In such a sentence it is hoped that words like 'desk drawer' no longer refer to objects but simply occur as elements in the description of the properties of sense data. Even if this eliminates reference to some objects it does not eliminate reference to M.A. who is, surely, also an object. One might try to clean up this remaining impurity by taking up an egocentric position: for me, this would consist in replacing 'M.A.' in the above sentence by 'I', and recasting sentences different from the above in involving other observers as 'If I were to have sense data as of B opening up my desk drawer... then I would have sense data as of B seeing a silver stapler'. Because some philosophers have felt that the 'I' in these sentences refers to an object there have even been suggestions that the residual impurity could be purged by switching to sentences such as: 'If there were to be sense data as of M.A. opening his desk drawer .... then there would be sense data as of a silver stapler'. Whether such changes in the sense-datum-sentences really remove the impurity or merely obscure it is an issue I shall not pursue here. However, by seeing how difficult and lengthy the statement of sense-datum-sentences is, and how enormous is their number, one can understand why some philosophers have thought phenomenalism too baroque to be acceptable.

Although Berkeley's idealism dates from 1710, the full exploration of phenomenalism that is hinted at in my brief review above occurred largely between the 1930s and the 1960s. Of the many philosophers who, in the twentieth century, have at one time or another embraced phenomenalism it is, perhaps, most important to mention Price and Ayer. Price's book *Perception* is a classic attempt to work out in detail a satisfactory phenomenalist account. Some idea of the development of phenomenalism is gained by tracing the development of Ayer's published thoughts on the theory from 1936 *Language, Truth and Logic*, through *The Foundations of Empirical Knowledge* (1940) and "Phenomenalism" (1946) to *The Problem of Knowledge* (1956).³⁹ Since the 1960s phenomenalism seems to have lacked any ardent and vigorous advocates.

Despite its problems and its current neglect, phenomenalism sheds extremely important illumination on some of the traditional problems of the philosophy of perception. The contrast of idealism with phenomenalism greatly clarifies the task that confronts a philosophical theory. Instead of being to explain the relationship between sense data and objects, the problem is seen to be to give an account of the meaning of sen-

tences that mention objects. Correspondingly, the problem is not to account for how one discovers the real properties of objects, but rather to give an account of what it means to say that something is the real, in contrast to the merely apparent, property of an object. Phenomenalism's basic attitude is that object talk is nothing more than an efficient and economical convention for talking about the sense data that are, or could be, had (which is not to deny that objects exist). Likewise, phenomenalism suggests that it is a matter of convention what apparent properties are called 'real properties'.

Just as phenomenalism considers talk of objects to be an economic convention, so it holds that the conventions regarding real properties are not arbitrary but, again, based on considerations of utility. Detailing these conventions more particular ly, however, is difficult. It is, of course, of great utility to know an object's most common appearance, and so one might think that it is the most usual apparent property (or the property apparent under "normal" conditions) which is selected for designation as 'the real property'. But, the red streetcar that only runs at night, solely along streets illuminated with sodium street lamps, is not really black. A more sophisticated suggestion is that it is most useful to know the property apparent in those circumstances that prove the best for predicting apparent properties in other circumstances. Thus, it has been suggested that the object's real colour is its apparent colour under conditions of maximum discriminability. This certainly would be a utilitarian convention, and it fits well with the
fact that objects are said to display their real colours under sunlight (when black and red objects can be differentiated) rather than, for example, under sodium illumination (when they cannot). But, if this is part of the story it certainly is not all of it, as the case of the yellow sunlit wall that appears brown testifies (see, page 13, above). Cases such as real shape (apparent shape of a surface perpendicular, at its centre, to one's line of sight) and real pitch (apparent pitch when sound-source and observer are at rest relative to one another, etc.) are obviously more in the nature of arbitrary convention - the convention adopted being to take as real a "standard" or "central" case amongst the possible variants. But, again, I shall not follow and select amongst different specific suggestions in this matter.

Whatever the actual conventions are, phenomenalism does allow a solution to the problem that generated the need for philosophical theories of perception. According to that theory, talk of the real properties of objects is based on conventions which one learns as one learns the language. One has (certain?) knowledge of one's sense data, and thus of object's apparent properties. Because the conventions bridge the gap between real and apparent properties, and because one has knowledge of apparent properties, one thereby has knowledge of the real properties of objects - knowledge of the way the world is.

Phenomenalism is, then, seen to be a remarkable theory - remarkable, chiefly, in three respects. Unlike representative
(or even naive) realism, phenomenalism is startlingly extraordinary: it seems very far removed from the sort of thing that any intelligent person might be led to say on the basis of a little Socratic prodding. The way the theory is developed in the hope of avoiding certain *prima facie* objections makes it seem unacceptably complicated. However, unlike the other theories, it does at least provide an outline of a possibly successful attempt to tackle the problem that led, in the first place, to the construction of philosophical theories of perception. Small wonder that in the earlier years of this century so much ink and effort went into attempting to establish a satisfactory version of phenomenalism.

There are times when I have felt that one was *driven to* phenomenalism. There are good reasons why one should never take up naive realism, and sound arguments that would make one quit representative realism for phenomenalism. Despite feeling driven to it, phenomenalism seems so awful a theory that one doubts that it can be correct. I suggest that one reason for the doleful state of the philosophy of perception is that others have, at least implicitly, come to much the same conclusion. But, it is only true that one is driven to phenomenalism if one first accepts certain assumptions. Because one can reject these assumptions there is some hope of building a satisfactory theory of perception.
III The Cartesian Doctrine of Perception

A. A Common Feature of the Traditional Theories

The previous chapter was largely concerned with a review of the traditional philosophical theories of perception. In that review I attempted to show how representative realism and phenomenalism can be seen as developing naturally from naive realism's failure to meet the philosophical problem that precipitates the search for a theory. Beyond simply stating them, the theories were examined to a limited extent for several main reasons. First, because one only really gets the full flavour of a theory when one sees the sorts of difficulties it faces and the moves it makes in its attempts to meet those difficulties. Second, because knowing the problems a theory faces makes understandable the move to the next theory. Third, while the examination was not exhaustive, thus not allowing one to conclude finally that no traditional theory is acceptable, it was comprehensive enough to suggest that the traditional theories are unlikely to prove satisfactory - a conclusion which would appear to be endorsed by many philosophers today.

However, the major point of the review is to demonstrate that the traditional theories have a tenet in common. As this point can be gleaned from a relatively summary examination of the theories, there would have been no purpose in having given a more exhaustive consideration.
The common feature of the traditional theories is the central role they accord to sense data. In all the theories, knowledge of (the properties of) one's sense data is taken to be the basis of one's perceptual knowledge of the way the world is. In naive realism, the gap between knowledge of sense data and knowledge of the world is bridged by the properties of sense data being said to be identical to those of (objects of) the world. In representative realism, the gap is supposedly bridged by relations other than identity between the properties of sense data and those of the world. And, in phenomenalism, the gap is held to be bridged by (implicit) knowledge of the linguistic conventions governing talk of real properties. Thus, all the theories see one's knowledge of the world as being based for its justification (even if not causally based\(^1\)) on one's knowledge of one's sense data. Because sense data are nothing but the objects of one's awareness or conscious experience, the common tenet of the traditional theories can be stated as that one's knowledge of the world is based on one's perceptual awareness or conscious perceptual experience.

In the historical review, I discussed phenomenalism and representative realism in terms of sense data because it is in these (or directly comparable) terms that the theories have usually been explicated. Also, I indicated that naive realism could be stated in these terms. Because I made such general use

\(^1\) More will be said of this distinction shortly. See, pages 132 and 144-159 below.
of this terminology in the historical review, I explicated the common tenet of all these theories in the same terms. However, the terminology is not necessary to anything I have to say (and indeed, it will largely be avoided in the rest of this work). The terminology could have been avoided throughout, though perhaps with the loss of some brevity. Because sense data are simply the bearers of the properties objects merely appear to have, mention of them could be avoided by just talking about the apparent properties of objects. Thus, one can say that the traditional theories all hold that the basis (in justification) for one's perceptual knowledge of the world is how things appear to one to be, or that appearances are epistemologically basic in perception. Because what is apparent is merely what one is aware of or consciously experiences, it again follows that the common tenet of the traditional theories can be stated as that one's knowledge of the world is based upon one's perceptual awareness or conscious perceptual experience.

B. The Cartesian Doctrine of Perception

I shall call the thesis that one's knowledge of the world is based upon one's perceptual awareness or conscious perceptual experience.

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experience, 'the Cartesian doctrine of perception'. Because words such as 'awareness', 'consciousness' and 'experience' are so notably vague, it is not amiss to say a little more in explication of the thesis.

The Cartesian doctrine can be somewhat crudely characterized as that one's knowledge of the world is based upon perceptual experience. This can be understood in what one might call a 'weak' or a 'strong' sense, depending upon how 'perceptual experience' is construed. If it is taken to refer to all the experience an individual has when operating in the world as a perceiver, then the claim is just a statement of a general empiricism - a position that would be disputed by few philosophers today. However, the claim is capable of a stronger interpretation - this interpretation being given by construing 'perceptual experience' in a phenomenological way, to refer to the conscious experience one is aware of in perception. (The contrast is, for example, that between, respectively, the experience of stumbling upon a mother bear with two cubs, and the experience of visual awareness of two small, and one large, black patches, auditory awareness as of a roaring sound, etc.). It was in order to indicate the stronger claim that I used the expressions 'conscious perceptual experience' and 'perceptual

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awareness' when I first stated the thesis. Throughout this work by 'the Cartesian doctrine of perception' I shall mean the stronger claim.

So far, I have generally characterized the Cartesian doctrine of perception by saying that perception is based upon conscious perceptual experience or perceptual awareness. Because of the vagueness of the terms occurring in both these expressions, almost any combination of these adjectives with the nouns seems as satisfactory as any other, and there is a tendency to try to achieve clarity by piling one adjective upon another. The resulting expressions are cumbersome and a simpler alternative that is at least as clear is desirable.

One might think that the Cartesian doctrine could be stated by saying that all perception is based upon sensation. However, this is not unequivocal because 'sensation' is ambiguous in much the same way as 'experience'. While 'sensation' is normally used in philosophy as a technical term referring to a sub-class of mental events (or states?), it is also sometimes used to refer to the stimulus which plays a causal role in producing perception.4

Stating the doctrine by saying that all perception is based upon awareness is equivocal because 'awareness' is ambiguous, although not in the way that 'sensation' is. One sometimes

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says that one is only aware of what one is paying attention to, although, in another sense, while I am not paying attention to the plane passing overhead I am certainly aware of it. In the same way, though perhaps to a lesser extent, one also sometimes speaks of only being conscious of what one is paying attention to, although usually one is conscious (in another sense of that word) of far more than this.

Thus, as there seems to be no succinct natural expression that is perfectly suitable for stating the Cartesian doctrine, I shall merely choose the least unsatisfactory. I reject 'sensation' and 'experience' because they are both grossly ambiguous. Further, I reject 'conscious' because of two ways in which it could be misleading. First, the Freudian use of the term could mislead. Second, if one were to deny the Cartesian doctrine and say that perception without consciousness is possible, this could mislead by being taken to suggest that an unconscious person could perceive - which is not at all what would be intended. Thus, in future I shall use 'awareness' in stating the Cartesian doctrine and I stipulate that this term should be understood throughout, in the inclusive sense - that is, not in the sense where one is only aware of that to which one is paying attention.

5 The incredible definitions that have been offered for this term give some idea of its misuse. See: Kendon Smith, Behavior and Conscious Experience: A Conceptual Analysis (Athens, Ohio: Ohio University Press, 1969), pp. 93-97 for a review, and 103-118 for Smith's own, equally astounding definition.
Even with this stipulation made, the statement that one's perceptual knowledge is based on awareness is not unequivocal because there is another ambiguity to 'awareness'. In one sense 'to be aware' seems to be roughly equivalent to 'to know' or 'to perceive': for example, many people are not aware (that is, do not know) that 'Anthony Burgess' is a nom de plume; or, I thought I was aware of (that is, perceived) a mouse in the room, but I must have been mistaken as an exhaustive search revealed nothing. In that in one of its senses 'to be aware' is roughly equivalent to 'to know' this ambiguity is similar to the "perceptual"/"non-perceptual" ambiguity of the verbs of perception (see pages 4-8 above). This is to be contrasted with another sense - a sense in which when I mistakenly thought that I perceived a mouse I was aware (or had awareness) as of a mouse - that is, visual awareness of a small grey patch, auditory awareness of squeaky sounds and shuffling noises, etc. I will call these, respectively, 'the knowledge sense' and 'the phenomenal sense' of 'awareness'.

There are two features which serve to separate the two senses. First, like 'to know' and the perceptual verbs 'to be aware' can be followed by constructions beginning with either 'of' or 'that'. All occurrences of 'to be aware that ....' would appear to be occurrences of the knowledge sense of the verb: one might be aware (in the knowledge sense) that a black thing came into contact with something white, but one is only aware (in the phenomenal sense) of a black patch coming into
contact with a white patch. (Occurrences of 'to be aware of...' on the other hand can be either knowledge or phenomenal senses of the verb). Second, the knowledge sense is veridical in a way the phenomenal sense is not. One can only be aware that X if 'X' is true. Similarly, one can only be aware (in the knowledge sense) of an X if there, in fact, is an X (in the immediate vicinity). But one can be aware (in the phenomenal sense) of a black patch without there being any black patch (except as the object of one's awareness) - for example, when one alone hallucinates a black patch.

It is obvious that in the statement of the Cartesian doctrine 'awareness' should be understood in the phenomenal sense. In the other sense, the statement would virtually amount to saying that perceptual knowledge is based on perceptual knowledge - which is extremely unenlightening as to the basis of perceptual knowledge. Thus, I further stipulate that, throughout this work, 'awareness' is to be understood in the phenomenal sense only - a stipulation which greatly clarifies the statement of the Cartesian doctrine of perception.

I have retreated to stipulating a use of 'awareness' after only a very cursory examination of words that might be suitable to express the Cartesian doctrine. However, a more full consideration of such words would only confirm that stipulation is necessary. To cite one example, White's discussion of 'awareness' and 'consciousness' in his book *Attention* 6

amply demonstrates the difficulty of making true generalizations about such terms, let alone selecting one that is entirely appropriate. Although I have made stipulations I have not attached an obscure or unusual meaning to 'awareness'. The sense I have indicated captures what philosophers commonly mean when they use this word. As will become obvious shortly, a good many other terms are in use in philosophy which are intended to have much the same meaning as that which I have stipulated for 'awareness'.

To end this discussion I want to explicitly mention the fact that saying that someone is aware of something does not entail that they believe anything. It is standard to distinguish between what one might call 'phenomenological' and 'belief' uses of expressions such as 'seems', 'appears', 'looks', etc. In their belief use they are employed to downgrade a claim from a knowledge claim to a belief claim; for example, someone not confident of his mathematical ability might, after working it out to the fourth decimal place, say that the decimal expansion of one-third seemed (appeared, etc.) to be infinitely long. In contrast, the phenomenological use of these expressions carries no commitment to the subject holding any belief. For example, Chisholm, concluding a discussion of 'appears' says:

The term "look" similarly, has an epistemic and a phenomenological use. If we say "That ship looks as though it were in trouble", we probably want to convey that the available evidence indicates that the ship is in trouble. But if we tell the oculist that his "A" looks blurry, we don't mean to express any inclination to believe that it really is blurry.
The same contrast between a sense that involves belief (or an inclination to believe) and a sense that does not is indicated in Price's claim that:

Each of these verbs ["looks" ("feels", "sounds", etc.), "appears", and "seems"] has two senses: first a perceptual sense; and secondly, what I [Price] will call a tendency-to-believe sense.\(^7\)

Now, in the phenomenological use, to say that A seems (appears, etc.) to perceive X entails that A is aware of X; therefore, to say that A is aware of X does not entail that A holds any beliefs.

It is clearly possible for a person to be aware of something (or some event), X, without believing that X exists (or occurs): as, for example, when someone mistakenly takes himself to be hallucinating. But, it is less clear that a person can be aware of something without there being something that that person believes: for example, one might think that if someone is aware of X then he must, at least, believe that he is aware of X. However, there is a substantial issue in the philosophy of perception which indicates that not even this minimal belief is necessary.

The issue is sometimes put by asking whether all seeing is "epistemic" or whether some is "non-epistemic". To maintain that some perception is non-epistemic is to maintain that perception is not conceptually connected with believing - that perceiving does not necessarily involve believing. Warnock's paper "Seeing" is often credited with having introduced the idea that some seeing (and thus some perception) is non-epistemic, but the idea is perhaps most fully explored in Dretske's *Seeing and Knowing*. Unfortunately, Dretske's statements of the epistemic and non-epistemic thesis are not totally without problems, and Close's recent attempt to improve matters is inadequate in several respects. Although I will not argue for it here, I think that the contrast between the thesis that all perception is epistemic and Dretske's claim that some is non-epistemic is captured by the contrast between, respectively:

Necessarily, if anyone perceives anything, that person is caused to have some belief, and

It is possible that anyone should perceive anything and not be caused to have any belief.

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Dretske gives an account of non-epistemic seeing on which it is true that whenever S non-epistemically sees D, D looks some way to S\textsuperscript{13} - or, in the terminology I am using in this work S is aware (as) of D. Generalizing, it is the case, then, that Dretske accepts:

It is possible that anyone should be aware (as) of anything and not be caused to have any belief, or, that one can be aware of something without being caused to have any belief. In this way, it is clear that if one adheres to the Cartesian doctrine of perception, one is only able to maintain that there is non-epistemic perception \textit{if} one construes 'awareness' in such a way that being aware of something does not entail acquiring any beliefs. Whether there is non-epistemic perception is only a live issue amongst adherents to the Cartesian doctrine of perception if awareness is not belief entailing. As this is a live issue amongst philosophers who (it will shortly be made obvious) accept the Cartesian doctrine, then being aware of something cannot involve holding any belief.

C. The Wide Acceptance of the Cartesian Doctrine

I argued above that the Cartesian doctrine of perception is a tenet common to phenomenalism, and naive and representative realism. I should make it clear that - unlike some cases in philosophy - it is not an assumption that only needs to be ex-

\textsuperscript{13} Dretske, \textit{Seeing and Knowing}, p.20.
posed to be seen to be unsatisfactory. In fact, quite a few writers make fairly explicit statements of the common tenet.

I shall now present a selection of these statements, which will both show how widespread the doctrine is and confirm that it is a common element of the traditional theories.

If the Cartesian doctrine is correct, that is, if perceptual knowledge is based upon awareness, then one might expect that all perception involves having awareness. (This is not necessarily so - see pages 113-17 below). Certainly if all perception were to involve awareness, awareness would always be available to be the basis of perception. Thus, although not identical, the two theses - that all perception involves awareness, and that all perception is based upon awareness - are intimately associated, and I begin by mentioning four clear statements of the former thesis. First, John Locke (a representative realist), who says:

Whenever there is sense or perception, there some idea is actually produced, and present in the understanding.\(^{14}\)

which translates into that all perception involves having sense data, or equivalently, that all perception involves having awareness (or being aware of something). Second, Frege, who says:

Sense-impressions are necessary constituents of sense-perceptions and are a part of the inner world.\(^{15}\)


Third, Broad who says:

There is one other point which I suppose that everyone would admit to be common and peculiar to perceptual situations. This is the fact that sensation plays a unique and indispensible part in them.... it would be admitted that there cannot be perceptual situations without sensations. I think that it would also be admitted that sensations play a part in perceptual situations which they do not play in any other sort of situation. I will express this fact by saying that perceptual situations are "sensuous".16

Finally, Ryle, who says that:

observing entails having sensations,

and makes it clear that he takes this to be a general feature of perception and not something peculiar to observation when he says:

When a person is described as having seen a thimble, part of what is said is that he has had at least one visual sensation, but a good deal more is said as well.17

Again, these latter three claims clearly translate into the terminology being used in this work as that all perception involves awareness.

Perhaps the clearest statement of adherence to the Cartesian doctrine occurs in the first two sentences of Quinton's article, "The Problem of Perception", where he states that:

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17 Ryle, Concept, pp.206 and 229 respectively. The qualms Ryle expresses (pp.200-201) have to do, not with the doctrine itself, but merely with the use of the word 'sensation' to express it.
The problem of perception is to give an account of the relationship of sense-experience to material objects. The relationship has traditionally been seen as logical, a matter of showing how beliefs about objects can be established or supported by what we know in immediate experience.\(^\text{18}\)

Similarly, Price (a phenomenalist) says in his book *Perception*, that as philosophers interested in perception "we want to know what seeing and touching themselves are" and, presumably in an attempt to achieve this end, he says that the aim of his book:

is to examine those experiences in the way of seeing and touching upon which our beliefs concerning material things are based, and to inquire in what way and to what extent they justify those beliefs.\(^\text{19}\)

Finally, Chisholm, who says that:

the appearance of a physical object - the way of being appeared to which the object as stimulus serves to cause - plays a fundamental role in the context of justification. If I ask myself Socratically what my justification is for thinking that it is a tree that I see, and if I continue my self-examination ..., I will reach a point at which I will justify my claim about the tree by appeal to a proposition about the way in which I am appeared to.\(^\text{20}\)

In recent years there have even been a few published comments explicitly identifying the Cartesian doctrine as a widely

\(^{18}\) A.M. Quinton, "The Problem of Perception" Mind 64 (1955), p.28. Although Quinton begins his article in this way, he comes to conclusions that contradict this being a correct statement of the problem. See page 86 below.

\(^{19}\) Price, *Perception* p.2. See also, pp.22-26 where Price argues that 'to perceive' is ambiguous: in one sense meaning to have a certain type of awareness; and in the other sense meaning this and something more.

\(^{20}\) Chisholm, *Theory* p.97 - see also, ibid, Chapter 2.
held view. For example, Erdelyi notes that a part of the entry in the 1955 *Webster's New World Dictionary* under 'perception' runs, "consciousness, awareness .... the awareness of objects... through the medium of the senses"\(^{21}\) - which suggests that perception is inseparable from having awareness. Firth, Rundle and Pappas, for example, all label the Cartesian doctrine as a commonly held assumption, and the view is even found in Cornman and Lehrer's introductory text.\(^{22}\)

Although the Cartesian doctrine is slowly being recognized more widely as a common assumption in the philosophy of perception, it is not currently in any general disrepute. I end this section by referring to three philosophers who have recently displayed their commitment to the doctrine. In a paper read in 1974, Hirst claims that:

> the overwhelming fact about perceiving is that it involves complex and characteristic presentational experiences varying in sensuous character according to the sense organ stimulated. Insofar as we acquire beliefs about the world, it is by means of


these presentational experiences; the beliefs are understood in terms of them and our manipulation of objects are guided by them.\(^2\)

In that Dretske, in *Seeing and Knowing*, holds that all seeing involves non-epistemic seeing,\(^2\) and that all non-epistemic seeing involves awareness (see page 79 above), he is clearly committed to the claim that all seeing involves awareness. In his 1975 review of Armstrong's *Belief, Truth and Knowledge*, he indicates that he still accepts such a claim and, moreover, accepts it for perception in general.\(^2\) Thus, Dretske clearly adheres to the Cartesian doctrine. Finally, I mention Pollock, who in his 1974 book *Knowledge and Justification* argues for the conclusions "that knowledge of physical objects is based somehow on the way things appear to us".\(^2\) Thus, it is obvious that Pollock accepts the Cartesian doctrine. (I shall have more to say concerning Pollock's claims later in this work - see pages 213-15, below).

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I conclude then, that the Cartesian doctrine is a common element in the traditional theories of perception. Although it may not have received explicit statement until fairly recently, it is a claim which many (if not all) philosophers would not have repudiated if it had been made explicit. Indeed, I have shown that many contemporary philosophers accept the doctrine, and inasmuch as present-day philosophical discussions of perception are in the same "general framework" as that of naive realism, representative realism and phenomenalism, they accept it also.

It is understandable that so many philosophers have accepted, and continue to accept, a "general framework" of operation that includes the Cartesian doctrine. This is because the very problem (or at least a major problem) that provides the incentive for building philosophical theories of perception is normally cast in the terms of the Cartesian doctrine. Briefly stated, the problem is that if things one time appear one way and at another time appear differently, how does one know the way things really are? This very natural way of putting the problem seems itself to assume the Cartesian doctrine - that is, that awareness (or how things appear) is the only basis there could be for knowledge of how things are. It is clear then, that Cartesian assumptions run all the way back through the traditional theories to the most natural way of stating the original problem.
D. The Possibility of Philosophical Theories Without the Cartesian Doctrine

Despite the widespread acceptance of the Cartesian doctrine of perception, a few writers have suggested that it is possible to develop philosophical theories that deny it. The earliest such claim that I know of is in Quinton's article "The Problem of Perception" (published in 1955) where he says:

I conclude, then, that experiences are not only not in fact the basis of our empirical knowledge, but that they would be inferior to the basis we have.27

More recently, Rundle in his 1972 work *Perception, Sensation and Verification* has argued for a theory of perception that does without the Cartesian doctrine. For instance, in his discussion of animal perception, he says:

Given satisfaction on the questions of causality which might arise it would seem that there is no other point at which the claim that the cat has seen can be challenged; there is no call to establish the existence of inaccessible feline sense-data, or any other inner non-physical states of the animal. ....There is a 'gap' if you like, between descriptions of behaviour and ascriptions of seeing, but it is a gap to be bridged by ascertaining the causal links, not by supplementing the behaviour with some accompanying mental event or experience.28

Notable amongst other recent philosophical theories of perception that entail a denial of the Cartesian doctrine are those put forward by Dennett and Pitcher.29 However, perhaps

27 Quinton, "Problem". p.50.
the other writer whom it is important to mention more fully is
J.J. Gibson. He would probably regard himself primarily as a
psychologist, but many of his writings contain a mixture of
psychology and philosophy. For some time now, Gibson has advo-
cated philosophical and psychological theories of perception
that are closely parallel - and the philosophical theory explic-
citly denies the Cartesian doctrine of perception. Such denial
is obvious, for example, in Gibson's statement of one of the
theses which he develops later in *The Senses Considered as Per-
ceptual Systems*:

> The seemingly paradoxical assertion will be made that
> perception is not based on sensation. That is, it is
> not based on having sensations, as in the second mean-
ing [that is, the second meaning of 'sensation' -
> awareness], but it is surely based on detecting infor-
mation, as in the first meaning.\(^{30}\)

The scientific thesis that Gibson denies here is that perception
is causally based upon awareness, whereas the associated philo-
sophical thesis which he also denies is that perception is based
upon (in the sense of *justified by*) awareness.

Finally, there is Armstrong, who in his 1961 work *Per-
ception and the Physical World* developed a theory of perception
markedly out of line with traditional theories. His statement
that:

> perception is *nothing but* the acquiring of knowledge
> of, or on occasions, the acquiring of an inclination
> to believe in, particular facts about the physical

world, by means of our senses.\textsuperscript{31} might lead one to think that he denies the Cartesian doctrine. In fact, the matter is more complicated than it might at first seem, and I shall postpone a decision on whether Armstrong accepts or rejects the doctrine until after a subsequent, more full examination of his position (see pages 260-64 below).

One can, then, divide philosophical theories of perception according as to whether they accept or reject the Cartesian doctrine. Theories that accept the doctrine have the advantage that they are familiar and (therefore?) seem \textit{prima facie} plausible. The main disadvantage to accepting the doctrine is that a long tradition of trying to build philosophical theories which accept it has resulted in accounts (representative realism, phenomenalism, etc.) whose problems are well known and seemingly intractable. However, the problems of trying to construct a theory that rejects the Cartesian doctrine would seem to be even more formidable. Stating that perception is not based on awareness seems implausible, and raises the question of what, if not awareness, one's perceptual knowledge is based on. Despite these \textit{prima facie} difficulties, I shall argue that there are overwhelming reasons for concluding that a philosophical account of perception that accepts the Cartesian doctrine of perception can never be satisfactory.

\textsuperscript{31} Armstrong, \textit{Perception}, p.105.
One might think that because Rundle, Gibson and others have advocated theories of perception that deny a thesis (the Cartesian doctrine) which has had a long tradition of acceptance in philosophy, they would have explicitly paraded arguments against it. But this would be wrong. As will become clear later, there are arguments to be found in these writers' works which can be used against the Cartesian doctrine, but they do not play the crucial role in the works that one might have expected of them. Thus, in what follows, part of what I shall do is to set out arguments against the Cartesian doctrine of perception - something that, as far as I know, has never been done before.
IV Criticism of the Cartesian Doctrine

A. Perception Without Awareness

If all perceptual knowledge and belief is based upon awareness, one would expect awareness to be a feature of all perception. Indeed, of the selection of philosophers quoted from, or discussed, in assessing adherence to the Cartesian doctrine (see section C of the previous chapter) John Locke, Frege, Broad, Ryle, Hirst and Dretske either explicitly state, or say things that imply that awareness is present in all perception. But this is simply false: there are cases where one perceives - has perceptual knowledge or justified perceptual beliefs - where there is no awareness. I shall refer to these as cases of 'perception without awareness'. There are some more or less clearly distinguishable different types of perception without awareness.

First, there is subliminal perception which is best explicated via the notion of thresholds. A threshold for a given effect (for example, perception) is the shortest duration of a given stimulus at a given intensity, or the lowest intensity of a given stimulus of given duration, at which the effect is obtained (perception occurs).¹ Basically, subliminal perception

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¹ I defend the notion of thresholds - which has come under attack in recent years from psychophysicists - in an appendix to this work. See pages 288-302 below.
occurs if the perceiver's threshold for awareness of some actual
type of stimulus is higher (longer duration or higher intensity)
than the threshold for perception and the stimulus is intermed­
iate between the two thresholds. In such a case, the perceiver
would perceive without being aware — he would subliminally per­
ceive, that is perceive as a result of a stimulus which fell be­
low the limen (or threshold) for awareness. A (fictional) case
might be helpful.

Imagine a subject whose threshold for awareness has been
determined, and whose threshold remains invariant over time and
any other factors that change through the course of the experi­
ment. The subject is asked to name and/or describe objects that
come freely to his mind while he gazes at a screen. Onto the
screen are projected, at levels below the threshold for aware­
ness, pictures of objects. In the experiment, it is found that:
the rate at which the subject passes from one description to the
next is identical to the rate of change of pictures; the names
or descriptions the subject gives are those of the objects which
are simultaneously pictured on the screen; that the detail of
description given by the subject mirrors the depth of detail of
the pictures; etc. These facts would strongly suggest that the
subject is perceiving at levels below the threshold for aware­
ness. The case could be made even more convincing by elabora­
tions describing subsidiary tests — it could be confirmed: that
perception is involved, by discovering that the correlations
between pictures displayed and descriptions break down when the
subject is, for example, blindfolded; that awareness is not involved, by asking the subject to report if he is ever aware of pictures on the screen and attaching a galvanic-skin-response recorder to him to check on his honesty; etc. I stress that the example is fictional - real experiments are never as "clean" as the one I have imagined. But the story seems coherent and were it to occur, it would be a case of subliminal perception.

There are two pertinent questions about subliminal perception. The first: does it occur? The cautious answer is that one cannot be certain - the evidence for it is not unequivocal. Although the only comprehensive and dispassionate review of the question that I know of concludes that subliminal perception occurs,\(^2\) this is not a conclusion that all psychologists would accept. While I shall not examine the question in any detail here, there are two easily described facts that make subliminal perception seem likely. First, in information-theory terms, man's perceptual, central processing and response apparatus is capable of handling (and does, in fact, handle) information at a far higher rate than is capable of being represented in awareness.\(^3\) Second, although when the question is put one is inclined to think of exotic possibilities such as subliminal advertising,\(^4\) more mundane occurrences would seem to indicate


\(^3\) See, e.g.: Erdelyi, "A New Look", pp.16 and 20; and Dixon, Subliminal, pp. 23-24.

that subliminal perception occurs. For example, people wake from sleep more easily (lower sound stimulation) to words that are particularly "meaningful" to them (such as their name). The selective nature of this response and the fact that some reflexes cannot be elicited during sleep, suggest that this waking is mediated by perception. While awareness of the sound can occur in sleep (for example, integrated into a dream), this is not always the case. When it is not the case one would appear to have a completely unremarkable example of perception below the threshold for awareness (which is higher in sleep than when one is awake).

But, whether subliminal perception in fact occurs is unimportant for my purposes. What is important, so far as philosophical issues are concerned, is what is logically possible. I shall briefly digress to explain.

Philosophers, in their attempts to explain what it is they do qua philosophers, have sometimes said things such as that philosophy is interested in conceptual matters. Philosophy, unlike science, is not interested in synthetic questions, but, rather, in what is analytically true. Or one might say, using a distinction which some hold to be coextensive with the analytic/synthetic distinction, that philosophy is interested in necessary, and not mere contingent truths. Philosophy is interested in the meanings of terms.

Not all philosophers would accept all these claims (some might accept none of them) and certainly many (if not all) philosophers would conceive of philosophy as a more extensive discipline than these statements alone would indicate. Despite this, there is a core of truth to these statements about what characterizes philosophy. For instance, at least a part of the philosophy of perception is the giving of an account of what is meant by the term 'perceive'. Giving the meaning of 'perceive' will consist in outlining the conditions that logically must be met before one is prepared to call something a case of perception - that is, a spelling out of the conceptual links between the notion of perception and other notions. Given this, it becomes clear how the logical possibility of some phenomenon or occurrence is relevant to a philosophical thesis. Despite what the facts of the matter might be, the philosopher's analysis of perception is circumscribed by what is logically possible, and by this alone. Thus, given an analysis of perception, if one can construct a coherent case that is logically possible, and which, were it to occur, would show that the analysis is either not necessary or not sufficient, one has thereby demonstrated the inadequacy of the proposed philosophical analysis.

This sort of role for the logically possible in testing philosophical positions is commonly accepted in practice, though perhaps given little explicit discussion. I think that one should be no more squeamish about using it in the testing of philosophical theses than about using cases which as a matter of
fact do occur. Both types of cases have their attendant difficulties, whether it be establishing what in fact is the case or establishing what is logically possible. Testing a philosophical thesis by (sometimes intricate) descriptions of what is logically possible, should be no more worrying than testing a thesis by reference to (perhaps recondite) facts.

The above account, as well as the very distinction between what is in fact the case and what is logically possible, might appear to depend upon the "dogma" of a sharp analytic/synthetic distinction. One can sketch an exactly parallel account even if one abandons this dogma. For instance, if like Quine, one imagines that rather than a sharp distinction between analytic and synthetic sentences there is simply a gradation in the degree of one's reluctance to give up a sentence, then one can no longer formulate one of the aims of philosophy as I did above. Having abandoned the dogma, one would have to construe the philosopher's interest in conceptual matters to do with, for example, perception, as an interest in the truths to do with perception which one would be least inclined to abandon in the face of recalcitrant evidence. On this view, the role of the putative non-actual but possible case is different. If such a case conflicted with some sentence of the philosophical account of perception, one is confronted with the issue of what to aban-

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don. One could, for instance, abandon: the claim that this case is possible; the claim that this is a case of perception; the relevant sentence of the philosophical account - and there are, possibly, other different modifications that could be made. Which sentence is abandoned indicates something about the ranking of these sentences with regard to the degree of one's reluctance to give them up and thus, which truths are the philosophical (as distinct from the scientific) truths about perception. Thus, even if one abandons a sharp analytic/synthetic distinction, one can still appreciate the role that non-actual but possible cases play in evaluating philosophical theses.

At least two facts strongly suggest that subliminal perception is logically possible: first, one can invent stories which if true, would involve subliminal perception; and second, scientists conduct research to determine whether or not subliminal perception actually occurs. The latter, of course, is no guarantee of its logical possibility: someone might engage in (redundant) experiments to determine whether the logically impossible occurs. Also, fictional stories only guarantee the logical possibility of something if they themselves are logically coherent - and someone might deny that any story involving subliminal perception is coherent. However, that the very idea of subliminal perception is absurd is an extreme position that I have never seen argued for or maintained. On the other hand, several philosophers have affirmed the possibility of subliminal perception: for instance, Armstrong describes a fictional case
involving it; Bird argues that it occurs; and Day, in arguing that it does not in fact occur, tacitly accepts its logical possibility. Thus, the conclusion that subliminal perception is logically possible would appear to be relatively uncontroversial.

The second pertinent question about subliminal perception is: Is subliminal perception a type of perception? A zealous defender of the Cartesian doctrine could maintain that even if a case such as those I have called 'subliminal perception' were to occur, it simply would not be a case of perception (despite the name given it) and so need not be accounted for in a philosophical analysis. Such a course, while possible, would seem unattractive. Cases of subliminal perception have many of the marks of standard cases of perception: they lead to the acquisition of knowledge or belief(s) about the world; they are causally dependent upon stimuli much like those that result in perception; they depend upon the proper functioning of sense organs; etc. Thus, maintaining that subliminal perception is not a type of perception, looks like the last-ditch defence of the Cartesian doctrine by a dogmatist. However, this defence of the Cartesian doctrine.


8 Armstrong, in his 1961 work, rejected subliminal perception as a type of perception, but he retreated from this position in his 1968 work. See, respectively: Perception, p.124; and Materialist, p.232.
doctrine is not precluded. My further arguments against the possibility of retaining the Cartesian doctrine will show such an extreme move to be otiose.

Besides cases of subliminal perception, a second class of cases is that where the stimulus is above the threshold, but for some other reason perception occurs without awareness. Armstrong has suggested that when one's attention is distracted one perceives without awareness. As an example, he describes a man walking along, deep in conversation, who carefully avoids some obstruction in his path without being aware of it. Such examples involve cases of perception, but it is not clear to me that they do not involve awareness. Might one not contend, for example, that the man was aware of the obstruction, though interest in the conversation caused him to pay little attention to it - to the extent that even moments after avoiding the obstacle the man did not remember it? As such an account is possible, it seriously undermines any support that might be sought from those cases of purported perception without awareness that can alternately be explicated in terms of inattention. One might attempt to reinstate such cases by claiming that only so far as

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one pays attention to something does one have awareness of it.\textsuperscript{11} While this claim is attractive, it is not without its difficulties: for instance, attention is a matter of degree, whereas awareness is an all-or-nothing affair. Not wishing to open the Pandora's box of attention, I shall abandon the claim that one has awareness only when one pays attention — and, consequently, I do without any support any such cases might provide.

A factor which can cause an otherwise above-threshold visual stimulus to be not represented in awareness is if the light of the stimulus falls on the very periphery of the retina. It is widely acknowledged that as one approaches the periphery, vision is increasingly indistinct, at some point only movement, and not stationary objects, being perceived. I know of no experimental work that clearly distinguishes between perception and awareness in peripheral vision, however, it is well established that at the very periphery, stimulation results in no awareness but merely an orienting response causing the eye to move so that the incident light falls on the fovea.\textsuperscript{12} If the orienting response, which is very accurate, is taken as evidence that perception has occurred — rather than this being merely a reflex-reaction — it, alone, is a clear case of perception.

\textsuperscript{11} This position appears to have some empirical support. See: pages 104-04 below.

without awareness. Moveover, there is some reason to think that in any visual search task (such as reading) subsequent eye movements are determined largely on the basis of the information available to the percipient from peripheral vision - information that one is not aware of in, for example, reading.\(^\text{13}\)

It has been suggested that this sort of peripheral vision might be responsible for those cases where one "just knows" or "feels" that, for example, there is someone else in the room, without one being aware of having perceived a person.\(^\text{14}\) One might be inclined to question whether this ever really happens but, as in the case of subliminal perception, it would certainly seem to be logically possible. Don Locke,\(^\text{15}\) who discusses cases of this type briefly, expresses doubts as to whether such beliefs, even if true, are ever justified (which is tantamount to doubting whether these are cases of perception). But, once again, this doubt can be terminated by noting that it is logically possible that such beliefs be justified.

Imagine that event E occurs at the same time as (or shortly before) A acquires the belief B. It is logically possible that belief B should be correct and that A should know


\(^{15}\) Don Locke, Perception, pp.234-35.
this. This situation is repeatable, and it is certainly logically possible that (in the ideal, limiting case) belief B should occur when and only when both E has occurred and B is true. If these conditions are met, then given a sufficient number of repetitions, A would have the premises of a sound inductive argument, the conclusion of which is that beliefs of type B, when they occur, are reliable, and that it is justifiable to believe B whenever this belief occurs. Thus, in general, one may conclude that if some event is associated with acquiring some belief, then it is logically possible that that event be associated with someone acquiring a justified belief.

One might be suspicious of the idea that perceptual beliefs can be justified by inductive arguments. For instance, there are all the problems, well known in the philosophy of science, of inductive justification. Despite these problems, there seems little doubt that inductive arguments do provide justification for claims about future cases or general conclusions, as much in perception as in science. Or, one might wonder whether all perceptual beliefs are not justified by something other than an inductive argument. Certainly, in justifying perceptual beliefs one normally has recourse to something other than an inductive argument, but this does not establish that inductive arguments are not able to provide justification for perceptual beliefs. Moreover, it is not clear to me that in justifying what one might call 'low-level' perceptual beliefs one is not forced to rely upon inductive justifications. If
this is so, it might be the case that one does not think of induction as justifying perceptual beliefs merely because one so seldom explicitly considers the justification of such low-level beliefs. There would seem, then, to be no reason for discounting the conclusion on the basis of the fact that the nature of the justification is inductive.

Thus, because it is logically possible for such beliefs to be justified, one must countenance the possibility of, for example, perceiving that someone else is in the room without having awareness of someone else in the room. For much the same reasons as those adduced in the case of subliminal perception (the involvement of sense-organs, etc.), it seems correct to classify these as cases of perception. Also, unlike the cases of avoiding "unnoticed" objects, etc., these are not cases where one might hope to be able to explain away lack of awareness as mere lack of attention - for, in these cases, there will be no visual, auditory, etc., awareness despite the attention directed toward that end. These, then, would seem to constitute a second class of logically possible cases of perception without awareness.

A phenomenon that it is well-established actually does affect awareness is referred to by psychologists as 'masking.'

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For example, in pattern masking the exposure of a word on a screen is followed very closely by the exposure of a jumble of letters (the mask). In a representative experiment it was found that as duration of exposure of words was decreased (that is, as the stimulus decreased towards the threshold and below) the subject's judgment of whether a word was displayed before the mask, decreased to chance performance before judgments of similarity of form, which in turn decreased to chance before judgments of similarity of meaning. That is, even at levels at which they were not aware of the stimulus (and judgment about whether the stimulus occurs was at chance or below chance performance), subjects displayed behaviour which indicated that they had perceived the stimulus and registered its meaning. Thus, masking seems to produce perception without awareness.

A similar phenomenon has been reported as resulting from attention direction. In one experiment, subjects attended to and repeated a message being presented to one ear. To the other ear were presented various words, some of which had been earlier shock-associated for the subjects. Although the subjects reported lack of awareness of words in the second ear, they showed galvanic skin responses at the occurrence of the shock-associated words which indicated that the words were perceived. Subsequent experiments confirmed that the subjects' failure to report aware-

17 Tony Marcel, "Unconscious Reading: Experiments on People Who Do Not Know that They Are Reading", paper presented at the British Association for the Advancement of Science (September 1976).
ness was due to no awareness having occurred.  

There are a host of other phenomena (for example, perceptual defense, the "automatization" of perception), that would seem to indicate some sort of perception without awareness, but they do so less clearly and I shall not review them here. However, I will mention the rather dramatic case of someone reported to see without awareness in part of his visual field. Part of this man's visual cerebral cortex has been destroyed, which resulted in his being blind in the majority of his normal visual field. (By 'normal visual field' I mean the area in which a normal person would have visual perception). However, in experiments with the man it was discovered that he can locate (and, for example, reach out and touch) objects that fall in his normal visual field but fall outside the area within the normal visual field in which he has awareness. Also, the man can guess the identity of objects so placed at rates far exceeding chance. It would seem that this man can see in a larger part of his normal visual field than the area in which he has awareness - that is,  

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in some areas of his normal visual field he has perception without awareness. Moreover, it is reported that from taking part of these experiments and reading reports of them, the man has been able to increase the area of his visual field in which he has awareness.\(^\text{20}\)

While the phenomena that I have mentioned in the last few pages seem to stand apart from subliminal perception, one could argue that they all are cases of subliminal perception. Consider, for example, masking: one can say either that masking produces a raising of the threshold of awareness for stimuli occurring immediately before the mask; or that masking is totally unrelated to thresholds but is a reason why a stimulus is not represented in awareness although the stimulus is above the threshold for awareness. Similarly, two alternative accounts can be given for the other phenomena mentioned above. Although there is no sharp distinction to be drawn between these sorts of cases and classic cases of subliminal perception, they seem sufficiently distinct to be listed separately.

The most interesting set of cases of perception without awareness is totally distinct from the sorts of cases I have discussed so far - it is the sub-class of perception that psy-

\(^{20}\) From two master tapes of A. J. Marcel of the Medical Research Council, Applied Psychology Unit, Cambridge, England, being interviewed by David Suzuki, recorded by Volkmar Richter in the summer of 1976 for the Canadian Broadcasting Corporation's programme "Quirks and Quarks".
Psychologists call 'proprioception'. Basically, proprioception depends causally upon nerve endings in the muscles, joints and inner ear. Most proprioception is kinesthetic perception - the perception of the movement of the organism's own body parts. Pitcher mentions kinesthetic perception and that it is perception without awareness, but it is to Gibson that one must turn for a full discussion of the matter.

Gibson's *The Senses Considered as Perceptual Systems* contains detailed discussions of the various sensory systems, and the following comments on proprioception are taken from these discussions. Concluding his discussion of the movement of body parts he says:

In all these perceptions [perceptions of bodily movements] the sensory qualities arising from the receptor type is difficult to detect, but the information is perfectly clear. Kinesthesis is the registering of such information without being sensory; it is one of the best examples of detection without a special modality of sensation.22

Discussing the organ causally responsible for providing information about movements of the whole body (as opposed to movements of body parts) he says:

In human sensory psychology it has long been a puzzle why there are no introspectively clear impressions from this [the vestibular] organ. .... A man given a quarter-turn in a rotating chair, for example, perceives a quarter-turn but can report no qualitative impression that is specific to the cupola of the horizontal canal. How

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could a perception arise without sensation? If it can in this case, it might in other cases, and the implication is that sense-perception need not be founded on sensation.\(^2\)

Gibson argues that there are other cases of perception without awareness\(^2\) but none of them are as convincing as the above two cases. However, the above two cases of proprioception seem undeniably to be cases of perception without awareness.

Don Locke has discussed such cases\(^2\) and he makes the important point that the extent of the knowledge one gains from proprioception is relatively limited. He points out that kinesthetic perception is very unspecific. (This is confirmed by the studies of psychologists.\(^2\) Proprioception provides one with only the most general and undetailed knowledge of body movements. Detailed knowledge of body movements depends very largely upon knowledge of how one intends, or intended to move one's body. Proprioception usually only plays a role in knowledge of body movements when some intended movement is thwarted in a major way - as, for example, when one's intention of moving one's finger in a straight line along a rod is thwarted by en-

\(^2\) Ibid. p.71

\(^2\) See, e.g.: ibid, pp.142, 204-06 and 37.


countering a sharp curve in the rod, as opposed to a gentle curve in the rod which would not be likely to be perceived. However, while kinesthetic perception is only limitedly specific it is vast in extent and virtually everpresent. Clearly, all of one's more obvious movements, however little one is conscious of them or thinks about them, involve elements of proprioception. Less usually remembered, though, are the "small movements" that one makes when "sitting still" (and even when sleeping). These small shifts of position, etc., are highly important for avoiding irreparable damage to body tissue and they occur constantly. All these "small movements" involve some elements of proprioceptive knowledge. Thus, although lacking in detail, it would seem that proprioception is one of the most pervasive and probably one of the most important types of perception.

Proprioception is definitely to be set apart from the phenomena discussed before it. Proprioception is never represented in awareness, whereas all the other sorts of cases discussed involve perception that sometimes (perhaps even normally) would be accomplished by awareness, but are not so accompanied in these situations because of some special feature - the stimulus is masked, the stimulus is intermediate between the thresholds for perception and awareness, etc. Thus, unlike all the cases discussed before it, proprioception is not able to be construed as subliminal perception (unless one were to make the strange claim that all proprioception involves stimuli that fall below the threshold for awareness).
I have presented three broad classes of (actually occurring or logically possible) cases of perception without awareness. However, I do want to explicitly dissociate myself from unwarranted claims that have sometimes been made about the occurrence of perception without awareness. I mention just four examples. First, Gregory, who claims:

Perception is not essentially based on what is experienced. Behaviour can be appropriately guided by sensory information of which we are unaware. This may occur in bizarre form in sleepwalking; it is common in driving and from the results of laboratory experiments may safely be accepted as the rule rather than the exception, for observers are often unable to report on what characteristics in fact set scale or distance or even serve for object recognition.\(^{27}\)

Second, Feyerabend, who says:

Usually .... information travels via the senses, giving rise to distinct sensations. But this is not always the case .... Latent learning leads to memory traces directly, and without sensory data. Post hypnotic suggestion leads to (belated) reactions directly, and without sensory data. In addition there is the whole unexplored field of telepathic phenomena.\(^{28}\)

Third, Puccetti, who while not explicitly discussing perception without awareness, makes claims which, if they were true, would involve such perception. He says:

It is .... well known that in epileptic states and in sleepwalking, cortical .... events of the kind which cause complex intentional behaviour like writing a


letter, carrying on a conversation, or even diagnosing a patient, can occur without consciousness.\textsuperscript{29}

If, in referring to latent learning, Feyerabend had in mind learning accomplished in sleep, then all three of these authors implicitly make claims about perception without awareness during sleep. There is a general criticism of this and the similar suggestions concerning hypnotic and epileptic states. It seems clear that dreaming involves having awareness in sleep, and it is commonly accepted that perception \textit{related awareness} can occur "integrated" into dreams (for example, dreaming one is caught in a blizzard when the blankets have slipped off the bed). Just as one has dreams that are not remembered, should one not concede that in hypnotic and epileptic states one might have awareness that is not remembered later? Thus, because all these cases \textit{could} involve awareness (which, perhaps, is not remembered) it is not clear that they demonstrate that perception without awareness occurs in them. Similarly, for the other cases these authors mention. The driving case that Gregory refers to may be explained away as a simple lack of attention (as I did above for similar cases - see pages 98-99). Unfortunately, Gregory does not indicate what laboratory experiments he has in mind, but if it is those which show that "observers are often unable to report on which characteristics in fact set scale and distance"

etc., then these show, not what Gregory claims (that there is perception without awareness), but merely that one is unable to tell what elements of awareness, if any, are responsible for the beliefs and knowledge one gains in perception. Similar remarks apply to latent learning not accomplished in sleep. Likewise, I see no reason to accept Feyerabend's claim that telepathy—should it occur—would not involve awareness. The 'extra-sensory of 'extra-sensory perception', which I presume is another name for telepathy, does not mean *without sensations* (that is, *without awareness*), but rather *extra to* (that is, *other than*) the conventionally recognized senses.

Finally, there is the research conducted principally by Sperry, on split-brain subjects. On the basis of this research, which is referred to increasingly frequently, it is often claimed that the isolated right hemisphere of the brain can be responsible for the subject perceiving something without any awareness. However, all that is justified on the basis of the research findings is the weaker claim that the isolated right


hemisphere can be responsible for perception while, because of its separation from the "language-centre" of the brain, the subject is in no position to make it evident that perceptual awareness has occurred, if in fact it has.

I am inclined to be more cautious than the above-mentioned writers. To highlight perception without awareness is, to some extent, to fly in the face of traditions well-entrenched in both philosophy and psychology. To claim that perception without awareness occurs in cases that can be accounted for in some other way throws disrepute on the general claim that perception without awareness occurs. Consequently, I reject the sorts of cases discussed immediately above (pages 109-110) because, although they very well might involve perception without awareness as long as there is a possible alternative explanation they provide scanty support for the argument I am building.

Even rejecting these doubtful cases, the evidence supports the conclusion that perception without awareness does occur (proprioception, peripheral vision, etc.) or at very least, is logically possible (subliminal perception, etc.). This conclusion seems to be in accord with the philosophical literature for, while I know of no claims that perception without awareness is not logically possible, there are some arguments for the possibility. For example, Leibniz argues in a general way for perception without awareness. More recently, Rundle has argued for it, and Dennett's discussion of perception certainly allows for
its possibility.\footnote{32 See respectively: G.W. Leibniz, The Monadology and Other Philosophical Writings, trans. Robert Latta, New Essays on the Human Understanding - Introduction (Oxford: The Clarendon Press 1898), pp.370-77 - though Leibniz confuses some issues that should be kept distinct; Rundle, Perception, p.51 - Rundle's argument stands even if one rejects his identification of awareness with self-awareness; and Dennett, Content, pp.114-26 - though Dennett is surely wrong in associating awareness (what he calls 'awareness\textsubscript{1}') solely with language-related behaviour.}

I know of only one argument that might be thought to lead to the conclusion that perception without awareness is not logically possible. Dewan has argued:

All knowledge is connected to experience ... But experience itself is a form of awareness or consciousness. Epistemology in effect assumes the reality of consciousness.\footnote{33 E.M. Dewan, "Consciousness as an Emergent Causal Agent in the Context of Control System Theory", in Consciousness and the Brain: A Scientific and Philosophical Inquiry, eds. Gordon C. Globus, Grover Maxwell and Irwin Savodnik (New York: Plenum Press, 1976), p.187.}

Although Dewan does not explicitly say that perception without awareness is logically impossible, what he does say suggests he would accept the following argument which leads to that conclusion:

All knowledge is based on perception.
All perception is based on experience.
All experience is just a type of awareness.
Therefore; all perception (and knowledge) is based on awareness.

The argument is, of course, fallacious - depending upon an equivocation on the sense of 'experience' in the second and
third sentences of the argument. (See page 72 above for an explanation of the ambiguity. The argument does not establish the logical impossibility of perception without awareness. Although I would concede the reality of awareness (or consciousness), I do not think that epistemology "assumes" this, and my arguments against the Cartesian doctrine are equally arguments against the claim that awareness plays any essential role in the part of epistemology that is the philosophy of perception.

Because perception without awareness is possible, it is wrong to think that the notion of perception is tied to that of awareness. As the thesis that all perception is accompanied by awareness is so closely allied to the Cartesian doctrine, the possibility of perception without awareness throws doubt upon the Cartesian doctrine as an element of a satisfactory philosophical theory. If there are (possible) cases where someone perceives but has no awareness, it would seem that the perceptual knowledge and/or belief(s) gained in those cases cannot be based upon awareness. But, although doubt is thrown upon the Cartesian doctrine by the possibility of perception without awareness, the doctrine is not thereby conclusively shown to be false.

One can supplement the Cartesian doctrine in an attempt to defend it against the putative problem these cases pose. One possible line of defence is consonant with Firth's statement of what he calls 'the first condition of the Cartesian doctrine of perception', which is as follows:
We have a sense-experience whenever (or at least almost whenever) we make a psychophysical perceptual judgment of the form "I now perceive such and such a physical thing".\textsuperscript{34}

Essentially, the move is to weaken the doctrine, from how I have been construing it, by allowing for the possibility of occasional perception without awareness. This would seem to be tacit admission of the types of cases discussed above. Three comments about such a move. First, it is not even clear to me that one has sense-experiences \textit{almost whenever} one makes such perceptual judgments. Getting clear on this question would involve clarifying what 'almost whenever' means in this context, and then "head-counting" amongst cases of perception (or possible cases of perception?); neither of which seems to me to be profitable activities in settling the philosophical issue. The evidence I reviewed above indicates that cases of perception without awareness are not just unusual oddities, and I suggest that it is not clear that a qualification as weak as that in Firth's statement is satisfactory. Second, simply restricting the applicability of the thesis as Firth does means that, alongside any account of perception in the Cartesian mould for the cases of perception with awareness, there will have to be a complementary account in a non-Cartesian mould for the cases of perception without awareness. Firth's course leads, then, to two theories, or at least a "double-barrelled" theory of perception. As well as the aesthetic unattractiveness, there is the problem that this change

\textsuperscript{34} Firth, "Sense Experience", p.6.
would do little to *salvage* the Cartesian doctrine because it simply leaves dangling and unanalysed the whole class of cases that present the difficulty for the doctrine. It may even be the case that the Cartesian-type analysis would ultimately be able to be abandoned, if the analysis which has to be provided for the problem cases should turn out to be a satisfactory analysis of *all* cases of perception. Third, I shall later present evidence which indicates that awareness, even where it occurs, cannot be the *basis* for perceptual knowledge— that is, another element of the Cartesian doctrine will be seen to be unacceptable. Thus, weakening *this* element of the Cartesian doctrine is futile.

Another, stronger, modification of the Cartesian doctrine is possible. It states that the Cartesian doctrine can be maintained for "central" cases of perception, while for "peripheral" cases an account that depends upon the "central" cases can be developed. To understand the motivation for this modification of the Cartesian thesis, and to throw some light on what might count as "central" and "peripheral" cases, it is perhaps best to think of the development of this variant as a reaction to the examples of proprioception, which I presented above in showing that the Cartesian doctrine in its original, simple, form is unsatisfactory.

*Proprioception is perception which involves no awareness. This, of course, stands in contrast to, for example, visual perception which usually is accompanied by awareness. Then, one might modify the thesis by saying that the Cartesian doctrine be*
be retained for those cases of perception accompanied by awareness - the "central" cases: for example, visual perception - while cases like proprioception - "peripheral" cases - be accounted for by reference to visual perception, etc. In this way one might hope to make all cases of perception dependent upon awareness - the dependence being direct in the central cases and indirect in the peripheral cases in that they depend somehow on central cases. What, exactly, the nature of the account of peripheral cases might be is perhaps best laid out in reference to a specific example.

Consider an example Gibson mentions (see pages 106-107 above) - a person perceiving that he has executed a quarter-turn in a rotating chair (without visual, etc., input), in the absence of any perceptual awareness of a quarter-turn. To develop an account of such a peripheral case one needs to postulate some element that occurs whenever such a turn is made. A possible candidate is the belief that a quarter-turn has been made. For the quarter-turn to be perceived the belief in question must be justified. In any particular case, the correctness of the belief could be established by the subject via visual perception immediately before and after the rotation takes place. Repeated occurrences of the belief when and only when such a rotation takes place would furnish the premises of a strong inductive argument, the conclusion of which is that in the appropriate circumstances the belief-type (that one has undergone a quarter-turn) is justified. As beliefs of this type could be justified,
the account shows how it would be possible to perceive that a quarter-turn had been made without having any perceptual awareness of a quarter-turn. The account also shows how the explanation of peripheral cases depends upon central cases: the correctness of the belief in question is established by reference to visual perception - a central case, where the justification of a perceptual belief is, according to the thesis, dependent upon awareness.

One essential ingredient in the account of the perception of a quarter-turn given above is that, although the subject be allowed visual, etc., perception immediately prior and subsequent to the rotation, he should not be allowed such perception during the rotation. This is necessary in order to establish that the case is one of proprioception. If the subject is allowed visual, etc., information during the rotation, then there is no means of establishing that the belief that a quarter-turn has been made is not consequent upon visual input.

There is a slight and surmountable difficulty with all such cases. In the example, the subject confirms that a quarter-turn has been made by means of visual perception before and after rotation. The difficulty is that the visual evidence is as compatible with a quarter-turn having been made as it is with a three-quarter-turn (in the opposite direction) having been made. I chose this example because it is proprioception that most conspicuously lacks accompanying awareness. All other examples from the same class will also have a similar difficulty
because they will all involve the perception of spatial movement (of body parts or the whole body), and as there is no unique path between any two different spatial positions or orientations the change could always have been brought about in more than one way. Thus, the difficulty is endemic to the whole class of cases that are most clearly peripheral. The difficulty is, however, not insurmountable: it arises only when one attempts to explain the possible justification of a single proprioceptive belief. If one considers the complex web of proprioceptive beliefs that one could imagine being justified in similar ways, it is clear that such knowledge could distinguish between the various alternatives. In this case, all that is needed to solve the difficulty is, for example, proprioceptive knowledge of the direction of rotation.

A prima facie problem is raised for this account of peripheral cases by persons not equipped with the normal complement of senses. As an extreme example, consider a person who is congenitally blind and deaf. Clearly, such a person cannot ascertain the correctness of his proprioceptive beliefs by visual means and so the sketch of a possible justifying argument given above would not apply in such a case. Yet, presumably, people who are both blind and deaf are able to proprioceive. Perhaps one could imagine a justifying procedure analogous to that sketched above but with the evidence of sight replaced by that of touch. Although the details of the case need not be explored, this would seem to involve an environment in which direction is
able to be discriminated on the basis of tactile information, and which has been explored by the subject before the quarter-turn. The account might seem complex but it is no different in its essentials from that already given involving visual confirmation. It would seem, then, that the modified Cartesian thesis can account for the blind and deaf person who proprioceives, so long as one classifies touch-perception as accompanied by awareness. (Can one have a blind and deaf person who does not have a touch-sense, and yet who nonetheless proprioceives? Can one have people with no sense of touch? How many senses can a man lack and still proprioceive?).\textsuperscript{35}

But, there are difficulties that face this modified Cartesian thesis. For the staunch defender of the Cartesian doctrine, perhaps the least worrying of these is that the modifications have introduced an essential bifurcation. In one set of cases, perceptual beliefs are justified by reference to awareness, whereas, in the other set of cases, perceptual beliefs are justified by something else (no matter that these other things are probably beliefs justified by awareness). Having succeeded in cutting loose the bonds that tightly tie some perception to

\textsuperscript{35} These are questions which one probably cannot even begin to answer until one gives up the idea that there is a monolithic sense of touch. Although it seems fairly clear that there is no one sense of touch, it is difficult to say quite how many different senses are lumped together in this broad category. For further discussion, see: Frank A. Geldard, The Human Senses, 2nd ed. (New York: John Wiley & Sons, Inc., 1972), p.258; and R. Melzack and P.D. Wall, "On the Nature of Cutaneous Sensory Mechanisms", Brain 85 (1962): 331-56. See also, footnote \textsuperscript{37} page 122.
awareness, someone not committed to the Cartesian doctrine might very well wonder whether the justification of all perceptual beliefs might not be cut free from awareness. That is, the modification of the Cartesian doctrine is "in the direction" of a non-Cartesian account: might it not be most profitable to explore the possibility of a totally non-Cartesian account? Of course, the burden of proof is not on the defender of the Cartesian doctrine.

There are three objections to this modified version of the Cartesian doctrine that have to do with the possibility of perception without awareness. First, a point which is a headache, but which does not constitute a refutation. In dealing with proprioception, the modified Cartesian doctrine drew the distinction between central and peripheral cases along the boundaries of traditionally recognized "types" of perception. Visual, auditory, olfactory, etc., perception were all classed as central cases, whereas proprioception was classed as peripheral. Perception without awareness shows that the cake has to be cut in a different way as well. The most obvious cases of perception without awareness other than proprioception are a subclass of cases of visual perception, but I have already mentioned auditory perception without awareness (see pages 103-104 above). In addition, it seems to be widely accepted that man's smell perception is far richer than his smell perception that is ac-

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companied by awareness. Consequently, the division between cen-
tral and peripheral cases cuts across as well as along the
boundaries between different "types" of perception. Thus, the
division between central and peripheral cases is far more messy,
and less easily made, than it might at first have seemed. While
this, of course, does not show the modified version of the Car-
tesian doctrine to be absolutely unacceptable, it does increase
the strain on one's ability to accept it as a satisfactory philo-
sophical thesis.

Second, there is the question whether all cases of percep-
tion without awareness can be classified as peripheral and ac-
counted for in ways similar to that developed above for proprio-
ception. I think that the answer is that cases of, for example,
subliminal perception can be imagined which are not dependent in
the right sort of way on central cases. Such cases are slightly
extraordinary - but their fictional character should not obscure
the fact that they are genuine counter-examples to the modified
Cartesian doctrine.

Consider this example. Imagine a subject in a room con-
taining nothing but a button and a cinematographic screen with

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37 This is true on both the traditional classification of five
senses and on the classifications suggested recently by various
psychologists. See e.g.: Norman L. Munn, Psychology: The Funda-
mentals of Human Adjustment, 4th ed. (Boston, Massachusetts:
Obviously relevant is the nice philosophical question, which I
am unable to explore here, of the basis on which different senses
are distinguished from one another.
a light above it. The subject is periodically presented with various puzzles. Sometimes he can instantly solve these puzzles and at other times not. When he cannot solve the puzzles, if he presses the button, the light above the screen flashes, drawing his attention to the screen, and the solution to the puzzle is presented subliminally on the screen.

The nature of the puzzles and their solutions are such that no recourse to sense-perception is needed to establish that the putative solutions do, in fact, solve the puzzles presented. For example, to the puzzle "What word of eight letters, all of which letters occur in 'Constantinople', means not subject to variation?", a solution would be 'constant'. The list of such "crossword puzzle" examples must be practically endless, as are examples such as providing analytic sentences in which a given word occurs, producing a proof of a given conclusion from a given set of premises, etc. Given an unlimited amount of time, the subject might discover that the "solutions" that occurred to him when he was looking in the direction of the screen when the light flashed are always correct solutions to the puzzles that had previously been presented. This discovery is made without recourse to sense-perception. The past successes of these "solutions" provide the subject with the premises of a strong inductive argument with conclusion that he is justified in accepting as correct any "solution" that occurs to him under the appropriate conditions. That is, the beliefs which occur to him subsequent to the light's flashing are justified, and so one has a
right to talk about this as a case of subliminal perception. Were it to occur, as is logically possible, it would, of course, be a case of perception not accompanied by awareness - that is, a peripheral case - that is not correctly accounted for by reference to central cases.

As I have described this case, it is one of subliminal perception which is not even indirectly dependent upon awareness whatever the subject himself might believe. The subject might realise neither that it is a case of subliminal perception nor that it is a case of having justified beliefs; but that it is both these things would be obvious to an outside observer of the subject and his circumstances. In fact, there is no reason why the subject should not realise that he is engaged in subliminal perception. Notice that although the sort of investigation in which the subject might involve himself in order to determine that he is perceiving, and that the perceiving is subliminal, would presumably involve perception accompanied by awareness; confirming that he is perceiving, and that the perceiving is subliminal, is a different matter from confirming the truth of the belief acquired as a result of the subliminal perception. It is only confirming the truth of the belief acquired that is not dependent directly or indirectly upon awareness - but this is enough to establish that the case envisaged is a refuting instance for the modified version of the Cartesian doctrine.

There are two grounds on which one might suspect that in the sort of case described, the subliminal perception does, after all, depend in some very indirect way on perception with
awareness. First, it is consistent with how I have told the story, that the puzzles be presented to the subject by some means that involves perception with awareness. Second, the puzzles that I have given as examples were presented in a language that was, presumably, learned by some process that involved perception with awareness. Both of these points can be nullified by a suitable elaboration of the example. To cope with the first, one could have the puzzles presented subliminally; and to cope with the second, one could have the puzzles and their solutions presented to the subject in an artificial language that has to be taught by an ostensive definition procedure involving, again, only subliminal presentations. The story in this form is more convoluted and would involve a boringly lengthy description, but it is conceptually no more difficult.

I claim that this sort of case is logically possible. Undoubtedly, its occurrence would necessitate subliminal perception with far more content than is usually thought might occur—but that is beside the point. The logical possibility of such a case establishes that there could be peripheral cases of perception that are not dependent upon central cases in the way claimed by the modified version of the Cartesian doctrine. As such, they are counter-examples, and they establish the unacceptability of the modified Cartesian doctrine as an element in a philosophical account of perception.

Essentially, what I have argued above is that one can conceive of a sub-class of a person's perception which is subliminal
and isolated from their other perception in that it in no way depends upon that other perception (which includes perception with awareness). The third problem for the modified version of the Cartesian doctrine centres on the question of whether it is conceivable that all of an individual's perception might be unaccompanied by awareness. Clearly, these two points are not unconnected. Having conceded that it is logically possible that in some cases the threshold for perception might be lower than the threshold for awareness (by conceding that subliminal perception is logically possible), I see no basis for ruling out the possibility of this being true for all the perception of some individual. It could be that the gap between such an individual's thresholds for perception and awareness is sufficiently great, and they inhabit an environment sufficiently peculiar that every perceptual "signal" to which they are ever exposed is intermediate between the two thresholds. This all seems to be quite within the realms of possibility - and, of course, it constitutes a sketch of the story of an individual all of whose perception is subliminal. If all of their perception is subliminal, then awareness could hardly be the basis for any of their perceptual beliefs or knowledge. Thus, the possibility of an individual all of whose perception is subliminal I take to show that the modified version of the Cartesian doctrine is not acceptable.

Similarly, one could imagine an individual whose perception is all supra-liminal, but not represented in awareness be-
cause of some further factor. Imagine someone who has brain damage such that he not only has perception without awareness in a part of his normal visual field, but in all his visual field and similar effects in the case of all the other senses in which perception is normally accompanied by awareness. Such a person's perceptual life would be of the nature of one's proprioceptive life: a matter of acquiring beliefs, confirming or disconfirming beliefs by other beliefs acquired, etc., all without the phenomenal gloss of awareness. (Presumably one could construct other cases of perceptual lives robbed of awareness by causes other than brain damage - all stimuli being masked, etc.). Apart from imagining simple extensions of subliminal perception or supraliminal perception that is caused to be without awareness by some further factor, there are independent grounds for thinking that there could be individuals none of whose perception is accompanied by awareness. I mention two.

First, there is the case of animals. Whether it be mere prejudice or a conclusion based on good grounds, there is a widespread view that animals (or, at least, the lower animals) do not have awareness. Usually those who maintain that not all animals perceive, draw the class of animals with awareness more narrowly than the class of animals that perceive. For instance, Thorpe argues, on the basis of behavioural evidence, that some form of consciousness is widespread amongst animals.38 But, the

animals to which he hesitates to ascribe consciousness are cer­
tainly of a higher order than those to which one might be pre­
pared not to ascribe perception. Dixon argues for much the same
conclusion, but on different, and I think stronger, grounds.
He points out that the higher behaviour and finer discrimina­
tions that man makes typically occur with awareness and are
mediated by the phylogenetically newer parts of the brain. The
type of behaviour that is mediated by the phylogenetically older
parts of the brain is the behaviour that still occurs when aware­
ness is lost. This is some reason for hypothesizing that ani­
mals without these phylogenetically newer parts of the brain may
lack awareness. The suggestions Rose makes, based on much the
same sort of evidence, are more specific in that they imply that
all non-mammals (in particular, birds and fishes) do not have
awareness, and I think: that: no: one: would deny that such ani­
mals perceive. While there are problems in attempting to assoc­
iate awareness with any particular brain area - in that both
what one is aware of, and what function is associated with
what brain area, can change to a limited extent - such observa­

40 This sort of conclusion seems to be tacitly accepted by
philosophers such as Fraser and Puccetti, who assume that aware­
ness is a product of evolution. See: Alex Fraser, "Evolutionary
1-12; and Puccetti, "Physicalism", pp.171-183.
41 Steven Rose, The Conscious Brain (London: Weidenfeld &
42 Charles T. Tart, "Discrete States of Consciousness", in Sym­
posium on Consciousness, ed. Robert E. Ornstein (New York: The
tions probably provide the best basis for ascribing or withholding the ascription of awareness to animals. All these authors realise that assertions about awareness are speculative, but whether one thinks such considerations good or bad evidence for the conclusion, the conclusion itself does not seem inherently nonsensical. Yet, if either the simple or the modified version of the Cartesian doctrine were correct, such suggestions would have to be incoherent, self-contradictory. Again, the conclusion would seem to be that the logical possibility of animals which perceive but are without awareness shows that the Cartesian doctrine is unsatisfactory.

A second argument for the possibility of individuals who perceive but have no awareness, relies upon a standard objection to epiphenomenalism.\textsuperscript{43} If epiphenomenalism is true, so the objection goes, then awareness is irrelevant, and everything would be as it is had there been no awareness. But for everything to be as it is would require that perception occur in this world without awareness. Thus, if epiphenomenalism is coherent, and one can state this objection to it, then it seems one must be able to make sense of the notion of individuals none of whose perception is accompanied by awareness. Yet another conclusion which suggests that no matter how one might qualify it, any thesis that retains anything of the essence of the Cartesian doctrine will not be satisfactory.

\textsuperscript{43} Succinctly put by Puccetti, "Physicalism", p.172.
Although the arguments of the last few pages stem from criticisms directed specifically at the modified version of the Cartesian doctrine, they are, as I have indicated, points that would apply equally against any thesis that retained the spirit of the Cartesian doctrine. I should like to consider here, one further point that would apply against any version of the doctrine. This is that the very concept of awareness is itself somewhat vague and unclear.

Imagine a person in a room in which there is absolutely no light, and thus, no possibility for stimulation of the visual sensory system (if one rules out such "unusual" stimulation as applying pressure to the eyeball, etc.). Such a person is clearly able to see, for instance, that there is no red light directly in front of him. The problematic question is whether a person so situated has, or is capable of having in this situation, perceptual visual awareness. Should one say that such a person has perceptual visual awareness of total and uniform blackness, or that he has no perceptual visual awareness at all? To adopt either alternative leads to paradoxical conclusions. On the one hand, if one opts for saying that a person so situated has perceptual awareness of blackness, then as his state of perceptual awareness seems not to be able to be differentiated from that of a blind person or someone in dreamless sleep, etc., one would seem to be led to say that it is an a priori truth that the blind and those in dreamless sleep also have perceptual awareness. Even if one is prepared to countenance the possibility that the blind and those in dreamless sleep have perceptual
awareness - which is strange enough - it surely is a question of fact to be settled empirically, and not an a priori truth. (A colleague has said that since going blind he has never had visual perceptual awareness, but that he still has visual awareness in dreams). On the other hand, if one opts for saying that such a person has no perceptual awareness, then this seems to be in conflict with how one would describe the awareness of someone whose visual field is only partly occupied by a totally non-reflecting object. The puzzle about how this situation should be described is directly attributable to a vagueness in the concept of awareness.

The above point presents very little direct threat to the original, simple version of the Cartesian doctrine. That doctrine can be amended to state that perceptual beliefs are based on awareness or the lack of it: that is, the absence of awareness can be the basis for some perceptual beliefs (for example, the belief that there is no red light in front of me). Thus, the Cartesian doctrine is easily made compatible with however one chooses to describe the state of awareness of a person in a totally dark room. The threat the case poses to the Cartesian doctrine, in whatever form the doctrine might be elaborated, is indirect. It is by showing the vagueness of the concept awareness that the example casts doubt on the adequacy of the Cartesian doctrine.

Thus, I conclude that the examples of perception without awareness are sufficient to destroy the Cartesian doctrine. The
cases of proprioception, the possibility of subliminal perception, etc., show that the Cartesian doctrine in its original, simple form cannot be sustained. Considerations arising from such cases show that the same conclusion is true of the one modified version of the doctrine that I considered at some length. Perhaps more crucial, however, is the conclusions, arrived at from some of these same considerations, that no modification of the doctrine that retained the notion that perception is somehow dependent upon awareness will be a satisfactory philosophical thesis. In the subsequent two sections of this chapter I argue that there are additional reasons, based upon very different grounds, for abandoning the Cartesian doctrine of perception.

B. Causal and Justificatory Bases and Scientific Theories

In the previous section I argued that perception without awareness shows the Cartesian doctrine - that perceptual knowledge and beliefs are based on awareness - cannot be correct. This conclusion will stand given any reasonable interpretation of the relation of being-based-on. If perception is without awareness, then the knowledge and beliefs acquired in it cannot be based on awareness. However, the considerations of the rest of this chapter demand a clearer conception of what it means to say that one thing is based on another. As I have suggested earlier, the causal basis must be clearly distinguished from the justificatory basis. Because of their central role, I begin by making some preliminary remarks about the relations justifica-
In sentences such as 'Smith's intransigence justifies Sithole's resort to arms' and 'The Guatemalan earthquake justifies the suspension of some civil liberties' the justification that is referred to is clearly what one might call 'moral justification'. Besides this, there is what one might call 'epistemological justification' - which, I take it, is what is involved in sentences such as 'My giddiness justifies my belief that my chair is being rotated', 'My having seen a kiwi justifies me in rejecting the suggestion that all flightless birds are extinct', and 'My belief that Paestum was a Greek city justifies my claim that the Greeks colonised parts of Italy'. Clearly, my interest in these pages is epistemological justification, and so I set moral justification aside without further comment.\(^4^4\)

\(^4^4\) Despite the apparent disparity of these different sentences, I suggest that epistemological justification is, essentially, a relation between persons' attitudes (in the sense of 'propositional attitudes') to propositions. This thesis is clearly exemplified in the sentence 'My belief that Paestum was a Greek city justifies my claim that the Greeks colonised Italy' - because believing and claiming are propositional attitudes. (One might wonder if claiming is a propositional atti-
tude. Russell, who appears to have introduced the term mentions only believing, desiring, and doubting as propositional attitudes. These are clearly attitudes in some strong sense of that word, in which claiming, denying, suggesting, etc., are not. However, both Reichenback and Quine — two writers of some stature on this topic — while referring back to Russell as their source, give as examples of propositional attitudes ones that are only attitudes in some weak sense of that word. Thus, it would appear to be correct to construe 'attitude' in 'propositional attitude' in some weak sense that allows, as propositional attitudes, claiming and various others that cluster around saying).

It is less obvious, though I think nonetheless true, that in the other example sentences given above, the relation of epistemological justification is between attitudes to propositions. If I did not realise that I had seen a kiwi (I might, mistakenly, think that I had seen nothing but a pile of dead leaves), my having seen a kiwi would not justify the belief in question. Thus, I am justified in rejecting the suggestion that all flight-


less birds are extinct, not simply if what I see is in fact a kiwi, but only if I also realise that it is a kiwi (that is, at least, believe that I see a kiwi). Thus, it is obvious that in this case also, the relation of justification is between attitudes to propositions - though this is concealed in the original, elliptical sentence. Exactly similar comments apply to the other example - the only difference being (a feature irrelevant to my concerns), that it is difficult to imagine how one could be giddy without realising it, whereas, it is easy to imagine how one could see a kiwi and not realise it. In the following discussion, I usually only mention believing as the relata for the relation of justification, although it should be understood that my comments apply equally to all other propositional attitudes.

While the relata for the relation of justification are attitudes to propositions, I recognize that one sometimes says that some sentence justifies another. However, I think that a sentence such as "In the Cascades it rains very frequently in winter" justifies "In the cascades the danger of forest fires is low in winter" is merely elliptical for a sentence such as 'Were someone to believe that in the Cascades it rains very frequently in winter that person would be justified in believing that in the Cascades the danger of forest fires is low in winter'. It is more proper to say that the sentence 'In the Cascades it rains very frequently in winter' is relevant to 'In the Cascades the danger of forest fires is low in winter' - and it is the relevance of the first sentence to the second that enables the corresponding beliefs to stand in a relation of justification. That it is better to talk of a relation of relevance between the sentences
*simpliciter* rather than a relation of justification is clear, I think, because to say that one sentence justifies another suggests that the second sentence is thereby given some credence. Where the first sentence is not true, this suggestion is undesirable. For example, although 'John F. Kennedy is still alive' is relevant to 'Mrs Onassis committed bigamy', one would not want to suggest that the former sentence gave any credence to the latter.

One might think that the notion that justification is a relation between sentences *simpliciter* could be salvaged by limiting it solely to *true* sentences. But this is too restrictive, for as the term is normally understood, false sentences can be the relata of this relation: the ancient Chinese belief that solar eclipses are caused by a dragon beginning to devour the sun justified them in the belief that explosions would scare off the dragon allowing the sun to reappear. Nor is it possible to construe the relation of justification as holding between the truth of one sentence and the truth of another. It is difficult to see what sense could be made of 'justifying the truth of a sentence'—and, if sense is to be made of it, I would suggest that it is a fact, and not the truth of some other sentence that

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that justifies the truth of a sentence. But the truth of a sentence is just not the sort of thing that needs, or is able, to be justified - rather it is one's attitudes (of belief, doubt, etc.) to a proposition that need, and are able, to be justified. Even if one concedes that it is beliefs that are (or are not, as the case may be) justified, one might feel disinclined to accept that it is beliefs that justify. However, the suggestion that facts justify beliefs can be fairly easily discredited. If I guess that the die will fall with '6' uppermost the guess will be unjustified even if, unbeknownst to me, the die has '6' on five of its six faces.\textsuperscript{48} Having disposed of these alternative suggestions as to what the relata of the justification relation are, I take to bolster my contention that it is beliefs (and other propositional attitudes) that stand in the relation of justification.\textsuperscript{49}

In explicating the concept of justification one needs to say more than that it is a relation amongst attitudes to propositions. The explication I offer here will depend heavily on what I shall call 'positive relevance', an account of which might be given in terms of probability. I take it that p is relevant to q with respect to e iff the probability of q given e is different from the probability of q and p. By 'p is posi-

\textsuperscript{48} The example is adapted from one in Cornman & Lehrer, Philosophical Problems, pp.94-95. See also: Pollock, Knowledge p.25; and Quinton, "Problem", pp.45-46.

\textsuperscript{49} See: Lehrer, Knowledge, p.188.
tively relevant to q (with respect to e).

Using the concept of positive relevance there are several differently stringent ways in which one might explicate the notion justification. Four different possibilities are as follows:

A's belief-that-p justifies his belief-that-q (with respect to e) iff, A believes both that-p and that-q, and:

a) both, p is positively relevant to q (with respect to e), and p is true;

b) p is positively relevant to q (with respect to e);

c) A believes that p is positively relevant to q (with respect to e);

d) both, A believes-that-p-is-positively-relevant-to-q-(with respect to e), and p is positively relevant to q (with respect to e).

Of these, a) can be immediately discounted because it rules out

50 These explications of 'relevance' and 'positive relevance' are offered more as a guide to the reader of what I have in mind, than as analyses. Recent work in relevance logics is an indication of the difficulty of this latter task. See, e.g.: Alan Ross Anderson and Nuel D. Belnap, J., Entailment: The Logic of Relevance and Necessity, Vol. 1 (Princeton, New Jersey: Princeton University Press, 1975.

51 The sentence 'A's belief that p justifies his belief that q' is ambiguous between A having the belief that p justifies his belief that q, and A's having the two beliefs that p and that q where the former justifies the latter. In the above sentence in the text I intend the latter of these senses, and indicate this by the use of hyphens. This practice will be followed throughout, whenever disambiguation is necessary.
false beliefs being the relata of the relation of justification, and this (as noted above) is too restrictive. As one clearly wants to be able to say that A's belief-that-p justifies his belief-that-q, regardless of whether A realises this, and thus, regardless of whether A believes-that-p-is-positively-relevant-to-q-(with respect to e), d) is also too narrow. Clearly, c) is too narrow for exactly the same reason; but, it is also too wide in that includes the cases of A's thinking that his belief-that-p justifies his belief-that-q, when the former belief does not, in fact, justify the latter. Thus, b) seems to be the required explication of justification.

The account of positive relevance necessitated the inclusion, in the explication of justification, of the clause 'with respect to e'. But, commonly one does not talk of one belief justifying another with respect to anything else - thus a de-relativised concept of justification seems called for. Four obvious alternatives are as follows:

- A's belief-that-p justifies his belief-that-q, iff, A believes both that-p and that-q, and:
  - e) there is some e such that p is positively relevant to q (with respect to e);
  - f) there is some e such that, p is positively relevant to q (with respect to e), and A believes e;
  - g) there is some e such that, p is positively relevant to q (with respect to e), and e is true;
  - h) there is some e such that, p is positively relevant to q (with respect to e), e is true and A believes e.

53 This is in conformity with the comments in Lehrer, Knowledge pp.232-34.
Of these, e) is obviously too weak - for any p and q, there is some e such that p is positively relevant to q (for example, e is if-p-then-q), which would mean that every belief of a person justified every other belief they held. On the other hand, h) is too strong in that it would rule out those cases where A's belief-that-p does, in fact, justify his belief-that-q, though A fails to realise it because he does not believe that e. In the same way, f) is too strong; but, it is also too weak in that it would admit cases where A incorrectly thinks that his belief-that-p justifies his belief-that-q because he believes that e (where e is false). Thus, it seems that g) correctly explicates the non-relative concept of justification, and it details how 'justification' should be understood in this work.

The above is a minimal sense that can be attached to 'justification', and it represents the common denominator of the various senses that are sometimes associated with 'justified' qualified by some other term. Some authors talk about, for example, complete or sufficient justification, attaching additional conditions which narrow the sense. Often these further conditions stipulate truth-values for one or more of the relata. Such explications reflect the fact that there are perfectly ordinary English locutions involving 'justify' that seem to make assumptions about the truth of the relata. For example, the

ancient Chinese belief about solar eclipses might be justified by some other belief(s) they held, but one might, nonetheless, say that it is not a justified belief. By this one means something such as that it is a belief which is not justified by some large system of other beliefs that are widely accepted. In this way, some connection with what is true, or at least with what is thought to be true, is achieved.

Besides stipulating truth-values of the relata, there are two other ways in which the notion of justification is often narrowed. Saying that one belief justifies another is akin, in its ambiguity, to saying that (the truth of) one sentence makes the truth of another probable. Either the latter can mean that the second sentence has a non-zero probability given the first (or that the first raises the probability of the second), or it can mean something such as that the first sentence makes the second more probable than not. Similarly, to say one belief justifies another can either mean that the first justifies to some extent (provides some justification for) the second, or it can mean something such as that the first makes the second more justified than the negation of the second. It is clear that it is the former sense that is captured in the above explication—and that sense is minimal in that one could develop upon it, an account of a belief being more justified than its negation. Finally, sometimes the notion of consistency is attached to that of justification; for example, by stipulating that for p to be a justified belief, p must be consistent with the individual's
other beliefs. Again, it will be clear that my explication of 'justification' does not demand consistency (except between the two beliefs that are the relata of the relation). This is as it should be because in a minimal sense of justification it is perfectly possible for a person's belief-that-a to justify his belief-that-b, his belief-that-c justify his belief-that-d, and yet for d to be inconsistent with (or even contradictory to) b. Again, it is obvious that this sense is minimal in that a condition can easily be added to it to restrict justified beliefs to a consistent set. This brief excursion into differently qualified uses of 'justification' underlines that g) above captures a basic sense of the term common to the apparently bewilderingly different particular uses it gets put to. I prefer to operate, in this work, with a minimal sense attached to 'justification' because, in so doing, my use of the term will not exclude any narrower conceptions of justification that may be encountered; and if a narrower conception is found necessary, further conditions can be explicitly stated to achieve the desired effect.

[If the relata of the relation of justification are propositional attitudes one might wonder if this observation is not alone sufficient to rule out the Cartesian doctrine. Perpetual awareness would seem not to be able to be a relatum of the relation of justification, as awareness (in the appropriate, phenomenological, sense) would appear not to be a propositional

55 However, I do not mean to claim that every use of 'justifies' that seems natural to a competent speaker of English is captured by g). See, e.g.: Lehrer, Knowledge, pp.13-14.
attitude. Thus, whether or not perceptual awareness fits into the causal picture, it would appear not to figure in the justificatory picture at all. Although I believe that this argument is sound and that the prime trouble with the Cartesian thesis is that it is incoherent in maintaining that awareness could be a relatum of the relation of justification, I have stated the above argument hedged about by many qualifications. This is primarily for two reasons: first, that awareness is not a propositional attitude needs to be argued for; and second, if one can establish that awareness is not a propositional attitude, the dismissal of the Cartesian doctrine will demand a re-examination of the conclusion that the relata of the relation of justification are propositional attitudes. These points demand care and attention, and they are considered in the following chapter where they are more in context. Meanwhile, temporarily denying myself this more radical basis for rejecting the Cartesian doctrine, the arguments of this chapter show that there are independent reasons for abandoning the Cartesian thesis. Thus, it must be understood that the arguments of this chapter are predicated on the assumption - which I think is false - that awareness can be a relatum of the relation of justification.

In current discussions it is commonly accepted that the relata of the relation of causality are events or classes of events. Assertions that specify objects as causes (for example, 'Mouldy rye bread caused the Salem witch hunt') are, then, explained as elliptical for statements relating one event to
another (that is, 'The consumption of mouldy rye bread caused the Salem witch hunt'). There are, however, some causal statements that are not of the standard type and which defy reduction to it - for example: 'The earth's rotation causes the tropical seas to flow away from the equator' and 'Bruce's narcissism causes his vanity'. Such examples are generally taken to show that states (that is, continuing properties of something) as well as events (that is, changes in the properties of something) can be the relata of the causal relation. 56

These facts about the relations of causality and justification make it clear how it is easy for the causal basis and the justificatory basis to be confused. The justificatory basis will obviously have to be believing some proposition. But, believing some proposition is a state and, thus, can be the causal basis also. 57 This, of course, is frequently the case: Pip's belief that Old Orlick's behaviour was demented and menacing both caused and justified his belief that Orlick intended murder. Because the relata in the chain of causal relations can be identical to the relata in the chain of relations of justification,


57 Inclinations to believe will be introduced and discussed later, see pages 281-87 below. However, it should be noted here that inclinations to believe some proposition are also states and thus will also be able to be the relata of a causal relation and perhaps even a relation of justification.
it would be easy to assimilate the two chains and think that there is no distinction between the causal and justificatory base.

However, it is important not to conflate the causal and justificatory bases, for there are cases where they are not identical. Imagine that whenever I am hit on the head with a silver hammer I spend the rest of the day believing that I am James Clerk Maxwell. Being hit on the head is the causal basis of the belief, but it certainly does not justify the belief - it is not even the right sort of entity to be a relatum of the justification relation. Clearly then, the causal basis (and a causal chain) is not to be identified with the justificatory basis (and a justificatory chain), because one can be present when the other is absent. However, a simple example such as this does not show the falsity of the identification that is actually of interest here. The question is whether justificatory bases (relata of the justification relation) are identical to causal bases (relata of the causal relation) which are propositional attitudes. This is what I am referring to in the subsequent discussion of the conflation of causal and justificatory bases.

Even understood in this way, I believe that it would be incorrect to identify causal with justificatory bases. Super-

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58 What I call the 'justificatory base' (or perhaps the ultimate justificatory base) is what some philosophers refer to as 'the given'. I shall not use this term as one does not talk of the 'causal given', whereas 'causal' and 'justificatory' can both be applied to 'base'. 
stitious beliefs are, essentially, beliefs that are caused but not justified: thus, my seeing that the desk clerk has assigned me room 1313 causes me to believe (is the causal basis for my belief) that my night's rest will not be uninterrupted; but the belief is unjustified. If such examples are correct, the causal bases (which are propositional attitudes) and justificatory bases cannot be identified, because in such cases the one is present while the other is absent. While there is no doubt that one would describe such cases in the terms that I have used above, it is not clear that they really support my claim. First, when one says that a superstitious belief is unjustified, it is not clear that what is intended is not that such a belief is less justified than conflicting beliefs, rather than that there is no other belief which provides it with any justification. Further, if one tells the causal story more fully it surely is the belief that 13 is unlucky together with the belief that the clerk has assigned the 13th room on the 13th floor that causes the belief about the interrupted night, and these beliefs do together justify (in the sense of provide some support for) the belief that the night will not be uneventful.

Perhaps to get a case to make my point I need a more basic superstitious belief: for example, the belief that 13 is unlucky. But, again, the same sorts of points seem to apply. If one examines the causal bases for such beliefs, such bases are often also justificatory bases. If one believes 13 to be unlucky because one once heard someone say that it is, the
belief is somewhat justified because, on the whole, most of what people say is relatively trustworthy (the exceptions spring to mind, but they are exceptions). If the belief is caused by realising that there were 13 diners at The Last Supper, that Agamemnon died on the 13th of Gamelion, etc., then the conjection of 13 with unfortunate events does provide some justification for the belief that 13 is unlucky (independently of whether there is overwhelming evidence against that conclusion). However, my failure to find a convincing example where some propositional attitude is the causal, but not the justificatory, basis of a belief does not convince me that these two can be identified. There are several reasons for this.

First, one might think that there is a perfectly mechanical way for generating the sort of examples I need to build my case: but this is not so, and the failure of the attempt is instructive. For A's belief-that-p to justify his belief-that-q, p must be positively relevant to q (with respect to e), and e must be true. Thus, all one needs is a p that causes q where one of these conditions fails. As argued above (page 138), for any p and any q there is always some e such that p is positively relevant to q (with respect to e). Thus, the conditions only fail when e is false. Consider such a case. For example, Brendan believes that there are unicorns (q) because he (falsely) believes that James Thurber once told him there are no unicorns (p) and p is positively relevant to q with respect to Brendan's further (false) belief that Thurber never uttered a true word in his life (e). While this fits the formula of a cause-but-not-
justification example, if A believes e, then e can always be conjoined to p and the conjunction p and e, which will satisfy the conditions on justification, will be able to be made out to be the real causal basis. On the other hand, if in such an example A does not believe e, then it is difficult to make the case for p being the cause of q: if Brendan believes that there are unicorns because he believes Thurber once told him the contrary, then Brendan must believe something such as that Thurber was an inveterate liar. (Although, in the example I considered, p and e entails q, this is unnecessary: if p and e is positively relevant to q (with respect to some e') without entailing q, then if e' is true, p and e justify q; while, if e' is false, it can again be conjoined with p and e - giving, p and e and e' - which causes and justifies q). In general then, for it to be believable that p is the causal basis for q, there must be some e, believed by the individual in question, such that p is positively relevant to q with respect to e: and therefore, the situation is able to be represented as one where it is actually p and e that is the causal and justificatory basis for q.

The argument of the above paragraph relies heavily on one's willingness to expand the account of what is the cause of something. But this is a familiar feature of causal talk. 59 When one states the cause of something one does not usually specify all the causally relevant factors - one just mentions the

causally relevant factors that one's intended audience needs to be informed of. So someone who knows that the train derailment happened on a curve with a posted speed of 30 m.p.h. one can say that the cause of the accident was that the train was travelling at 60 m.p.h. To someone who does not know this, one would need to specify the cause as the-train-travelling-at-60-m.p.h.-on-a-curve-with-a-posted-speed-of-30-m.p.h. For someone who is not aware that posted speeds are relevant to safe speeds, the cause will have to be specified even more comprehensively; and so on, for additional ignorance. The familiarity of this sort of increasingly comprehensive specification of the cause of something, makes acceptable the move, from saying that Brendan's belief that there are unicorns is caused by his believing Thurber told him the contrary, to saying that it is caused by his believing both that Thurber told him the contrary and that Thurber never uttered a true word in his life.

The other thing that is relied upon above, is that saying A's belief-that-p caused his belief-that-q is not credible unless A also believes-that-e, where p is positively relevant to q (with respect to e). To say that Brendan believes that there are unicorns because he believes Thurber once told him the contrary, is not credible unless one thinks that Brendan believes something about Thurber's veracity. Although such a story would not be very credible, objectively there is no reason why poor Brendan should not be "wired up" in such a way that the one belief caused the other without Brendan having any beliefs about
Thurber's veracity. I think that, at least, a part of the reason for this is that the question of what causal relations there are between beliefs is usually settled on the basis of a rational reconstruction, rather than by direct empirical evidence. Beliefs cannot be dropped into a person to see what further beliefs are caused with the same facility that copper can be dropped into sulphuric acid to see what further chemicals occur. Rather, one reasons very much in this sort of way: Brendan is a reasonable man and so, if believing that Thurber told him there are no unicorns causes him to believe there are unicorns, Brendan must believe that Thurber is lying. Because one tends to ascribe beliefs (and thus, the causal basis) in this sort of way, one tends to always avoid ascribing to an individual a belief that causes a second belief without it also being true that the first justifies the second. Of course, all this shows is that one is disinclined to ascribe beliefs in such a way that one has a cause-but-not-justification example - it does not follow that such cases do not occur.

So far, I have talked merely about cause-but-not-justification examples; however, the point of the previous paragraph is also relevant to one's willingness to countenance cases where A's belief-that-p justified, but does not cause his belief-that-q. If A believes that-p and that-q, where one of these beliefs justifies the other, even if one has no direct evidence of a causal relation (or lack of such) between these beliefs, it still seems very natural to ascribe such a relation. However, there are
cases that could be argued to be justification-but-not-cause examples. Imagine that I believe that the Italian postal workers are again on strike, because I have not received my daily airmail copy of *Corriera della Sera* for three weeks. When I later read in *The Sun* that the Italian postal workers are expected to be back on the job in ten days' time, I gain beliefs which (further) *justify* my belief that the Italian postal workers are on strike, but these beliefs do not *cause* the belief which temporally preceded them. Thus, the beliefs I gain on reading *The Sun* appear to be beliefs which *justify*, but do *not* cause, another of my beliefs.

But is it really clear that the beliefs that justify do not also *cause* the belief in question? One might wonder if it is not just a simple case of over-causation. I take it that an event, $E$, is over-caused if there are two other events, either of which alone would have caused $E$, but which, because they both occurred, jointly cause $E$. The oil tanker's catching fire is over-caused by the simultaneous (but otherwise unrelated) explosion in its engine room and the entry of an incendiary bomb into its hold. However, concerning my belief that the Italian post office is strikebound, there are two non-simultaneous events (or states), the first of which causes the belief, the second being such that it would have caused the belief, but was prevented from doing so because at the time at which it occurred I already had the belief (the effect had occurred). Thus, my belief that the Italian post is on strike is certainly not a
simple case of over-causation.

However, there is something about the situation that is very like over-causation. One must distinguish between my having a belief and my acquiring a belief: the former is a state, the latter an instantaneous event. Both acquiring and having beliefs can be caused, but the causes for the two can be different. For example, away backpacking I wake to noises which cause me to believe that a black bear is around. Remembering that I took no precautions to protect my food, this belief causes me to acquire the further belief that I am in for a hungry hike out. Incautiously looking out of my tent I see a bull moose standing in the middle of a fast-flowing stream, shaking its antlers in which are entwined my pack, with the result that my food is falling out of the pack and being swept away in the current. Here, one belief (about the bear) causes me to acquire another (about the hungry trip out) and, at the same time that I discover the first belief to be false (and thus, would thereby lose the belief just acquired about the hungry trip out) I have beliefs (about the moose) that cause me not to lose the belief about the hungry trip out. That is, once I have seen the moose my belief about the hungry trip is caused by my beliefs about what the moose is doing, although I was caused to acquire this belief by a (false) belief about a black bear.

Now, causal talk relevant to states has some peculiarities. Consider a bridge which is caused to stay standing by a timber substructure. It is discovered that the timbers are
badly decayed and so hydraulic jacks are inserted, the timbers
removed, concrete supports constructed, and when the concrete
has hardened, the jacks are removed. Such an example illustrates
several features. First, a state (the bridge standing) can ex-
ist uninterrupted from $t_1$ to some later time $t_3$, and the cause
of the state at $t_1$ (timber substructure) be totally different
from the cause of that state at $t_3$ (hydraulic jacks). Second,
the cause of a state at $t_1$ (timber substructure) can be supple-
mented by another cause (hydraulic jacks), so that (at $t_2$ —
when the jacks are in place but the timbers not removed) both
are now the cause of the state. One might think that one could
say that at some instant the jacks take over from the timber
substructure in playing the role of causing the bridge to stay
standing. However, this is just wrong — the weight of the
bridge is gradually removed from the timbers to the jacks as the
jacks are increased in length and then the timbers are removed.
Saying that there is no point when the timbers and jacks jointly
cause the bridge to remain standing would call for an arbitrary
decision as to something such as what proportion of the weight
of the bridge has to be taken by a support in order for that
support to be said to be the cause of the bridge staying stand-
ing.

Applying these considerations to the case in hand, it
would appear that one should say that I am caused to acquire the
belief about an Italian postal strike by the non-appearance in
my mail of Corriera della Serra. However, once I have read the
local newspaper, my having the belief about an Italian postal strike is caused not only by beliefs I get from examining my mail, but also by beliefs I get from reading The Sun. My having the belief that there is an Italian postal strike is a state; a state that at first has only one cause, where that cause is later supplemented by a second. Thus, it is far from clear to me that this case, and similar cases, are genuine justification-but-not-cause examples.

Even if one were to accept them as genuine justification-but-not-cause examples, they are merely cases where one of a person's beliefs (p) is justified, but not caused by another (r), but where p is meanwhile caused and justified by a third belief (q) of that person. The clearest cases to establish the independence of causal and justificatory base would be where one belief (p) is justified, but not caused by another (r), and where there is no third belief (q) that causes (r). However, given that the discussion is limited to causes that are beliefs, such clear cases would demand a person having an uncaused belief - a possibility which I, for one, would not wish to build any argument on. Even if they are not the clearest cases one might hope for, if one construes them as genuine justification-but-not-cause examples, they do establish a conceptual distinction between one belief causing another and one belief justifying another.

In the preceding few pages I have attempted to argue that causal basis (the relata of the causal relation) and justifica-
tory basis (the relata of the justification relation) are conceptually distinct, even though they are often *in fact* identical. I have argued for the conclusion to the best of my ability, but as I have been unable to present simple examples that exemplify the point, the argument remains less conclusive than it might. I have argued for this conclusion because I believe it to be correct; although the opposite conclusion - that the causal and justificatory bases are identical - would, in fact, facilitate the remaining arguments of this section, and those of the section to follow. Thus, should my arguments of the latter few pages not satisfactorily establish that the causal and justificatory bases are distinct, my overall objectives in this chapter are, thereby, promoted and made more easily accessible.

Even if the causal and justificatory bases are conceptually distinct, the discussion of the latter few pages suggests that they are often *in fact* the same. This should not be at all surprising, for man is a rational animal, and one spectacular way in which he could fail to be rational would be if he were caused to have unjustified beliefs. If having a belief p caused one to have a further belief q, where q is not justified by p, then one would be subject to the having of baseless, unjustified beliefs. One's beliefs (and one's behaviour) would be irrational. Of course, man is not a totally rational animal, and perhaps part of this is due to the fact that one belief can cause another which it does not justify; but in as far as he is rational, one of his beliefs cannot cause another that it does not
justify. This fact about men (and other animals?) probably has a good scientific explanation in terms of survival-value— an animal so "programmed" that a belief only causes further beliefs which it also justifies would seem better fitted for survival than an animal in which a belief caused other beliefs not justified by the first. But, it is merely a contingent fact, and while it explains why the causal basis will so often also be the justificatory basis, it does not establish that these two are not conceptually distinct.\(^6\)

Having distinguished the causal basis from the justificatory basis, I think that it is obvious that 'based on' in the Cartesian doctrine— that perceptual knowledge (and/or belief) is based on awareness— is to be understood in the sense of 'justified by'. Justification is the interest of the philosopher— and this dictates the above understanding of the Cartesian doctrine. However, corresponding to the Cartesian doctrine there is another thesis obtained by construing 'based on' as 'causally based on'. This thesis— that perceptual knowledge (and/or belief) is causally based on awareness— is, I presume, contingent, open to empirical confirmation or refutation, and as such is the interest of the scientist.

Finally, I clarify a point that might otherwise cause

\(^6\) See, e.g.: Bernard Williams, "Deciding to Believe", in Language, Belief and Metaphysics, eds. Howard E. Kiefer and Milton K. Munitz (Albany, New York: State University of New York Press, 1970), p.102. A similar argument to this is presented more fully later (see pages 239-43 below.)
some confusion. Talking about the causal and justificatory basis might be thought to commit me to claiming that there is some ultimate basis that is not itself caused or justified by something further. This is a claim which I repudiate: for instance, saying that my belief that today is Friday the thirteenth is the causal basis for my belief that ill will befall me today, should not be taken to rule out the possibility that my belief that today is Friday the thirteenth was caused, for example, by seeing (and noticing) the calendar on the wall of the bank. Put abstractly, one can say that causality is a many-many relation. This dictates that it may be the case that no unique event or state is the cause of something - and thus, that there is no unique causal basis. However, although it might, strictly speaking, be improper, this will not prevent me from talking about the causal basis, just as it does not prevent one in ordinary conversation from talking about the cause of something. Again, as in ordinary conversation, context usually makes adequately clear which amongst the possibilities is intended when one talks about the causal basis.

The same comments apply to the relation of justification, which is also many-many. In this case, although I repudiate the suggestion that if A justifies B, A cannot be justified by something further. Thus, whether or not there are as a matter of contingent fact ultimate justificatory bases, that there are is not ensured by the nature of the relation itself.
The Cartesian doctrine, of course, entails that there is an ultimate justificatory basis, because it is a thesis about what items are the ultimate justificatory basis. Although I do not accept the Cartesian doctrine, I do not deny that there might, as a matter of fact, be an ultimate justificatory basis. There very well might be an ultimate basis, but the question of whether there is I do not take to be very important. If some items are the ultimate basis, they will be of the same type as non-ultimate bases (in that they are all relata of the relation of justification), and I suspect that any philosophical problems or advantages that attach to the one will attach to the other.

As a matter of fact, I am inclined to believe that there is an ultimate justificatory base. This is because, unlike causal chains, it seems that justificatory chains do not extend back indefinitely. In the kind of case I have been considering the causal basis for the acquisition of some belief is the occurrence of some event in the world - for example, I am caused to believe that something is moving by changes in the pattern of light entering my eye, which in turn has its cause, and so on, presumably, ad infinitum. Even if the causal and justificatory chains are between the same elements as far back as the belief that something is moving, they will not continue to be between the same elements any further back because the change in the pattern of light entering my eye (in contrast to a belief about such a changing pattern of light) simply is not the right sort of entity to be a relata of the justification relation. Given
that the causal and justificatory chains are so often between the same elements, the fact that the causal and justificatory chains at least diverge at this point, suggests that this might be the terminus of the justificatory chain - certainly, I see no reason to think that there has to be further links in the chain of justification.\textsuperscript{61}

One might think that, in such situations, there is a chain of justification that parallels the causal chain - the belief that something is moving being caused by a change in the ambient light patterns and being justified by a belief about a change in the ambient light patterns. Although I think it possible that one should have a belief about movement without having a belief about a change in the ambient light pattern, the suggestion might be thought by some to have a degree of plausibility in the case of the causal elements immediately preceding the belief. However, the further removed the causal element is from the belief, the less reasonable the suggestion seems: does one have beliefs corresponding to the cause of the change in ambient light patterns; the cause of the cause of the change in ambient light patterns, and so on? This suggestion as to how the justificatory chain might continue back seems most unlikely to be correct. The failure of this - most obvious - suggestion as to how the justificatory chain continues back, again suggests

\textsuperscript{61} See pages 223-29 below where I argue that being itself justified is not a necessary condition for a belief being able to justify other beliefs.
that perhaps there is an ultimate justificatory basis.\textsuperscript{62}

I turn now to scientific theories of perception. Insofar as they have anything to say about awareness in perception, traditionally, psychological theories seem to have postulated that awareness is caused by the stimulus responsible for perception, that the awareness is the causal basis for any beliefs the perceiver might form about the world, and that these beliefs are a causal element in the subsequent behaviour of the perceiver. (Some psychologists would probably identify the link between awareness and subsequent behaviour as the perception, but it is likely that one should identify perceiving with a whole set, rather than one, of these elements). This view of perception is captured by the model:

$$\text{Stimulus} \rightarrow \text{Awareness} \rightarrow \text{Perceptual Belief(s)} \rightarrow \text{Behaviour}$$

where '\(\rightarrow\)' indicates a causal connection. Obviously this characterization of "traditional" psychological theories is a crude over-simplification - but it is not so crude that it fails to capture the elements in which I am interested.

Gibson's account of perception diverges from this model in significant ways. Early in \textit{The Senses Considered as Perceptual Systems}, he outlines the theory to be developed in that book as follows:

\begin{quote}
\vspace{1em}
\textsuperscript{62} The claim is not unusual. See, e.g.: Rundle, \textit{Perception} pp. 144-45.
\end{quote}
The study of sensation is a perfectly valid branch of psychology and a vast body of knowledge has resulted from it. But the pickup of stimulus information, I will argue, does not entail having sensations. Sensation is not a prerequisite of perception .... in this book they [sensations] will be considered only incidentally, as occasional accompaniments of perception.63

This suggests an account where the acquisition of perceptual beliefs is causally dependent upon the stimulus, as is the having of awareness (where it occurs), but where the acquisition of beliefs is not causally dependent upon awareness. This type of account is captured in the following model:

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Awareness
Stimulus ---+ Perceptual Belief(s) ---+ Behaviour
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In their monograph "Efference and the Conscious Experience of Perception", Festinger, Ono, Burnham and Bamber consider yet another account of perception. It states that:

as a result of appropriately reinforced experiences the person learns the appropriate motor responses to make to precisely given constellations of stimulus input .... The result of this learning is the formation of "engrams" that may be regarded as well-learned response tendencies that are triggered off by the visual input .... The totality of the engrams that are activated at any moment is .... the conscious experience of visual perception.64

In fact, the above is their account of one particular "efference readiness" theory of perception. However, the only difference

that is important for my purposes between this and other theories of the same general type is that some seem to postulate a causal relation between the activation of an engram and the having of awareness, rather than identifying them as this theory does. In future, I will represent efference readiness theories as postulating a causal link between these two and it should be understood that identifying them is another possibility. Efference readiness theories would, then, appear to be represented in the following model:

\[
\text{Stimulus} \rightarrow [\text{Perceptual Belief(s)}] \rightarrow \text{Triggered Engram} \rightarrow \text{Behaviour} \downarrow \text{Awareness}
\]

In this model I have enclosed 'Perceptual Belief(s)' in square brackets because it is not absolutely clear to me how they are taken, by the authors of the theory, to be related to the triggered engram. Most likely they should be seen as causally related - as I have indicated above. However, some might wish to identify the perceptual belief(s) with the triggered engram. In this case, it would seem that one would, thereby, be prevented from identifying the triggered engram with the awareness, because one would, presumably, not want to identify the perceptual belief(s) and the awareness.\(^\text{66}\)

\(^{65}\) Dennett would seem to be committed to a philosophical thesis that has close ties with this psychological theory. See: Dennett, Content, pp.74-76, where he argues that the notion of perceptual discrimination is logically tied to the notion of the production of efferent responses (or the laying down of efferent response controls).

\(^{66}\) Although some philosophers - e.g., Armstrong - would identify awareness with perceptual beliefs. See pages 261-62 below.
The important feature in both the Gibson model and the efference readiness model is that in neither is the perceptual belief causally dependent upon awareness. In the above discussion, it emerged that the causal basis is very often also the basis in justification; and if this is so, then these psychological theories of perception strongly suggest that perceptual beliefs are not dependent upon awareness for their justification that is, they suggest that the Cartesian doctrine is false. I say, merely, that these psychological theories suggest this conclusion because, as I argued above, causal and justificatory dependence are conceptually distinct. This being so, it is logically possible that either of these theories be true and yet that perceptual beliefs be justified by awareness. Such a position, while logically possible, would be extremely odd; especially in the case of the efference readiness model, where it would amount to holding that something that is merely the effect of the perceptual belief provides the justification for that belief. I would conclude, then, that these psychological theories, along with the fact that the causal basis is so often the same as the justificatory basis, suggest the extreme implausibility of holding that perceptual beliefs are justified by awareness. That is, they cast grave shadows of doubt on the truth of the Cartesian doctrine of perception.

Two further comments are in order. The first is that I neither have entered, nor do I intend to enter into assessing which of these three types of theory is correct. It might be
thought that this leaves the argument of this section imperfect, because only if a Gibsonian or an efference readiness theory is true would it suggest the implausibility of the Cartesian doctrine. But this is incorrect. The logical possibility of theories such as Gibson's or the efference readiness suggests the implausibility of thinking that perception and awareness are conceptually linked. As in philosophical accounts it is the conceptual links that are of interest, the logical coherence of Gibsonian and efference readiness theories, together with the close de facto ties between causal and justificatory base, is enough to suggest that an adequate philosophical account will be one that rejects the Cartesian doctrine.

Second, the objections developed in this section against the Cartesian doctrine are distinct from, and independent of, those developed in the previous section. In that section it was argued that cases of perception without awareness showed the Cartesian doctrine to be inadequate. In this section, I have argued that it is implausible to hold that awareness provides the justification in perception. The arguments of this section would stand even if there were no such thing as perception without awareness. Despite this, it is, of course, no mere coincidence that Gibson, for example, denies both that to all perception there corresponds some awareness and that it is awareness that justifies perceptual beliefs - the two theses do bear some relation to one another.
C. Awareness Is Not The Given

The philosophical thesis that awareness provides the justificatory basis for perceptual beliefs and knowledge is associated with the thesis that the content of such experiences is "the given" in perception. A classic statement of this thesis is made in the early pages of Price's book, *Perception*:

When I see a tomato there is much that I can doubt.... One thing however I cannot doubt: that there exists a red patch of a round and somewhat bulgy shape, standing out from a background of other colour-patches and having a certain visual depth, and that this whole field of colour is directly present to my consciousness .... And when I say that it is 'directly' present to my consciousness, I mean that my consciousness of it is not reached by inference, nor by any other intellectual process....

This peculiar and ultimate manner of being present to consciousness is called *being given*.67

This thesis still occurs in the writings of philosophers concerned with perception. For example, Hirst, in his 1974 paper claimed that:

the central weakness of .... the claim that the basis for empirical knowledge is the data that are certain and "given" is the assumption that given-ness or immediacy for consciousness guarantees certainty.68

Although Hirst here denies that the given is certain, he tacitly accepts that the given is what one is consciously aware of.

68 Hirst, "Science", p.4.
Now, of course, the thesis that awareness is the given in perception and the thesis that awareness is the basis (in the sense of 'ultimate basis') of perception mutually entail one another. Clearly, if some phenomenon, X, is not the given in perception, then it must be based upon some other phenomenon, call it Y. Thus, if the justification of the perceptual claim in question is based upon the phenomenon X, questions about the justification of knowledge claims about X will have recourse to phenomenon Y - which means that Y and not X is the ultimate justificatory basis for the perceptual claim. Conversely, if X and Y are two phenomena to do with some perceptual claim, and Y provides the ultimate justificatory basis for X, then Y is logically prior to X and must, thus, be the given in perception.

In this section I present a series of cases which, I argue, show that the content of one's awareness cannot be what is given in perception. The cases I present demonstrate, in the first instance, that perceptual awareness is not the causal basis in perception. I then argue that there is reason for concluding that awareness is not the justificatory basis either. Thus, another strand in the Cartesian doctrine of perception will be seen to be inadequate.

First, I describe three slightly different cases of what one might call 'optical completions'. Perhaps the best known of

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69 See pages 157-60 above.
these is the "filling in" of the optical "blind spot". Because of a feature of the anatomy of the eye, there is an area of the retina - called 'the blind spot' - onto which the visual field is projected and which has no light receptors. However, there is no corresponding "hole" or "gap" in the perceptual awareness that one has. By experiment, psychologists have determined that in one's awareness this blind spot is filled in in a fairly intelligent way so that the area of "blindness" is consistent with the features, or lack of features, that surround the area. Only these features that fall totally within the area of "blindness" are not represented in one's perceptual awareness.70

A similar phenomenon can occur associated with migraine illusions. These illusions, which occur in only some cases of migraine attack, usually involve the awareness of illusory lines of bars at angles to one another forming an arc around a horseshoe shaped "blind area". As in the case of the optical blind spot, these blind areas are sometimes filled in in ways partially consonant with the surroundings. There is an account in the literature of one migraine victim suffering such an illusion in the course of a conversation with a friend. When the migraine victim happened to turn so that the friend's head entered the blind area, the "friend's shoulders and necktie were still visible, but the vertical stripes in the wallpaper behind him now

70 For further details, see, e.g.: Keith Oatley, Brain Mechanisms and Mind, The World of Science Library (London: Thames and Hudson, 1972), pp.74-75; and, Gibson, The Senses, p.263.
Figure 1: Demonstration of the existence of the "blind spot" - close the left eye, look directly at the round spot with the right eye holding the page about 12-15 inches from the eye, and the cross, whose image falls upon the "blind spot", will not occur in one's perceptual awareness.

... seemed to extend right down to the necktie.\textsuperscript{71}

Hebb, in \textit{The Organization of Behavior}, reports other cases of "completions":

When one occipital pole of the brain has been destroyed by injury .... the patient becomes blind in half the visual field. If a simple symmetrical object such as a white square or billiard ball is fixated in the midline, the patient nevertheless reports that he sees all of it. That he does not, but instead completes in his perception what he really only sees half of, is shown by another fact. If half the object is presented instead, in such a way that the missing half would have fallen in the blind side, the patient still "sees" the whole object.\textsuperscript{72}

All of these completion phenomena suggest that, rather


than being the basis in perception, the perceptual awareness is constructed. The construction would, presumably, causally depend upon some basis in perception, some principles which govern the way perceptual awareness is filled in, and what one might call 'background knowledge' - parts of the perceiver's intellectual baggage such as, for example, that a semi-circular line is a part of a full closed circle. I intend to suggest neither that the perceiver is conscious of these elements, nor that he is conscious of any inference from them to the perceptual awareness. I claim merely that, to account for this phenomenon, one needs to postulate these sorts of elements as causes resulting in the perceptual awareness as effect.\textsuperscript{73}

Another example where the perceiver's background knowledge affects his perceptual awareness, is provided by an experiment on anomaly. In this experiment, subjects had exposed to them, for short periods, playing cards in which the colours of the suits were switched - clubs and spades being red, diamonds and hearts black. Of the various ways in which subjects misperceived the cards, the one that is of interest here is that some subjects "compromised" on the colour, saying that they seemed to see grey hearts and purple spades.\textsuperscript{74} In this case it seems clear that one has to say that the perceiver's knowledge of the colours on conventional packs of cards plays some causal role in

\textsuperscript{73} See pages 180-83 below for more full discussions of this issue.

determining his perceptual awareness - again, indicating that the awareness is not the causal basis in perception.

Another whole class of cases is provided by examples originally given much currency in psychology by the Gestalt school. Examples are the Necker cube (see Figure 2, next page), alternating figure/ground drawings, and "ambiguous" drawings such as Boring's picture "My Wife and My Mother-in-law" (see Figure 3, next page). These cases are somewhat less convincing, because they tempt one to some extent to say that switches in what one "sees" are switches in how one interprets what is given in awareness. However, although this might seem plausible in cases like the Necker cube, it is less plausible in the case of some of the alternating figure/ground drawings, and distinctly implausible in cases such as Boring's picture. In cases such as the latter, there seems little alternative but to say that one's perceptual awareness changes as one switches from seeing, for example, the wife (or the picture of the wife) to seeing the mother-in-law (or the picture of the mother-in-law). If this is how one should describe such cases (and I think that it is) then, although they do not show the causal role of background knowledge in the production of the perceptual awareness, they do show the

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Figure 2: The Necker cube.

Figure 3: E.G. Boring's picture, "My Wife and My Mother-in-law".
influence of another feature - what psychologists call 'set'. For example, having been exposed to a picture largely similar to Boring's that is unambiguously of the wife, it is highly likely that the perceiver will first see the ambiguous picture as a picture of the wife. Similarly, if the perceiver had previously been exposed to a picture which is unambiguously of the mother-in-law. Again, then, these examples suggest that the set, together with the causal basis in perception, determine the perceptual awareness the perceiver has - that is, such examples indicate that the perceptual awareness is not the causal basis in perception.

Finally, I mention two other examples that are slightly different from those already cited. Both of these examples show how one feature in what is perceived affects the awareness of some other feature. First, the phenomenon that psychologists call 'constancy': types of which are size, shape, colour and brightness constancy. Consider, for example, shape constancy, which is involved in the following case. If one arranges two objects of different shape (for example, a circle and an ellipse) so that their projected shapes (that is, the shapes a pin-hole camera would record) are identical from some point (for example, the circle is inclined to, while the ellipse is normal to, a line from the point to the centre of the shape), the object that really is circular will also appear (in the phenomenal sense)

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more nearly circular (that is, less elliptical) to an observer at this point. The shape is "constant" in the sense that the apparent shape is nearer the real shape than the projected shape. Playing an important causal role in such constancy are what psychologists call 'cues'. To grossly oversimplify the matter, assume that there is only one cue - say the "texture" of a surface - that is relevant to shape constancy. If this were the case, then, for the vast majority of perceivers, a circular disk without any detectable surface texture placed at an angle (other than perpendicular) to the perceiver's line of sight will cause the awareness of a shape far more elliptical (that is, less nearly circular) than a similar disk having a detectable surface texture. Clearly, one has here a case where one perceived feature (surface texture) differentially affects the awareness of another feature (shape). Again, this seems to indicate that the awareness of shape is not the causal basis in the perception of the disk's shape.

A similar example is provided by some effects discovered in the course of experiments on stabilized retinal images. When the image on the retina is stabilized, the perceiver experiences a gradual fading or loss of awareness (which is sometimes followed by recovery and subsequent further loss). The interesting thing about this fading and loss of awareness is that it does

78 See, e.g.: Dember, Psychology, pp.186-87.
not occur in a general way (that is, like a cinematographic "fade-out") or in an arbitrary way. Rather, it occurs in an organized manner, involving loss in such a way that the unit (or units) remaining is (are) meaningful. For example, if the image that is stabilized on the retina is of the word 'BEER' it is far more likely to suffer loss so that the subject is aware of words like 'PEER', 'PEEP', 'BEE' and 'BE' than to suffer loss to give "meaningless" groups of letters such as 'EER', or parts of letters. This is true not just of images formed by words, but also of images formed by line drawings, etc.\footnote{See: Roy M. Pritchard, "Stabilized Images on the Retina", Scientific American 204 #6 (June 1961): 72-78; and C.R. Evans and D.J. Piggins, "A Comparison of the Behaviour of Geometrical Shapes when Viewed under Conditions of Steady Fixation, and with Apparatus for Producing a Stabilised Retinal Image", British Journal of Physiological Optics 20 (1963): 1-13.} It is highly unlikely that the fading (which is believed to be the result of simple physiological processes in the light receptors) results in a perceptual basis that is always a "meaningful" unit. The only satisfactory explanation would seem to be that the causal perceptual basis is only represented selectively in awareness. The "tidying up" that occurs between the causal basis and the perceptual awareness is, presumably, causally influenced by the perceiver's background knowledge (of, for example, what constitutes a letter and what a word). Again, it seems impossible to construe this case as one where the perceptual awareness is the causal basis.
All these phenomena make the same point: that in perception the causal basis is not what is present in awareness. They, and other similar phenomena,\textsuperscript{80} suggest that awareness is, causally speaking, a "construct" which depends upon elements which are more basic. The conclusion is not totally foreign to psychologists - Ornstein, for example, says:

Contemporary research has indicated that ordinary consciousness is an exquisitely evolved personal construction: sensory systems select a small amount of input data, the brain modifies and gates this sensory input, higher-level cortical selectivity filters on the basis of needs and preconceptions or "set".\textsuperscript{81}

Thus, there must be something that is the causal basis (or "given") in perception, on which foundation awareness is constructed.

I have briefly outlined so many different cases partly to indicate the variety of phenomena that seem to demand this conclusion. Partly, however, I have done this in order to include both the dramatic cases (for example, completions in migraine attacks and awareness-loss during retinal-image stabilization) which are not exactly commonplace, as well as the cases that,

\textsuperscript{80} See, Erdelyi, "A New Look", p.10.

though perhaps less dramatic, nevertheless indicate how ever-present the phenomenon is (for example, completion of the optical blind spot, and constancies). Also, the range of examples indicate that both selection (for example, awareness-loss during retinal-image stabilization) and augmentation (for example, completions) occur between the causal basis and awareness.

Before leaving these examples I should emphasise what I am claiming of them. I claim that the evidence shows that the awareness that occurs in perception is causally dependent on several factors - perhaps the most interesting of these being the perceiver's set and background knowledge. This shows that perceptual awareness is a construct of some sort out of more basic elements. Amongst these more basic elements is the causal basis in perception. My interest here is not to determine what that basis is, but merely to point out that it is not awareness.

In particular, I should make explicit some of the things that I am not claiming. I am not claiming that one necessarily has any awareness of what is causally basic in perception. That something provides the causal basis for awareness does not necessarily mean that one (even the perceiver) knows what that thing is. Furthermore, I am not claiming that there is any conscious inference, or any intellectual process which one realises to be occurring, to the awareness from its causal basis. I would,

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82 See, e.g.: Harman, "How", p.353; and Quinton, "Problem", p.47.
of course, expect the causal relations to involve processes of the central nervous system, but whether or not that makes them *intellectual* processes, they are not processes of which it is necessary that one is, or can be, aware.

Having described the cases, I turn now to the question of the relation between the causal and the justificatory given. In the previous section of this chapter (pages 144-154 above), I argued that the causal basis and the basis in justification are conceptually distinct, and thus, the conclusion that awareness is not the *causal* basis is not sufficient to establish the falsity of the Cartesian doctrine - that awareness is not the *justificatory* basis for perceptual knowledge and beliefs. However, in attempting to establish the conceptual distinctness of the causal and justificatory basis, it became obvious that *most usually* the causal basis for some belief is also, in fact, the justificatory basis for the same belief. This being so, these cases which clearly demonstrate that awareness is not causally basic strongly suggest that, in fact, awareness is not the justificatory basis either.

One of the problems encountered in attempting to establish any more firmly the conclusion that in any particular case the causal basis is also the justificatory basis is that although it is clear that the stimulus and things vaguely referred to as 'set' and 'background knowledge' are causal determinants of perceptual awareness, the details of the intervening links are not known. Similarly, as I shall argue later, I believe
that the elements that are justificatorily more basic are very often not obvious. Given these limitations, it is difficult to argue anything stronger than that it is highly reasonable to construe the causal basis as identical to the justificatory basis in these cases.

I begin by considering an example that I have not previously mentioned: the kinetic occlusion of a disk. The case is taken from an experiment by Michotte. In the experiment, projection onto a screen is arranged so that a circular area of darkness travels across the screen. At some point in its journey across the screen, the shape of the area of darkness begins to change in the same way that the shape seen would change if a black disk were disappearing behind the straight horizontal edge of a second screen between the observer and disk. This change in shape ends in the total loss of the area of darkness. (See Figure 4).

Figure 4.

See: Gibson, The Senses, pp.204-5.
Subjects taking part in the experiment claim that, in this situ­
ation, their awareness is (as) of a circular disk which does not
alter its shape as it disappears behind the horizontal boundary.
(Through most of my discussion I shall assume that the awareness
is as these subjects claim. The claim that the awareness is not
as it is described by the subjects is a major objection to the
argument to be developed in the next few pages. Because a simi­
lar objection is possible in all such cases, I delay a full con­
sideration of it until after this example is dealt with. See
pages 187-96 below).

Now, of course, such a display can be produced either by
moving a dark disk over the surface of a screen until it dis­
appears behind a second screen, or by causing the movement of a
dark area whose shape can be changed and whose size can be re­
duced to zero (for example, by shadow projection) across one
screen. If the awareness of the occlusion of the disk is pro­
duced by the latter method, the awareness is illusory and seems
to call for some sort of explanation.

A very natural, and extremely plausible, causal account
of this illusion is as follows. One has a belief about (or
knowledge of) the changing position, shape and size of a black
patch on a white ground. Moreover, one has a background belief
(or pieces of background knowledge) to the effect of something
such as that this type of changing position, shape and size of
a black patch on a white ground is usually caused by a moving
disk being occluded by a screen. These two beliefs cause the
third belief that a circular disk is being occluded by an intervening screen. Not only do they cause this belief, they also justify it. (The belief is, of course, justified regardless of whether it is true or false - that is, regardless of whether the display is produced in one way or the other. In the case where the belief is not produced by the actual occlusion of a disk, the belief is justified but yet false - which, as was argued above, is perfectly possible).

Three comments about this account. First, concerning the status of the beliefs involved. The belief about the changing position, shape and size of a black patch is relatively unproblematic. This is a belief which one is probably not aware of at the time one is having the perceptual awareness, but it certainly is a belief that one can become aware of. (It is the sort of belief that one might only become aware of when it is first pointed out to one, if one had been deluded by the display, that one's perceptual awareness was illusory. Having become aware of it, it seems to be the sort of belief one would say one had had during the perceptual awareness, even if one had not been aware of it at the time). The belief that this sort of changing patch is usually caused by the occlusion of a disk, is slightly different. It does not seem to be the sort of belief that one discovers in the same way one discovers the previously mentioned belief. It seems, rather, to be the sort of belief that one accepts, on the basis of its reasonableness, as having been part

84 See, e.g.: Armstrong, Belief, p.21.
of one's background armoury of beliefs. The belief that a circular disk is being occluded is, of course, closely tied to the perceptual awareness, and will be discussed more fully in the following paragraph. (Finally, what I have loosely called 'beliefs' should be taken to include beliefs and what Armstrong calls 'inclinations-to-believe'. This qualification is particularly applicable to the belief that a circular disk is being occluded. For instance, if one is not deluded by the display then one will not have this belief, but one will be inclined to believe that a circular disk is being occluded - that is, one would believe that a circular disk is being occluded were it not for some other belief which one holds. The notion of inclinations to believe is examined, and defended against putative problems, in an appendix to this work. See pages 281-87 below).

Second, as will, perhaps, have been noticed, the explanatory account of the illusion that I have just offered (pages 178-80 above) does not mention perceptual awareness. Previous to considering the causal and justificatory basis in the case at hand, one might (and someone accepting the Cartesian doctrine would) have said that the belief that-the-disk-is-being-occluded is dependent causally and for its justification on the perceptual awareness. However, having sought a reasonable account of the genesis of the perceptual awareness in this case, one arrives at an account of the belief (or inclination to have a belief) that a disk is being occluded which completely fails to mention perceptual awareness. It certainly could be included
in the account, but the account undermines the importance of its role. The essence of the account was that the belief about there being a changing black patch, together with the background belief that such changing patches are generally caused by moving objects being occluded, both caused and justified the third belief that a moving disk was being occluded. There are at least three ways in which perceptual awareness could be incorporated into this account: i) the perceptual awareness and the belief that the disk is being occluded could be taken to be distinct items, though both caused by the first two beliefs; ii) the first two beliefs could be taken to cause the third, which in turn causes the perceptual awareness; or, iii) the first two beliefs could be taken to cause the perceptual awareness which in turn causes the belief that the disk is being occluded. (Compare these with the three types of perceptual theory that were discussed on pages 160-62 above).

If one forgot the context in which the account occurs one might think that there is a fourth way in which perceptual awareness could be incorporated into the account: iv) the belief about the changing black patch could be taken to be caused by the perceptual awareness, and this belief, together with the background belief, cause the belief that the disk is being occluded. The Cartesian - who maintains that awareness is the justificatory base in perception - could be expected to favour iv over the alternatives i through iii in that, as iv sees the awareness as causally basic, it conforms most naturally to his
philosophical claim. However, iv is unavailable - and for at least two reasons. First, it adds up to an incredible account: it amounts to saying that awareness of a disk being occluded causes the belief about a changing black patch which only together with a background belief about the probable causes of changing black patches causes the belief that a disk is being occluded. Given that there is little or no direct evidence for ascribing such a convoluted causal chain, the account seems totally unacceptable. But, over and above this, the account is meant to be a causal account of the genesis of the perceptual awareness. Because the perceptual awareness is the causally most basic item in iv, the account fails to be an account of the causal genesis of the perceptual awareness. Thus, the account that one would expect to appeal most to the Cartesian is just not possible - iv is a non-starter, not just a lame runner.

Of the real possibilities (that is, i through iii) one might expect the Cartesian to feel least troubled by iii. However, I can see little reason for insisting on it - ii is no less satisfactory than iii, and i seems better than either ii or iii. There is one less causal link involved in i, and lacking other bases for choosing between them, economy of explanation would suggest that i is preferable.

However, iii offers no more safe refuge for the Cartesian

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85 The assumption concerning the correct description of awareness had in this situation is detailed earlier, see page 178 above. Possible alternative descriptions of awareness are discussed later, see pages 187-96, especially page
than do either i or ii. If the account of this phenomenon is satisfactory, it shows that the causal basis for both the belief and the perceptual awareness are other beliefs. Once this is established, it is obvious that these further beliefs furnish not only the causal basis but also the basis in justification. Thus, whether or not one construes the perceptual awareness as a causal intermediary between the first two beliefs and the final belief (that is, whether one accepts iii, or whether one accepts i or ii) is irrelevant in arguing that the perceptual awareness is not the justificatory basis. Even if one construes the final belief as based for its justification on awareness (that is, if one accepts iii), the first two beliefs provide the justification for the awareness, and so it is these first two beliefs that are the (more ultimate or more fundamental) justificatory basis for the final belief. This means that the causal account of the occlusion of the disk shows that the Cartesian doctrine is incorrect: however one fits perceptual awareness into the causal story, there are always beliefs that are causally more basic than it, and thus, beliefs which are justificatorily more basic than the perceptual awareness. Thus, perceptual awareness is not the most basic justificatory element in the account - that is, the Cartesian doctrine is false.

I have argued that in this case - of the occlusion of a disk - the justificatory basis in perception is something other than the perceptual awareness. However, the result holds for all the types of phenomena reviewed above, in which the percep-
tual awareness is causally affected by background beliefs, set, etc. Although I shall not discuss further examples in detail, other cases will be mentioned in the subsequent consideration of a general objection to the argument I have presented. In all such cases, the argument is, in outline, the same. The cases all call for a causal account of the perceptual awareness. The most obvious and most plausible causal accounts of the awareness seem to involve beliefs as more basic causal elements: for example, beliefs about what constitutes a word in some of the stabilized image cases; beliefs about what sorts of pictures one is being shown in the cases of ambiguous pictures; beliefs about the real properties of objects in the case of the constancies, etc. Because there are beliefs that are causally more basic than perceptual awareness, these temporally prior beliefs obviously also are what justify the awareness (if, in fact, awareness can be a relata of justification). Thus, rather than perceptual awareness it is beliefs that are the justificatory basis in perception, contrary to what the Cartesian thesis states.

However, there are some differences in the analyses of some of the other examples. While some will be able to be analysed in terms of beliefs that one is able to bring to consciousness, the analysis of others may have to rest upon beliefs which, as a matter of fact, one never seems to be able to have alternative access to no matter how one tries. This creates no conceptual problems because there is nothing incoherent in the idea of a belief which one is unable to bring to consciousness.
(A Freudian analyst would construe his inability to make his patient conscious of his "hidden beliefs" as a failure of analysis, and not as proof of the non-existence of such beliefs. While it may be foolhardy to place that much trust in Freudian theories, this is not a logically incoherent position. Thus, the notion of belief is not such as to rule out the possibility of beliefs which the believer is unable to bring to consciousness).  

Having dealt with a feature concerning beliefs which might have been thought to be problematic for the account, I mention a feature that is a positive advantage of the account over, for example, the Cartesian. This is that the account rings true to one's experience in considering the justification of beliefs, in a way that the Cartesian account does not. When one's expectations are shattered, one very often casts about for an explanation of why one ever had these expectations. For instance, consider the case of Boring's ambiguous picture "My Wife and My Mother-in-law" (see pages 170-71 above). If one had previously seen a series of pictures of young women, and then sees Boring's picture as a picture of the wife, when it is later made obvious to one that the picture can be seen as a picture of the mother-in-law, one might wonder what justified one in believing that one saw a picture of the wife. Whatever the details of

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one's answer the Cartesian account would restrict one to reference to perceptual awareness. Thus, on the Cartesian account, the only difficulties one should encounter are those of remembering the nature of one's awareness, or selecting the relevant elements of this awareness. This would seem to make answering the question about justification an easy matter. However, one's experience is that it just is not like this. Determining what it is that justified one in the beliefs one holds is very often difficult - it often takes great pains to establish the answer. This is more consistent with what my account claims is involved - the bringing to consciousness of beliefs that one holds, although one might not have been aware of them initially, that do justify the belief in question. In the case mentioned above, these are perhaps beliefs that it is not terribly difficult to uncover - they might, for instance, be beliefs about the shapes of lines making up the picture and the belief that one was being shown a series of pictures of young women. However, some effort is required to unearth them and one can imagine how there could be cases that demanded far more effort. Thus, in this way, my account of the justificatory basis of perceptual beliefs rings more true to one's experience than does the Cartesian doctrine.

I turn now to consider a general objection that could be made to the sort of account developed above. The objection - which was mentioned earlier (see page 179 above) but left for consideration until now - calls into question whether the perceptual awareness had in such cases is correctly described. For
example, in the main case discussed above, the objection would hold that the awareness was not of a black disk being occluded, but rather, of a moving area of darkness that changes its size and shape. In general, the move is to say that in any case where the account offered takes the perceptual awareness to be caused by some belief, the account incorrectly describes the perceptual awareness - the correct description of the perceptual awareness being a description of the content of one of the beliefs which the account takes to be causally basic to awareness. The importance in this change in description of the awareness is that, if the awareness is as the objection suggests, it is no longer obvious that any belief plays a causal role in the genesis of the awareness; and, therefore, it is no longer obvious that awareness might not provide the justificatory basis. That is, in the case of the occlusion of a disk, for example, if the awareness is of a moving area of darkness changing in shape and size, no belief seems essential to the causal production of this awareness; and thus, as it is not obvious that there is a more basic belief, the awareness might be the most basic justificatory element in the situation.

There are several points which show that the objection cannot be sustained. First, in some of the cases which show the awareness not to be the causal basis, there is no alternative description of the awareness available. This is most strikingly so for the completion phenomena and the stabilized retinal image examples. There seems no alternative, in the case of the stabi-
lized retinal image experiments, to saying that the awareness went from awareness (as) of, for example, 'BEER' to 'BEEP' to 'BEE' to 'BE' and so on. When one performs the experiment to demonstrate the existence of the retinal blind spot, is there any alternative but to say that one's awareness is (as) of uniform whiteness where one knows there should be awareness of a black cross? I think not. These few (but ever present examples require) a description of awareness that demands a causal explanation in terms of beliefs (or inclinations to believe) that are justificatorily more basic than the perceptual awareness. Thus, even if one is reduced to these few examples, they nonetheless show the falsity of the Cartesian doctrine.

Second, although an alternative description of the awareness is possible in some of the other cases, in many of them the alternative description simply does violence to the facts of the matter. The objection is, perhaps, plausible in cases like that of the spontaneously reversing Necker cube, and simple alternating figure/ground drawings. In these cases, it does not seem to do too much violence to the language or the facts to say that, for example, in the case of the Necker cube, what one is aware of at all times is a set of connected straight lines, rather than that one's awareness changes back and forth between being of a cube seen from above and a cube seen from below. However, in the case of more intricate and complicated drawings, the objections is not at all plausible. The powerful thing about Boring's "My Wife and My Mother-in-law" picture is that while
viewing it one's perceptual awareness does not stay constant but switches from being of a young woman to of an old hag, and so on. Certainly, something changes when the switch occurs, and as it is neither beliefs (throughout, I believe I am seeing an ambiguous picture) nor inclinations to believe (throughout, I have the inclinations to believe both that it is a picture of a young woman and that it is a picture of an old hag — that is, throughout, for each of these beliefs I would have it if I did not know that the picture is "ambiguous"), the only thing left that could be changing would seem to be the perceptual awareness. Exactly similar comments apply in the case of the phi phenomenon (two alternately flashing lights that give awareness (as) of one moving light). One's awareness simply is of one light in motion, and not of two sequentially flashing lights, independently of whatever one might know or believe to be the physical cause of this awareness. Likewise in the case of the occlusion of a disk. Although not as common outside the psychologist's laboratory as the phi phenomenon, once one has experienced it, there is as little doubt in either case as to how they should be described. One's awareness simply is of the occlusion of a disk and not of the movement of a dark patch of changing shape and size.

Third, quite apart from a certain description being the only one possible, or the only one reasonable, it is, perhaps, worth noting that Cartesian philosophers themselves accept

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descriptions of awareness which provide a basis for rejection of the Cartesian doctrine. An example is Price, who is a paradigm Cartesian. In one particular case, Price endorses a view which leads to this argument against the Cartesian doctrine. He makes it obvious that he takes "bulginess" and visual depth to be properties of perceptual awareness, when he says of perceiving a tomato:

One thing however I cannot doubt: that there exists a red patch of a round and somewhat bulgy shape standing out from a background of other colour-patches, and having a certain visual depth, and that this whole field of colour is directly present to my consciousness.  

Now, if bulginess and visual depth are properties of one's perceptual awareness when one looks at a tomato, they are, presumably, equally properties of one's perceptual awareness when one looks at a picture of a tomato that is well enough rendered to be capable of deluding one into thinking that there is a real tomato. But, in the case where the bulginess and the visual depth are illusory, some explanation seems called for. Happily, an account parallel to that given above for the occlusion of a disk is easily available. One's belief that there is bulginess and visual depth is clearly based causally upon such factors as the difference in shading across the surface of the red patch that one took to be a tomato. Now, it is easy to discover that one had (and has) beliefs about the shading differences on a red

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patch, and to realise that these beliefs justify the belief (which, in this case, is incorrect) about bulginess and visual depth. Here, then, one has a clear case where the belief about a property, which an adherent to the Cartesian doctrine insists is a property of perceptual awareness, is causally and justificatorily based upon some other belief - that is, a case where the justificatory basis is other than awareness. This argument is, of course, merely ad hominem against Price. There seems little point in supplementing it with other ad hominem arguments against other Cartesians: the Cartesian doctrine might be true even if every philosopher who espoused it said things that lead to its rejection. However, the point that is made is that to construct this sort of case against the Cartesian doctrine one does not need to insist upon a description of the perceptual awareness that is at all unusual or would be obviously unacceptable to someone who embraces Cartesianism.

So far, I have argued against the objection that in some cases the awareness is not able to be described as the objection requires, in other cases it is implausible to so describe it, and that Cartesians themselves give descriptions of awareness that conflict with how the objection would have it described. Finally, I turn to the only case I know of where, in a situation where more than one description is possible, empirical evidence was collected as to how the awareness is correctly described. The phenomenon is that of constancy, and the experiments I refer to were conducted by Thouless on size and shape constancy.89

The results are similar for each case - I discuss only shape constancy. Thouless reports that he was led to conduct the experiments because he was unconvinced by various psychologists' claims that shapes look the way they really are and not their projected shapes. Thus, from the start, Thouless' problem was to determine how a shape looked, appeared, etc., to someone - that is, to determine what shape it is one has awareness (as) of, when one sees a shape inclined to one's line of sight. In Thouless' experiment, it is clear that subjects are not answering the (for these purposes) irrelevant question "What do you believe to be the real shape?", because it was clear to all the subjects what the real shapes of the surfaces were. Thus, in answering how the things looked to them, there is reason to believe that the subjects were indicating phenomenal shape, shape present in their awareness, apparent shape, shape of the sense datum had - or, however else one might describe it. Thouless' finding was that the phenomenal shape is intermediate between the real and projected shapes. For example, the average results for one subject viewing a surface that is really circular, at different angles of inclination, is as follows: where the projected shapes were ellipses of ratio (of short to long axis) of 0.56, 0.36 and 0.255, the phenomenal shapes were, respectively, ellipses of ratio 0.78, 0.58 and 0.47, which in all cases is between the projected shape and the real shape (a circle, which, of course, is an ellipse of ratio of short to long axis of 1.00).

Given that the whole purpose was to determine phenomenal
shapes, one feels inclined to place some trust in the results. However, Richter has argued that such trust is misplaced - that Thouless' conclusions are open to question because they involve a subject making a judgment about the phenomenal shape, and that the deviation of phenomenal shape from projected shape could be due to poor judgment. Richter is correct in claiming that such judgments are a possible source of error however one collects the information about phenomenal shape (Thouless had subjects both draw the phenomenal shape and select surfaces whose real shape matched phenomenal shape - with very similar results in each case). However, Thouless' results would seem to be resistant to this, and far more subtle criticisms. In a subsidiary experiment, that was undertaken to rule out the possibility that there was a simple tendency to draw ellipses as more circular than they in fact are, Thouless had his subjects copy ellipses that were presented normally (that is, normal to the line of sight). The results show that the subjects made remarkably good judgments (and had remarkably good drawing skill).

The results were: for ellipses of ratios 0.7, 0.46 and 0.25 subjects drew ellipses, respectively, of ratios 0.69, 0.45 and 0.245 - indeed, their errors are small, and in the direction of drawing figures that are more elliptical (that is, further removed from circles), rather than there being large errors in the direction of decreased ellipticality as Richter's criticism would demand. One could, of course, postulate an error in judgment which is largely cancelled out by an error in drawing.

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(or whatever reporting method is chosen), but so free a willingness to ascribe errors seems ad hoc, makes it surprising that the experimental results are so consistent, and removes the properties of awareness totally from the realm of empirical investigation, even if it does not cast doubt upon the very meaningfulness of talking about the properties of awareness. The only reasonable course seems to be to accept Thouless' conclusion that one's awareness, when viewing shapes inclined to one's line of sight, is (as) of a shape intermediate between the projected shape and the real shape of the object.

Thus, situations that display constancy (or what Thouless calls 'phenomenal regression to the real object') are situations in which the shape one is aware of is illusory. Therefore, an explanation parallel to that which I gave above for the phenomenon of the occlusion of a disk is applicable. The case can be accounted for by saying that the inclination to believe that-the-surface-is-of-an-intermediary-shape is causally and justificatorily based on beliefs about both the projected shape and the relations between projected shape, real shape and the angle of inclination of the surface to the observer. There is little doubt that the inclination to believe in question could be caused, and would be justified, by such beliefs, and there is no doubt that one does hold general beliefs of the kind relevant here. Although beliefs about projected shapes may not be easily available to the majority of people, at least graphic artists learn to uncover accurate beliefs about the projected shapes of
surfaces. The objection that I am considering here would have one say that in such cases the perceptual awareness is of the projected shape and not of the intermediary shape. However, the evidence is that this misdescribes the awareness. Thus, in the one case where there is convincing evidence as to how the awareness should be described, the awareness seems to call for explanation, and the causal explanation — by resting on more basic causal items that are also items more basic in justification — shows that the Cartesian doctrine is incorrect.

The objection I have considered in these last few pages (pages 187-96) depends upon the claim that the awareness is incorrectly described. I have argued: i) that in some cases no other description of it is possible; ii) that in other cases no other description of it is reasonable; iii) that some Cartesians describe it in ways that allow the argument against the Cartesian doctrine to be stated (contrary to what this Cartesian objection would suggest); and finally, iv) that in one case where there has been some reasonably careful empirical investigation into how the awareness should be described, the correct description is not what the objection suggests. I take the objection to be totally undermined. Thus, the conclusion that the Cartesian doctrine is incorrect — that awareness is not the basis in justification — stands.

Finally, I mention how little the facts I have discussed in this section of the chapter are referred to by philosophers. The only thing approaching a tradition of mentioning them occurs
in the philosophy of science. Hanson, Kuhn and Feyerabend, for example, all refer to facts such as these in arguing for the dependence of observation on theory. Pitcher refers to such facts in his work on perception, and in one place it is to argue a thesis closely allied to the theory-dependence of observation. Finally, Broad and Hirst have both referred to such facts. However, none of these philosophers have used these facts to argue for the conclusion that I have argued for. Notable in this regard is Hirst. He begins by chastising philosophers, saying:

how surprising it is that so little of the psychologists' controversy about nativism and empiricism or their experiments about the effects of learning, set, cues, etc., on perception filtered through to the philosopher. Broad, it is true, does discuss the staircase figure and other alternating figures briefly and allows that past experience does not consider them at all, and neither discusses object constancy, in which the content of perception varies according to attitudes or even beliefs. The point surely is that since sense data are affected by subjective factors of a psychological or for that matter phys-

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92 Pitcher, Theory pp.171-86. See also pp.133-50.

iological nature they cannot be objective data of knowledge on which to base the epistemolog-
ical structure.⁹⁴

But this is not the point to be garnered from these facts. The lack of objectivity of perceptual awareness does not invalidate it as being the justificatory base for perceptual knowledge and beliefs. What does invalidate it as being the justificatory basis is that there are items more basic causally that also provide a more fundamental justificatory base.

D. Conclusion

In this chapter I have presented attacks on the Cartesian doctrine of perception from two different positions. The doctrine states that perceptual awareness provides the basis for perceptual knowledge and beliefs. In the first section of this chapter I argued that because some perception occurs without associated awareness (proprioception), and because subliminal perception is, at very least, a logical possibility, not all perceptual beliefs and knowledge are based on awareness. I considered at length one modification of the Cartesian doctrine and argued that both it and any other modification that retained the essence of the doctrine could not be retained as an element of any adequate philosophical theory of perception.

In the second section I examined the relations of justi-

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⁹⁴ Hirst, "Science", p.4.
fication and causation and explored the question of to what ex-
tent the relata of one of these relations are also the relata
of the other. I then briefly outlined psychological theories
in which perceptual awareness is not the causal basis for per-
ceptual knowledge and belief, and argued that the logical coher-
ence of such theories strongly suggests that the notion of the
justificatory basis for perceptual knowledge and belief is not
conceptually tied to that of perceptual awareness.

In the third section I have outlined facts which show
that awareness is not the causal given in perception. On this
basis I went on and argued that, in these cases, awareness can-
ot be construed as the justificatory given in perception. Thus,
even in cases where perceptual awareness occurs, it does not al-
ways provide the basis in justification for one's perceptual
beliefs and knowledge. Clearly, the arguments of the second and
third sections are closely connected: the phenomena described in
section C suggest that an adequate scientific theory will not
take perceptual awareness as the causal basis of perceptual
knowledge and belief.

I have referred throughout this chapter to phenomena that
are somewhat exotic - phenomena which one might feel are so
"fringe" that they should not unduly trouble the philosopher
even if they do appear to be counter-instances to his theory.
I reject such a conclusion for two reasons. First, I fail to
see how some phenomenon being exotic or unusual in any way re-
duces its importance as a counter-example to a general thesis.
Second, my arguments have not rested solely on such unusual occurrences. Subliminal perception might be thought to be an unusual occurrence (though I happen to believe that that is probably wrong), but proprioception is most mundane, usual and ever-present, and the arguments in the section on the occurrence of perception without awareness could all be rested on it. It might, rightly, be thought that one rarely experiences, for example, stabilized retinal-images, but size and shape constancy are everyday features of one's perception and this latter phenomenon could be taken as the sole basis for the arguments to the effect that awareness does not justify perceptual beliefs. Thus, the case that I build against the Cartesian doctrine depends in no essential way on the exotic, the unfamiliar or the unusual.

In the face of these arguments it seems impossible to maintain that perception depends upon awareness. Thus, there is no alternative but to conclude that a satisfactory account of perception can only be developed if the Cartesian doctrine of perception is abandoned.
V The Justification of Perceptual Beliefs

A. Introduction: The Doxastic Thesis

In the immediately preceding chapter I have argued that the Cartesian doctrine - the claim that awareness is the basis in justification for perceptual knowledge and beliefs - is false. This, together with my earlier sketch of the traditional theories of perception which demonstrated that they all subscribe to the Cartesian doctrine, leads to the conclusion that all the traditional theories are unacceptable. The conclusion is hardly novel, but in isolating an error common to these theories, some advance has been made. In having come to an end of the arguments directed primarily against the Cartesian doctrine, what one might call the 'negative' part of this work is concluded.

However, as far as philosophical reflection on perception is concerned, there is still much to be done. Either some satisfactory account (or theory) of perception has to be constructed or some extant theory that does not subscribe to the Cartesian doctrine, and appears to be reasonably satisfactory in other respects, has to be described (at least in outline). This is what one might call the 'positive' task. (The division between positive and negative parts of this work is, of course, somewhat artificial. Showing that a theory which repudiated the Cartesian doctrine is acceptable facilitates abandoning the doctrine, just as successful arguments against the Cartesian doctrine encourage acceptance of a theory that avoids it). The full compass
of this positive task is enormous, and even if I had a complete philosophical account (or theory) of perception to offer, it would be beyond the limits of this work. However, rather than attempting to build a satisfactory theory, I confine myself to a more general matter. In particular, in the remaining pages I present arguments for a thesis concerning perception that is as general, and as basic, in its relation to a range of possible different particular theories as is the Cartesian doctrine in its relation to naive realism, representative realism and phenomenalism.

Once the inadequacy of the Cartesian doctrine has been shown, the question that becomes urgent in philosophical deliberation on perception is: "What, if not awareness, is the justificatory basis in perception?". Several things indicate that beliefs are basic and important in perception. First, the most widely known (if not the only) philosophical theories of perception which avoid the Cartesian doctrine are theories in which beliefs play a fundamental role - the most notable being Armstrong's theory of perception.\(^1\) Second, beliefs are an essential element in the explanation of illusory awareness given earlier (see pages 178-84 above). Finally, it was argued earlier (see pages 132-38 above) that the relata of the justification relation are propositional attitudes - and beliefs are paradigm propositional attitudes.

\(^1\) See pages 260-75 below. See also: Pitcher, Theory, p.65; Rundle, Perception, pp.101-05 and Dennett, Content, p.74.
If, then, beliefs are so basic and important in perception, it might not be amiss to consider the suggestion that beliefs are the justificatory basis in perception. Because this suggestion is so major a focus of the rest of this work, it is convenient to have a name for it and I choose 'the doxastic thesis'. The doxastic thesis, then, states that, in perception, the basis in justification is beliefs. Or, to parallel an alternative way in which I sometimes formulated the Cartesian thesis, one might state the doxastic thesis as that beliefs are the basis in justification for perceptual knowledge and belief(s).

As I have remarked more than once earlier, the claims I make about beliefs should be understood as applying also to inclinations to believe. Thus, the doxastic thesis should be taken as maintaining that inclinations to believe (as well as beliefs) can justify perceptual beliefs. It might be thought that a mere inclination to believe could justify nothing. This is a reasonable view but there are considerations that undermine it. Whenever one is merely inclined to believe that q, there is some belief, p, such that one would believe q were it not for one's belief that p (with which it conflicts). Imagine, further, that the belief that-p justifies the belief that-p', and the

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2 The name is suggested by a comment by Close (see: "What", p. 161). Although unattractive, the name is reasonably accurate in any suggestion it might be taken to make as to the content of the thesis. I would prefer a label such as 'the epistemic thesis' - however, this name is commonly used for the view that perceiving conceptually involves believing.
inclination to believe that-\(q\) justifies the belief that-\(q'\) (that is, the belief that-\(q\) would justify the belief that-\(q'\)). Now, I argue later (see pages 230-37 below) that consistency is an additional condition imposed on one's total belief set. If \(p'\) and \(q'\) conflict, then clearly \(q'\) will be the belief to be rejected in making one's belief set consistent. As where \(p\) and \(q\) conflict, \(p'\) and \(q'\) will usually conflict, most of the beliefs justified by a mere inclination to believe, will thus be eliminated in making one's belief set consistent. In those few cases where \(p'\) and \(q'\) do not conflict, it seems reasonable to say that the inclination to believe that-\(q\) does justify the belief that \(q'\).

An example reinforces the conviction. Pressing my eyeball, I have the inclination to believe that there are two pens in front of me - that is, I would believe that there are two pens (\(q\)) if I did not believe that there is only one (\(p\)). The belief that there are two pens (\(q\)) would justify the belief that-there-are-two-yellow-objects-or-my-eyes-are-playing-me-tricks (\(q'\)). The belief that there is one pen (\(p\)) justifies the belief that there is one yellow object before me (\(p'\)). Here, \(q'\) and \(p'\) do not conflict - and it seems entirely appropriate to say that my inclination to believe \(q\) justifies my belief that \(q'\). Thus, I do not exclude inclinations to believe from the doxastic thesis because, in those cases where the beliefs justified by an inclination to believe are not ruled out in making one's belief set consistent, it seems correct to say that an inclination to believe justifies a belief.
The rest of this chapter is devoted to discussing the doxastic thesis. In the immediately following section the doxastic thesis and the Cartesian doctrine are considered in respect of the justification relation. In section C, a major objection to the doxastic thesis is considered. In the subsequent two sections, further factors that make the doxastic thesis seem more plausible are explored, though it is argued that these further factors are neither an alternative nor a supplementary source of justification for perceptual beliefs.

B. The Doxastic Thesis and the Relation of Justification

From the attention I pay to the Cartesian doctrine and the doxastic thesis it is clear that, in this work, I am mainly interested in questions about the justification of perceptual beliefs. The problem which I earlier (see pages 11-22 above) argued was a major (if not the) impetus for constructing philosophical theories of perception, makes it obvious that the justification of knowledge of the world is a central issue in the philosophy of perception. This is attested to by the fact (argued for on pages 35-70 above) that the traditional theories all subscribe to a thesis about justification - that is the Cartesian doctrine.

Although the discussion in most philosophical works on perception centres on issues to do with justification, this receives very little explicit mention. Correspondingly, there
are, in the literature, few abstract discussions of the relation I have called 'epistemological justification'. This is unfortunate in that there is little with which to compare and contrast my proposals on the relation.

Earlier I concluded that the relata of the justification relation are attitudes to propositions (see pages 132-35 above). This conclusion supports the doxastic thesis while undermining the Cartesian doctrine. The doxastic thesis states that in perception the relata of the justification relation are beliefs, which are propositional attitudes par excellence. Thus, because the doxastic thesis is in conformity with the general conclusion about the relation of justification, it is favoured over the Cartesian doctrine which conflicts with the same conclusion. However, further factors suggest an even greater degree of support than this for the doxastic thesis.

Propositional attitudes can be divided into those that entail believing (for example, knowing, remembering and believing itself) and those that do not (for example, claiming, suggesting, saying). One cannot know that skunks stink without also believing that skunks stink - whereas one can claim that pigs fly while either believing it or not.

Other propositional attitudes are not as easy to classify for they seem able to be construed either as entailing claims about beliefs or not. Consider Sam, who is looking for (seeking) his musket in the bedroom whilst, unbeknownst to him, it is the
only thing in the otherwise empty living room. Construed in one way, the answer is Yes: the thing Sam is looking for is identical to the only thing in the living room. But construed in another way, the answer is No: if Sam were looking for the only thing in the living room he would not be ransacking the bedroom. Construed in the first way 'looking for' is not belief entailing - to say Sam is looking for the only thing in the living room is not taken to entail that Sam believes that what he is looking for is the only thing in the living room. However, construed in the second way, it is belief entailing.

Sentences involving other propositional attitudes besides seeking are similarly capable of being construed in more than one way. Sam hates the person who prepares the fiery chili at the greasy spoon at which he eats lunch, while adoring the country singer at his neighbourhood bar, without knowing that the despised chili cook moonlights as the country singer. Does he adore the cook and hate the singer? Again, the answers depend upon whether or not one construes these propositional attitudes as belief entailing or not. But there is a non-belief entailing use of these propositional attitudes: to the cashier at the greasy spoon who knows nothing of the chili cooks' moonlighting, one would say that the chili cook is the object of Sam's adoration (though, perhaps, adding that Sam is not aware that his adored one cooks chili). Sentences involving the perceptual verbs probably are also capable of these two interpretations: has an uneducated savage, more familiar with the night

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sky than his educated counterpart ever seen Orion? If such examples do not establish that some propositional attitudes are able to be construed in more than one way, the original distinction between propositional attitudes with and without belief components is clear-cut. If these cases are able to be construed in either way, talk about a propositional attitude with a belief component should be understood to refer to a propositional attitude that can be construed as being belief entailing, and is being so construed.

The relata of the relation of justification are propositional attitudes, but it is perfectly conceivable that not all propositional attitudes can be the relata of this relation. For example, although desiring is a propositional attitude, it is not at all clear that a desire can justify (that is, provide justification) or even be justified (be provided with epistemological justification). In general, it would appear that only propositional attitudes with a belief component can justify (as opposed to be justified). My earlier discussion of seeing and being giddy (see pages 134-35 above) support the conclusion that only propositional attitudes with a belief component can justify. However, propositional attitudes without a belief component can be relata of the justification relation, for while they cannot justify they can be justified. For example, my saying that the East is Red certainly does not justify my believing that the

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4 Dretske, Seeing and Knowing, p.38, makes a similar point.
East is Red, whereas my believing this would justify (epistemically?) my saying it.

Given this more narrow necessary condition of the relation of justification - that only propositional attitudes with a belief component can justify - it is clear that beliefs play an even more central role in justification. As only propositional attitudes with a belief component can justify, one might reasonably think that it is the "belief component" (that is, the belief entailed by the propositional attitude) that is the relatum. Thus, the doxastic thesis, which maintains that the relata are beliefs, appears to be more highly supported by these further abstract considerations on the relation of justification. That is, the doxastic thesis is seen to be more highly supported in that it is in conformity with the more narrowly drawn condition on the relation of justification.

The conformity of the doxastic thesis with the above-discussed conditions on the relata of the justification relation, stands in marked contrast to the conflict of the Cartesian doctrine with the same conditions. Awareness (that is, having awareness of ...., or being aware of ....) simply seems not to be a propositional attitude. Thus, the Cartesian doctrine fails to satisfy even the weaker of the two necessary conditions.

In response, a Cartesian might attempt to maintain that having awareness is, contrary to what is commonly thought, a propositional attitude. This claim returns the discussion to territory that has already been fought over. The claim must
take awareness that .... (being aware that ....) or it must hold that all awareness of .... (having awareness of ...., being aware of ....) entails some awareness that .... But, awareness that .... is a sub-class of knowledge that .... (see pages 73-74 above) - and so that would mean that one would have to construe the Cartesian doctrine as entailing that perceptual beliefs are based on knowledge that ...., a claim that is more narrow than the doxastic thesis. Construed in this way, the Cartesian doctrine would be a special case of the doxastic thesis, and thus it seems only reasonable to understand 'awareness' as awareness of ...., where no awareness of .... entails any awareness that .... This means that 'awareness' as it occurs in the Cartesian doctrine does not refer to a propositional attitude.

There is another way of making essentially the same point. Above, I argued that only propositional attitudes with a belief component could provide justification. Now, the Cartesian doctrine can be presented with a dilemma: either one construes awareness as a propositional attitude with a belief component or one construes it otherwise. If one construes it otherwise, then the Cartesian doctrine is seen to be inadequate in that it fails to satisfy the necessary condition on the relata of the justification relation. On the other hand, if one construes it as a propositional attitude with a belief component, then the Cartesian doctrine is a stronger thesis than the doxastic thesis in that it entails the doxastic thesis (by claiming that beliefs
are a part of - or are entailed by - whatever it is that justifies) but not vice versa. If the Cartesian doctrine is simply a version of the doxastic thesis, it might be expected to face some of the problems that confront the more general thesis. For example, the Cartesian doctrine, construed in this way, would appear to face the infinite regress problem that is supposed to confront the doxastic thesis (see the following section, page 223, below); and one might consider the doxastic thesis to be preferable in that it has exposed these putative problems that, in the Cartesian doctrine, remain hidden. Of course, if this is how the Cartesian doctrine should be understood, it might appear preferable to the doxastic thesis in that it is more specific. I earlier suggested that because only propositional attitudes with a belief component can justify, it probably is the belief components of such propositional attitudes that effectively do the justifying. If this is so, then the Cartesian doctrine, construed as above, reduces to saying that it is the belief components of awareness (a sub-class of beliefs) that justify perceptual beliefs. Unfortunately, however, the Cartesian doctrine has purchased this advantage at the cost of having picked, as the relata of the justification relation, the wrong sub-class (as is clear from the conclusions of Chapter IV). Thus, in maintaining that awareness is a propositional attitude, the Cartesian doctrine becomes a special case of the doxastic thesis (that is, these two are no longer alternatives); and is, moreover, a special case that is shown to be false on other grounds that do not
undermine the more general doxastic thesis. This hardly seems to be a successful *defense* of the Cartesian doctrine.

The last two paragraphs have entertained, and shown to be unsuccessful, a defensive move that an adherent to the Cartesian doctrine might have tried in an attempt to save that doctrine: to wit, to suggest that awareness is a propositional attitude. However, it is very unlikely that any Cartesian would construe awareness in this way. As I pointed out earlier, some philosophers have explicitly denied that awareness is belief entailing (see pages 74-75 above). Moreover, the claim that seeing is not epistemic, made by some Cartesians, dictates that awareness should not be belief entailing. As it is not belief entailing, there seems little reason for thinking that it might be a propositional attitude. (The propositional attitudes without a belief component all seem to involve sentence production – claiming, suggesting, etc. – and awareness is not of this type). Thus, it is not surprising that, most commonly, awareness is not thought to be a propositional attitude. The Cartesian doctrine of perception, therefore, simply falls to the observation that the relata of the relation of justification are propositional attitudes.

An adherent to the Cartesian doctrine could attempt to avoid this attack by arguing that the conditions on the relata

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5 See also, pages 271-74 below.
of the relation of justification are incorrect. Although exam-
ing such an attempted defense involves further consideration
of conclusions already argued for (pages 132-35 above), because
the matter is of such crucial importance a review is in order.
I begin the review by quoting two passages that might be thought
to argue for the conclusion that justification can be provided
by things other than propositional attitudes with a belief com-
ponent.

First, Pollock, whose book *Knowledge and Justification*
contains one of the few explicit considerations of the justifica-
tion relation of which I know. In Chapter Two, he argues for
the conclusion that "what justifies a belief is always another
belief", but in a footnote cautions that this will later be
amended slightly.6 The amendment comes in Chapter Three. Hav-
ing just outlined a difficulty with a theory of perception that
he calls "descriptivism", he says:

The above difficulty suggests a modification of
descriptivism. Rather than say that it is my
thinking that I am appeared to redly which justifies
me in thinking that there is something red before
me, why not simply say that it is my being appeared
to redly that constitutes the prima facie reason?
This involves some rather minor revisions in the
definition of prima facie reason, but with those
changes this becomes a rather attractive position.
It is somewhat similar in flavor to naive realism
so I will call it direct realism.

Direct realism involves rejecting our earlier con-
clusion (in Chapter Two) that knowledge is always
based upon epistemically basic beliefs. The argument

which led to that conclusion assumed that justification always proceeds in terms of beliefs—what justifies one belief is always another belief. What does seem quite clear is that all that can be relevant in deciding whether a person is justified in holding a certain belief is his overall mental state, including his beliefs, but things other than his beliefs may be relevant too: for example, the way things appear to him. The argument by which we originally sought to establish that knowledge is based upon epistemically basic beliefs can still be employed to show that knowledge of physical objects is based somehow on the way things appear to us, but perhaps not by way of beliefs about how things appear to us.7

With these comments, Pollock ends his discussion of the justification relation. But it is difficult to see that anything has been established. The only argument in the passage is of this form: descriptivism is confronted with a difficulty which it would not face if things other than beliefs could justify: so, say that things other than beliefs can justify. Apart from this, all the passage contains are: statements about names for positions; statements recapping previous conclusions; and a statement of the new claim as to what sorts of things are able to justify (which is a virtual statement of the Cartesian doctrine). The argument roughly parallels the following: my game of chess is confronted with the problem that as bishops can only move diagonally you are not in checkmate, though you would be if bishops could move directly forward; so, say that bishops can move directly forward. That is not a way to win a game of chess; and similarly, Pollock's "argument" does nothing to establish

7 Ibid, pp.58-59.
the conclusion. One might wonder if I am not being unfair to Pollock: perhaps these are just suggestions that he does not take himself to have established. I think that this is not the case. Without any further discussion of them he says, in his conclusion to Chapter Three, "One of the most important results of this chapter is that it is misleading always to think of epistemic justification in terms of beliefs"; and at the beginning of Chapter Five, he says, "It was argued in Chapter Three that given any perceptual attribute p, 'S is appeared to ply' is a prima facie reason for S to believe that there is something p before him" (italics added).\textsuperscript{8} One can only conclude that Pollock has merely stated, without providing any substantial arguments for, a conclusion that he had earlier "simply rejected" promising that it would be "evaluated more carefully" later.\textsuperscript{9}

Second, a passage from Cornman and Lehrer's introductory book, \textit{Philosophical Problems and Arguments}. They say:

Our beliefs about what we hear, touch and see, and the knowledge claims that arise from such convictions, are based on inductive evidence. A word of clarification is needed here because it might seem

\textsuperscript{8} Both of these are bad statements of what Pollock presumably means. The first (ibid, p.70) says that \textit{some fact} is a result of the chapter, whereas he presumably means that \textit{the discovery} (or some such) of this fact is a result of the chapter. The second sentence (ibid p.80) says that \textit{some sentence} is a prima facie reason for a belief. But, \textit{sentences} are not reasons for beliefs. From his characterization of reasons (ibid p.33) one might imagine that this second sentence should be construed as saying that the fact, of S's belief, that S is appeared to ply is a reason, however, as this was not argued for in Chapter Three one can only presume that what Pollock meant is: S's being appeared to ply is a prima facie reason for S to believe that there is something p before him.

\textsuperscript{9} Ibid, p.29.
that such beliefs are not justified by such evidence at all. We do not ordinarily justify our perceptual beliefs - for example, my belief that I see a red apple in my hand - by appealing to some other belief or statement. However, even if the belief is not justified by any such statement or belief, these beliefs are not without evidence. It is the unformulated evidence of our senses, the direct and immediate evidence of sense experience itself, that we assume justifies those beliefs. Moreover, if the evidence of our sense completely justifies our perceptual beliefs, then these beliefs might constitute knowledge and thus enable us to formulate evidence to justify our beliefs about the future, the past, and other matters as well.  

First, Cornman and Lehrer, like Pollock, seem to assume that ordinarily justification is a relation that obtains between beliefs, but that this is not true of justification in perception. Second, their claims are hedged about by many qualifications. They say "even if the belief is not justified by any such statement or belief" (italics added) - but they fail to assert that the belief is not justified by another belief. They say "we assume [sense experience itself] justifies those beliefs" (italics added) - but they do not say that this assumption (that is, the Cartesian doctrine) is correct. In general, it is

10 Cornman & Lehrer, Philosophical Problems, p.47.
12 Elsewhere (ibid pp.56-57, 76-77 and 110) they appear to endorse the Cartesian doctrine. However, in the first two places they are merely stating a position to be discussed and in the third there is no really clear commitment to Cartesianism. Lehrer, however, clearly denies the doctrine in his book Knowledge, p.188.
notable that, while toying with it, they fail to endorse the claim that in perception something other than beliefs can justify beliefs.\footnote{13} Pollock's claim is that mental states other than beliefs can justify. Although Cornman and Lehrer do not use the term 'mental state', I presume that the claim they consider - that sense experiences justify beliefs - is tantamount to Pollock's, in that having a certain sense experience is being in a certain mental state. I turn now to an argument to show that mental states other than beliefs cannot justify. Earlier (see pages 136-37 above), I argued that it is not facts that justify beliefs. This is so for two reasons: first, one says that a false belief can justify another; and second, only facts that one is apprised of justify beliefs one holds - the fact that the sun is shining is not what justifies the submariner who has been "down" for two weeks in believing that it is now daytime. Just as states of the world in general (that is, the fact that the world is in such-and-such a state) do not justify beliefs, so neither do members of the subclass states of one's body. Snowden's belief that he is about to die is not justified by his abdominal wound, though, if he had realised that he had such a wound, the realisation (that is, the beliefs involved) would have justified

\footnote{13} Chisholm, also, probably holds a position similar to that mentioned by Cornman and Lehrer, and endorsed by Pollock. See: Roderick M. Chisholm, Perceiving: A Philosophical Study (Ithaca, New York: Cornell University Press, 1957), p.66. Yet see also p.62, footnote 7, which seems to suggest that only beliefs are the relata of the justification relation.
such a belief. In exactly the same way in which states of one's body do not in and of themselves justify beliefs one holds, so neither do one's states of mind in and of themselves necessarily justify one's beliefs. This conclusion is implicit in one case that I have already argued. I claimed (page 135 above) that while being giddy does not justify one's belief that one's chair is being rotated, one's belief that one is giddy does justify such a conclusion. Being angry is, perhaps, more clearly than being giddy a mental state, and the same point can be made with respect to it. Imagine that I am physically violent whenever I am angry in the presence of other humans. Then, it is my realising (and thus, believing) that I am angry, and not simply my being angry, which justifies my belief that I should seek solitude. If such examples are not thought very convincing it is, I believe, because of a difficulty in imagining that a person can be in a certain mental state without realising (that is, believing) that he is. In fact there is nothing exceptional in saying that someone is angry, envious, paranoid, etc., without that person believing it. These examples of mental states that do not seem capable of justifying beliefs undermine the claim that mental states in general can justify beliefs. If this were the basis for accepting the Cartesian doctrine (as it would appear to be for Pollock), the Cartesian doctrine itself would be undermined.

I have argued that mental states, in general, are no different from other bodily states, which are no different from other states of the world in that they cannot justify beliefs.
This might seem strange in light of the fact that I have claimed that beliefs (and other propositional attitudes), which are not mental states, are what justify. However, the argument is slightly different. As I indicated above (page 216) there is general agreement that beliefs do justify beliefs. The argument that Pollock and other Cartesians have to make is, granted beliefs are different from states of the world in general in that they can justify, that there are other states of the world that can justify beliefs. I have argued that as not all mental states can justify beliefs, it has not been established that any particular mental state other than a belief can justify.

Apart from the structure of the argument being such that the burden of proof is on the Cartesian to establish that something other than beliefs can justify, beliefs are, in a relevant way, different from other mental states. One can have what I shall call 'alternative access' to beliefs. One, and others, have access to what beliefs one holds through knowledge of one's behaviour (where 'behaviour' is construed in a very wide way to include "linguistic behaviour"). One alone has another path of access to one's beliefs; a path of access which is quite independent of observation of one's behaviour. That is all I wish to maintain, and that much is, I think, beyond doubt. I do not wish to maintain that the access one alone has to one's beliefs is infallible, indubitable or even superior to the public access to one's beliefs in being, as a matter of fact, less liable to error. For footnote 14 see see following page (220).
question of whether or not one holds some belief is one's behaviour and not one's private access. Despite this access being in no sense superior, it is an alternative access to beliefs.

Similarly, there are two ways of being apprised of one's non-belief mental states: one can, like others, discover (that is, arrive at beliefs about, on the basis of observation) what they are on the basis of one's behaviour ("I did not realise how angry I was until he came within striking distance and I lashed out at him"), or one can "simply know" what they are. "Simply knowing", which can be thought of as an alternative access to one's states, also involves beliefs, however. When one "simply knows" what state one is in one knows, or at least believes, that one is in a certain state. Thus, in "simply knowing" one is in some mental state (other than a belief state), the state merely causes the belief which is involved in the alternative access. Beliefs are peculiar amongst mental states, states of the body and states of the world, in being involved (other than causally) in alternative access. As alternative access is necessary to break the regress of justification, it would not be surprising if beliefs alone amongst mental states could justify other beliefs.

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14 It is because I repudiate any claim of superiority for this access that I call it 'alternative access' and not 'privileged access'. As Alston's careful review - William [P] Alston, "Varieties of Privileged Access", American Philosophical Quarterly 8 (1971) suggests, 'privileged access' is normally associated with claims of superiority.
Further, against the claim that mental states other than beliefs can justify, one can construct the following dilemma. It is either the case that mental states are "belief entailing" (that is, A being in mental state X entails that A believes A is in mental state X), or they are not. If they are not belief entailing, there seems to be no reason why mental states any more than other bodily states or states of the world should be thought to justify (that is, provide justification for) beliefs. On the other hand, if mental states are belief entailing, then suggesting that mental states can provide justification is not to claim anything more than that only beliefs can justify, because being in a mental state would involve having a belief. Thus, whichever horn of the dilemma one takes, there is no good reason for saying that anything other than beliefs can justify beliefs. The dilemma is attractive because, probably, some mental states are belief entailing while others are not. If this is so, the above argument remains sound.  

The above dilemma hinged on whether or not a mental state is belief entailing. However, a relationship weaker than entailment is no salvation for the thesis that mental states can provide justification. Even if it were the case that A being in mental state X invariably and instantly caused A to believe that A is in mental state X, there would still seem to be no reason

15 The distinction between mental states that are belief entailing and those that are not would, presumably, mirror the distinction Dennett makes between, respectively, a response in the efferent side of the brain and one solely in the afferent side. See: Dennett, Content, pp.74-76.
to say that it is A's being in this state, rather than S's believing A to be in this state that justifies other beliefs. Analogously, even if the blast on the factory whistle invariably and instantly causes A to believe that the factory whistle has just blown, it is still this belief that justifies A's further belief that work is over for the day, and not the fact of the whistle being blown. Again, there seems no good reason for saying that anything other than beliefs can justify other beliefs.

This re-examination of the issues confirms the conclusions arrived at earlier. Awareness is not a propositional attitude and certainly not one with a belief component. There seems no reason to think that anything other than propositional attitudes can be the relata of the justification relation, and of these, only propositional attitudes with a belief component (or the belief component itself) can justify. Thus, the Cartesian doctrine, on the basis of these considerations alone, is seen to be untenable. Meanwhile, the doxastic thesis remains unscathed - justification can come from nothing but beliefs (or propositional attitudes with a belief component).

Finally, a minor observation on a way in which the doxastic thesis would seem to be more flexible than the Cartesian doctrine. The latter sees a line or chain of justification stretching from its beginning point in the having of awareness to an end point which is presumably at the level of everyday
beliefs about the world and its constituent objects. Now, one would expect (though it is not necessary) that the "cross-over" into beliefs along this line of justification would occur at a fairly low level. In particular, one would expect a Cartesian to claim something such as that one's awareness of, say, red, justifies a belief that one is aware of red, and on the basis of such "low-level" beliefs about objects, etc. Thus, the Cartesian doctrine is closely allied with a thesis about a class of basic beliefs in perception - a class that can be distinguished by the nature of the content of the beliefs (that is, the basic beliefs will be beliefs about awareness). This is a claim made by many Cartesians.\footnote{See, e.g.: Chisholm, Perceiving, pp.58 and 66; and Clarence Irving Lewis, An Analysis of Knowledge and Valuation, The Paul Carus Foundation Lectures VII (LaSalle, Illinois: The Open Court Publishing Company, 1946), p.172.} The doxastic thesis is not committed to anything similar. Even given chains or lines of justification amongst beliefs, it does not require there to be a class of basic beliefs, and certainly no such class of beliefs that could be characterized by the nature of their content. In this way, the doxastic thesis would seem to be more flexible than the Cartesian doctrine - a flexibility that is a virtue of the theory.

C. Justifying and Being Justified

There is a putative problem that confronts the claim that
only beliefs can justify beliefs. It is that the claim leads to an infinite regress, circularity, or an arbitrary termination in lines of justification. It is argued that if there be a terminal belief, it is an arbitrary terminus in that one could seek the belief that justifies it, but for some reason one chooses not to. Alternatively, lines of justification either stretch back infinitely or they return to an earlier element in the chain, giving circularity. As none of these alternatives is acceptable in a satisfactory account of the justification of perceptual beliefs, a problem is raised for the doxastic thesis. But, these are the sole alternatives only on the assumption that if one belief justifies another, there must be some third belief that justifies the first - that is, that a belief which justifies (or provides justification) must itself be justified (or be provided with justification).

Pollock maintains that this assumption is correct. He says:

In order to justify a belief one must appeal to another belief, but the simple fact that a person believes one thing does not automatically mean that he is justified in believing something else which can be supported by the first belief. He must not only have the first belief - he must also be justified in having it. If a person believed, for no good reason, that the moon was shaped like half an egg-shell, so that it had no back side, this belief would not justify his believing further that the pictures that have been taken of the back side of the moon are fraudulent. To justify a belief one must appeal to a further justified belief.¹⁷

¹⁷ Pollock, Knowledge, pp.25-26. At this point Pollock is still operating under the assumption, which he later rejects, that only beliefs can justify beliefs.
But, this argument merely parades one instance of the assumption and is therefore not very compelling. Were one to seriously doubt that a belief must be justified for it to be able to justify, one would likely not be moved by the example. It is not easy to decide whether this assumption is correct, but I think that the evidence, in sum, strongly suggests that it is not.

Pollock seems to be caught in a strange inconsistency here. He maintains that for it to justify, a belief must itself be justified. Further, he maintains that mental states can justify. Although he never says as much, I presume that he thinks that mental states can justify without themselves needing to be justified. For, if mental states could only justify if they were justified, the original problem of infinite regress, circularity, or arbitrary termination of chains of justification would confront the Cartesian doctrine. But, of course, having a certain belief is a paradigm of being in a certain mental state, and thus, Pollock appears to contradict himself in saying that one type of mental state (believing) both has to and need not fulfill an additional condition (be justified) in order for it to be able to justify.

Pollock can, of course, easily escape the alleged inconsistency, simply by weakening the claim to that only some mental states can justify without being justified. Recognizing that Pollock can avoid inconsistency in this way is what invests his problem with more general significance. If the Cartesian doctrine is not to be confronted with the regress (circularity,
etc.) problem while the doxastic thesis is, it must be claimed that beliefs are different from other mental states (or at least, awareness) in that they alone must be justified if they are to justify. However, there seems no good reason for saddling beliefs, but not other mental states, with this extra condition on their ability to justify. The infinite regress worry looks like ad hoc trouble-making by the Cartesian for the doxastic thesis.

To this a Cartesian might reply that there is something that sets beliefs apart from awareness (and other mental states). It is that states of awareness (and other mental states) are not the sort of thing that need to be provided with justification: they simply are - there is no question of their being justified. If one accepts this claim it does provide a basis for distinguishing beliefs from other mental states, but it is not clear that this is all that is needed. It reiterates that beliefs can be justified, but it does not establish that they need to be if they are to justify. Or, conversely, it underlines the fact that states of awareness cannot be justified, but does not establish that they need not be for them to justify. Thus, it is not clear that this difference is a good reason for imposing the additional condition on beliefs and not other mental states.

More importantly, the objection seems to undermine the Cartesian position itself. To say "awareness just is - that there is no question of it being justified" is hardly to state a clear and cogent thesis: but, I presume that the point is something such as that justification simply does not apply to aware-
ness - that to say it does is to make a category mistake (or some-such). If this is the point of the original claim, the Cartesian will not be happy with it as it conflicts with the Cartesian doctrine: if justification does not apply to awareness, awareness can hardly justify beliefs. Thus, one has a dilemma: if one makes the claim, the Cartesian doctrine is not tenable, but if one does not make the claim there seems no good basis on which to maintain that the doxastic thesis confronts the regress problem while the Cartesian doctrine does not. In arguing that the regress equally faces Cartesianism and the doxastic thesis I have undermined the differential support that the problem is supposed to give to the Cartesian doctrine. However, more than this, the discussion has made it obvious that while any belief could be justified, this is no argument that it should be justified before it can provide justification.

One might think that unless the condition that beliefs that justify are also justified is insisted upon, the notion of justification will not be tied in any way to that of truth. But I have already argued that the notion of justification is not tied to that of truth (see pages 136-37 above) and so, this is not a good reason for insisting that all beliefs that justify should also be justified by some other belief.

Thus, there seems to be no sound argument for the conclusion that a belief must be justified in order for it to be able to justify another belief. As this is so, there is no reason to think that the three alternatives - infinite regress,
circularity and arbitrary termination - are exhaustive. The possibility of beliefs that are not justified provides a terminus for lines of justification that is not arbitrary in the sense of being the point at which tracing the justification back is abandoned - it is the line of justification that terminates, not one's pursuit of it. (The termination of the trail "Going West" at the Pacific shore is not arbitrary, though ending one's journey at any particular point on a featureless Mid-Western plain is). What beliefs (if any) of some individual are such that he has no other beliefs that justify them is a matter of fact - and the facts will probably differ from one individual to another. In one sense, of course, any fact is arbitrary (even that the trail west should end where it does), but in this sense the arbitrary termination of a line of justification is no problem.

The notion of support provides an analogy for what I am suggesting about justification. Because the earth supports the pillars and the pillars support the roof, people have been led to think that, therefore, the earth itself must be supported by something. For example, in the Haida myth an Atlas-like character whose name translates as 'Sacred-One-Standing-and-Moving' supports the earth, and in turn is supported on a copper box. The ending of the account of the support is arbitrary in that

the myth fails to go on and explain what supports the copper box, though the Haida would undoubtedly have believed that something did. In contrast, Newtonian physics maintains that the earth is able to support things, but is not itself supported by anything. I am suggesting that, in an exactly comparable way, the common experience that one can find some other belief to justify almost any belief one has, does not necessarily mean that every belief that provides support (that is, justifies) is also supported (that is, justified) by some further belief.

Thus, the doxastic thesis does not necessarily lead to one of the three equally unacceptable alternatives. Moreover, the doxastic thesis does not necessitate that a belief that for one person is justifying but unjustified should also have the same status for every (or any) other person who has that belief. Further, as indicated earlier (see page 222 above) beliefs that justify but are unjustified, are not required by the thesis to be identifiable by their type of content (for example, they do not have to be about awareness). Finally, the doxastic thesis does not require that one always is aware of the terminal belief in a chain of justification: it is perfectly reasonable to view the process of tracing back a line of justification as involving discoveries as to what beliefs one holds, and there is no reason to think that one always (or perhaps even ever) is successful in tracing back lines of justification to their terminal point.¹⁹

¹⁹ See, e.g.: Harman "How", p.353; and Quinton, "Problem", p.47.
D. Consistency

The doxastic thesis might appear to provide a very spare account of the justification of perceptual beliefs: the perceiver has certain beliefs; some of these beliefs are not justified; others are justified solely on the basis of their relation to others of the perceiver's beliefs. Nothing in this account guarantees that justified perceptual beliefs will reflect the way the world is. In this and the following sections I discuss two factors which explain how it is that a perceiver's justified beliefs correspond as accurately as they do to the way the world is. I argue that, in both cases, these factors are not an additional "source of justification".

First, the process of making one's total set of beliefs consistent. In perception one is sometimes caused to have inconsistent beliefs. For instance, having been confronted with the situation described earlier (see page 13 above), I might have believed these four inconsistent things: that the wall is yellow; that later the wall is brown; that the wall, throughout is uniformly coloured; and that the colour of the wall did not change throughout. One of these beliefs has to be false. Thus, there is a sound reason for eliminating inconsistency in one's set of beliefs.

A set of beliefs can be made consistent by arbitrarily eliminating beliefs until the set is consistent. However, there are what one takes to be more intelligent ways of removing in-
consistency. For example, there is "collecting more evidence", which would appear to consist largely in acquiring further beliefs about the subject in question before deciding which members of this enlarged set of beliefs to reject. Another consideration is that of producing least overall alteration in one's total set of beliefs. There are other considerations: and sometimes they will conflict amongst themselves.

Although making one's set of beliefs consistent is probably something that is never perfectly achieved, in that most people probably hold inconsistent beliefs, most humans are loath to tolerate what they realise to be an inconsistent set of beliefs. Thus, although the concept of a person holding a perfectly consistent set of beliefs may be something of a fiction, for simplicity, I operate with it in the next few pages. The extent to which most persons' set of beliefs deviates from a consistent set is of no consequence to my subsequent arguments.

Now, making one's set of beliefs consistent does not do away with any of the philosophical problems of perception. For example, it is consistent to believe that the same object appears under one condition blue, and under another condition red, which raises the issue of the justification for beliefs about the object's real colour. But, although it does not solve the philosophical problems, making one's belief set consistent is a step in the right direction.

An inconsistent set of beliefs is certain not to mirror the world accurately, for an inconsistent set of sentences has
a probability of zero. Making one's belief set consistent introduces the possibility that all the beliefs are accurate. Although this does not do much to explain how it is that a perceiver's beliefs are accurate, it is obviously a major improvement in the perceiver's ability to operate in the world. However, I do not claim that eliminating beliefs in order to render the set consistent is an additional "source of justification" for these beliefs. Because claims of this sort have been made, I shall briefly examine them.

Pollock, for example, has made such a claim. He adopts the phrase 'a belief is prima facie justified', which he says he uses:

in the sense that, necessarily, if we have such a belief, then in the absence of any other belief that constitutes a reason for rejecting it, the belief is justified. More precisely, let us define:

(2.2) "P is prima facie justified for S" means "It is necessarily true that if S believes (or were to believe) that P, and S has no reason for thinking that it is false that P, then S is (or would be) justified in believing that P".\textsuperscript{20}

The view I mentioned above is that making one's belief set consistent is an additional source of justification: that is, one is caused to have inconsistent beliefs, but in eliminating some to make the set consistent, the members of the consistent set gain (some) justification. A claim that is less extreme (in that it claims justification for a smaller class of beliefs) is that if one is caused to have a belief, but not caused to have a

\textsuperscript{20} Pollock, Knowledge, p.30.
contrary belief, then the belief is justified. This is closely related to Pollock's claim, which amounts to that if one has a belief, and has no beliefs which justify the negation of the first belief, then that belief is justified. Pollock's claim is more stringent than the second claim mentioned above in that it sets more restrictive conditions on saying that a belief is justified (Pollock's claim entails the second claim, but not vice versa). All that separates the second claim from the first is a factor that would seem to be irrelevant to the question of whether a belief is provided with justification - the question of whether contrary beliefs were had and rejected, or whether they were never had. Thus, Pollock's claim is clearly a version of claiming that consistency confers justification.

What is wrong with all this is that it is an attempt to define into existence justification that simply is not there. I have argued (and, at this stage in his book, Pollock is still operating under the assumption, which he later rejects) that only beliefs can justify. It is beside the point to suddenly start saying, or to stipulate that beliefs are also justified under such-and-such other conditions. Saying that beliefs that fulfill these conditions are justified does not, unfortunately, provide the justification or show how it is provided. Pollock comes very close to recognizing this when, immediately following

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21 Assuming, as I think is reasonable, that 'having a reason for thinking that it is false that P' is understood more widely that 'having a belief that entails the negation of P'.
the above-quoted passage, he says: "The basic idea behind the concept of a prima facie justified belief is that there is a 'logical presumption' in favor of the belief's being justified". I am not quite sure what he means by saying that this is a logical presumption. Pollock makes a presumption in favor of a belief's being justified, but to presume this does nothing to establish that it is correct. I, for one, am unwilling to base a philosophical account on a presumption — especially a presumption which one has reason, from the independent considerations on the relata of the justification relation, to think is false. (Although I think it is wrong to attempt to base an account of the justification of perceptual beliefs on a presumption in favor of beliefs being justified, I shall shortly argue the similar claim that there are reasons for thinking that beliefs had by perceivers are likely to be correct (see pages 239-43 below). However, the differences between Pollock's claim and mine are important: i) his is about beliefs being justified, mine about them being correct; ii) his is a presumption, mine is a factual claim; and iii) his is intended as part of a philosophical account, mine is not).

In his book, *Knowledge*, Lehrer claims that Thomas Reid held a view similar to Pollock's — that some beliefs are justified in and of themselves. He says:

Reid averred that some beliefs, for example, perceptual beliefs concerning what we see immediately before us are in no need of justification. Though they can be erroneous, Reid conceded, they nonetheless stand justified in themselves without need of independent corroboration, at least until some argument is brought forth to sustain
the claim that such a belief is false. In short, such beliefs are self-justified because their justification is inherent. As Reid put it, they have a right of ancient possession and until this inherent right is successfully challenged, they remain justified without support from any other information at all.\textsuperscript{22}

There are some minor problems in Lehrer's statement of Reid's position but I stop to consider neither these, Reid's position, nor Lehrer's examination of it. Lehrer's conclusion regarding Reid's claim is very similar to mine regarding Pollock's - summed up, at one point, when he says that the claim is "intuitively implausible and fundamentally dogmatic".\textsuperscript{23} However, most interesting is Lehrer's consideration of how the claim could be defended:

The defence must take the form of showing the alleged basic beliefs to be self-justified in terms of the objective of such justification, namely, to guarantee the truth of the beliefs in question. The problem is to show that a man seeking to guarantee the truth of his beliefs could reasonably take some beliefs to be basic.

If it could be shown to be reasonable for a man seeking a guarantee of veracity in what he believes to justify all his beliefs, in terms of certain ones which are not justified by any others, then it would be reasonable for him to lay down epistemic principles according to which the latter beliefs are self-justified.\textsuperscript{24}

That a guarantee of truth is the objective of justification is an hypothesis assumed in the larger context in which the discussion of Reid occurs (and, I might add, an hypothesis Lehrer

\begin{itemize}
  \item \textsuperscript{22} Lehrer, \textit{Knowledge}, pp.101-02.
  \item \textsuperscript{23} Ibid. pp.119-20.
  \item \textsuperscript{24} Ibid. p.121.
\end{itemize}
himself rejects). However, even if one considers the objective of justification to be different from this, Lehrer's conclusion follows just as surely. But, whatever one takes to be the objective of justification, Lehrer's conclusion needs to be expanded. His claim is that if one can show one's beliefs to be justified by other beliefs that are not justified by some further beliefs, then it is reasonable to assume those justifying beliefs to be, themselves, self-justified. But this is only so, given the assumption that a belief must be justified in order to justify - which, I earlier argued, is not correct (see pages 223-228 above). Thus, in the situation Lehrer describes, it is reasonable to assume either that the justifying beliefs are self-justified, or that they are not justified. As these two cases are equally consistent with the argument, and because the former requires the abandonment of the principle that only beliefs justify beliefs whereas the latter does not, the latter is clearly preferable. Thus, the attempt to show that claiming self-justification of beliefs is reasonable should always result in the conclusion that it is not reasonable - it being preferable to construe the justificatorily basic beliefs as unjustified.

Thus, I claim that consistency is an extra condition imposed on one's justified beliefs - rather than being a feature that "provides justification" for beliefs. If one fails to have inconsistent beliefs, or if one makes one's set of beliefs consistent, one can place greater trust in the consistent set as a basis for action in the world. But there can be more reason for putting one's trust in a belief than that belief's justification,
and correspondingly, there is no need to think of consistency as providing justification for beliefs. Although I will not argue the case here, I presume that the same is true of other considerations one might impose on a set of justified beliefs. For example, conditions of coherence (stronger than consistency) and simplicity, might be imposed on one's belief set. Again, I see no reason for construing them as providing further justification for the coherent, simple, consistent set of justified beliefs.

When the doxastic thesis is supplemented by factors such as consistency (coherence, simplicity, etc.?) the total account of the justification of perceptual beliefs begins to look less spare and more plausible.

E. The Survival Argument and Other Matters of Fact

The picture that has emerged so far is that the account of the justification of perceptual beliefs has to be given in terms of the fact that one has certain beliefs, the relations of justification between various beliefs and the consistency of the set of justified beliefs. However, all these conditions could be fulfilled and yet none of the beliefs be true. Thus, these three factors alone do not ensure that a consistent set of beliefs (some of which justify others) mirror the way the world is.

Essentially this criticism is made by Pollock of what he calls 'the nebula theory' - that is, the theory that lines of
justification regress infinitely. He says:

According to the nebula theory, a person is justified in holding a belief P whenever he holds an infinite (possibly circular) sequence of beliefs Q1, Q2, .... such that P is supported by some of the beliefs in the sequence and each belief in turn is supported by later beliefs in the sequence. The basic difficulty with this is that it cuts justification off from the world. A person could be justified in believing anything. All that would be required would be a sufficiently outlandish but coherent set of beliefs.²⁵

This sort of criticism can also be made of the view that lines of justification terminate at beliefs that are not justified.

As Pollock states it, the difficulty is that either view "cuts justification off from the world". Now, this is a strangely vague way to phrase the criticism - one wonders what, exactly, it can mean. On one understanding it is plainly false - beliefs are mental states and as mental and bodily states are just states of the world, beliefs, and thus the relations of justification between them, are most certainly parts of the world. (Presumably, no defence is to be found in a Cartesian mind/body dualism, as the world must be taken to include both the mental and the physical). I suppose that what Pollock must mean by this and his immediately subsequent comment that "A person could be justified in believing anything", is that justification is cut off from truth, or more precisely, that justified beliefs are cut off from true beliefs. But construed in this way it is not clear that there really is a difficulty. The notion of a justified belief is "cut off from" that of truth in

the sense that these are logically independent notions (as is attested to by the fact that 'true' in the slogan 'knowledge is justified true belief' is not redundant). Given how liberal the conditions on justification are, it should be no surprise that one could be justified in believing almost anything. Any belief one has, no matter how outlandish, could be justified provided one has another, suitably outlandish, belief.

However, although justified beliefs could (that is, logically could) be "cut off from the world", there is an argument - which I call here 'the survival argument' - which establishes that the beliefs which individuals are caused to have are more or less appropriate. (By saying that the beliefs are more or less appropriate, I mean that more or less of them are true). Having a belief is a result of some causal process. There is some cause of my acquiring the belief that it appears to me now that my visual field is completely occupied by a uniform red colour, whether or not that cause is my awareness of inclusive and uniform red. Furthermore, the processes that constitute making one's belief set consistent are capable of causal description. Now, these causal factors ensure very little: one can imagine organisms so constituted that a given stimulus causes them to have a belief that is totally inappropriate to that stimulus. But, although one can imagine such organisms, it is a little more difficult (if not impossible) to imagine such organisms surviving for long. Organisms so constituted that they are caused to have inappropriate beliefs are not fitted for sur-
vival - they are prime targets in the guerrilla warfare of evolution.26

I illustrate this claim with one example. There are light stimuli that are so strong that if the eye is exposed to them for very much more than a fraction of a second they destroy part of the eye's mechanism, which leads to blindness. Imagine an organism so constituted that such a stimulus caused it to believe that in order to see more clearly it needs to open its eyes wider. Clearly, such an organism would not retain its sight for long in an environment in which it is exposed to such stimuli. Such an organism could hardly be said to be 'fitted for survival', and in an environment in which it is in competition for its continued life with organisms caused by such a stimulus to have a more appropriate belief one would expect its days to be numbered.

This argument depends essentially on a correct understanding of what it is for something to hold a belief. If something's behaviour could be totally separated from its beliefs, then the argument would not go through. If the organism were able, on the occurrence of such a stimulus, to be caused to believe that in order to see better it should open its eyes wider and yet be

caused to shut its eyelids, put its paws over its eyes and turn away from the light source (even though it wanted to see better), then the fact that it is caused to have inappropriate beliefs would not make it unfit for survival. But I submit that it is not possible to divorce beliefs from behaviour in this way. Given that the organism does want to see better (something that, of course, it is necessary to establish independently) it is not possible to imagine that it believes it could achieve this end by opening its eyes wider if it closes its eyes. (It is, of course, possible for something to want to see better, believe it could do this by opening its eyes wider and yet at the same time close its eyes, if other goals and beliefs conflict and are valued more highly. For example, the organism might believe that it will be attacked by a nearby predator unless it "plays dead", which involves closing its eyes, and it might value its survival more highly than seeing better. However, I was tacitly ruling out such complications for, while they introduce elaborations of the example, they do not alter the essential point). Further, if beliefs were totally divorced from behaviour then the beliefs of others would seem to be totally beyond one's reach - something that, in fact, is not the case. Thus, the conclusion of the argument above stands.

The example I gave concerns vision, but one can imagine similar arguments in the case of the other sense-modalities. In fact, potentially hazardous touch and auditory stimuli, for example, are perhaps more common than such visual stimuli. Further,
besides causal connections between stimuli and beliefs that would tend to lead to organism-destruction, one can imagine causal connections that would tend to lead directly to the destruction of the organism. Less dramatic, but probably no less crucial over time, are the infinitude of causal connections that could lead to inappropriate beliefs that would not directly threaten the life or organs of the organism, but which in conjunction could be its undoing. Finally, such arguments apply also to the causal processes that make up the procedure of eliminating beliefs in achieving a consistent belief set. One can imagine two individuals who, while caused to have the same beliefs, were caused to select different consistent belief sets - where the difference is such that one individual would be less fitted for survival than the other.

The survival argument, then, shows that there could be organisms so causally "wired" that, were they to appear on the scene fully formed, they would not survive for long. As physical decay seems to be a much greater source of death for most animal species than inappropriate beliefs, there is reason to think that most animals are not caused to have highly inappropriate beliefs. Presumably, the longer an organism survives the more reason to think that its beliefs are appropriate. Further, in that causal "wiring" is to some extent passed on from generation to generation within a species, the longer the species survives the more reason there is for thinking that its latest members have appropriate beliefs.
However, the point about survival cannot be used to argue for any high degree of appropriateness of belief set. The belief one is caused to acquire is only one factor relevant to survival, and there are false beliefs that would not significantly impair (and might, indeed, even promote\textsuperscript{27}) most peoples' chances of survival. Whether one believes Newton's laws of motion or Einsteinian physics is unlikely to affect the number of one's days, though there are situations where the correct belief would have greater survival value. However, it is reasonable to place some confidence in any belief that occurs, merely because some organism that has survived (for at least some period of time) is caused to have that belief.

It might be hoped that this would provide something even better than Pollock's "prima facie justification". Does this result not suggest that any belief an organism has, simply because it occurs, is (to some extent) justified? If this were the case even two contradictory beliefs could be provided with some justification (which is not the case with Pollock's prima facie justification). Although this might seem attractive, it is wrong.

The argument that establishes that organisms caused to have appropriate beliefs are better fitted for survival depends on several contingent premises (some of them unstated) about, for example, what factors are relevant to chances of survival. Now, for belief in the survival argument to justify every belief one has, one would have to believe the premises of the

\textsuperscript{27} See, e.g.: Lehrer, Knowledge, pp.173-74.
argument. As the contingent premises are, presumably established on the basis of observation of the world, they are dependent upon perception. Thus, to construe the argument as providing justification for perceptual beliefs is circular, as the justification of the argument depends on justified perceptual beliefs.

The alternative to construing belief in the argument to be what justifies perceptual beliefs, is to claim that it is the facts referred to in the argument that justify perceptual beliefs. But, again, it is not clear that it makes sense to talk about facts justifying beliefs. Earlier (see pages 136-37 above) I argued that the fact that five of the six faces of the die show '6' does not justify my guess that the die will land 6-uppermost, though, had I believed the die to be so constructed the predictive belief would have been justified. Similarly, in this case. Of course, the facts referred to in the survival argument do raise the probability of the truth of any perceptual belief. But then, the facts of the construction of the die raise the probability of the truth of the prediction that the die will land 6-uppermost. The die example illustrates the claim that I have reiterated several times that truth and justification are conceptually distinct matters — which, in this case, means that the facts referred to in the survival argument do not justify perceptual beliefs.

However, the survival argument is not totally irrelevant

See: Williams, "Deciding", pp.102-03.
to a philosophical account of the justification of perceptual beliefs. One has certain beliefs. Some of these beliefs justify others (some of which are not, themselves, justified). One eliminates beliefs in order to make one's belief set consistent. Thus, it is possible to have justified beliefs in perception. Assuming, for the moment, that knowledge is justified true belief, then, in those cases where one's justified perceptual beliefs are true, one has knowledge of the way the world is. (Of course, knowledge is not justified true belief - but that is a detail that is not important here, for all I am sketching is the role that the survival argument plays). If, having given this sort of account of perception the adherent to the doxastic thesis is then asked to explain how it is that one's justified beliefs are ever, or are so often, true, recourse to the evolution argument is in order. The very question assumes a contingent fact - that one's justified beliefs are sometimes, or very often, correct. Reference to contingent matters of fact is demanded in answering an empirical question. The survival argument is then, an answer to a question that very naturally arises when an account such as that based on the doxastic thesis is presented. Neither the question, nor the answer, are properly parts of the philosophical account. However, the argument does supplement that account.

The question: "How is it that one's perceptual beliefs are ever appropriate"? arises naturally on an account of knowledge of the world constructed around the doxastic thesis. However, an exactly comparable question can be asked of accounts
constructed about the Cartesian doctrine - that is: "How is it that one's perceptual awareness is ever appropriate?". It is strange that this question is not asked of Cartesian accounts. Certainly if it is a problem for the doxastic thesis, then it is equally a problem for the Cartesian doctrine. (I maintain that neither question presents a problem for the respective philosophical account: both are contingent questions demanding quasi-scientific answers).

However, with respect to the Cartesian doctrine, the question demands further consideration. In the case of beliefs, the notion of appropriateness was understood as involving the truth of sentences expressing the content of the belief. It is not clear that it should be so understood in the case of the question about awareness. The matter can be presented as a dilemma. If appropriateness of awareness is to be explicated in terms of the truth of beliefs involved, then awareness must have a belief component (that is, be belief entailing), and the Cartesian doctrine is a special case of the doxastic thesis. This horn need be followed no further (see pages 210-11 above). On the other hand, if awareness does not have a belief component then, presumably, one has to cash out the notion of appropriateness in terms of, for example, a blue stimulus causing an awareness (as) of blue, and so on. Now, one might initially think that a variant of the survival argument should supply the answer to the question: "How is it that one's perceptual awareness is (is ever, is so often) appropriate to the stimulus that causes it?" However, I think that this is incorrect. Being in a certain state
of awareness is not tied to the (possible) production of any particular sorts of behaviour in the way that believing is: having a certain type of awareness is compatible with any type of behaviour at all. (Any behaviour that might be thought to necessitate that the organism is in a certain state of awareness, in fact, only necessitates that the organism believes it is in this state of awareness or something similar; and, of course, such a belief could be wrong). Thus, because awareness does not necessitate behaviour it is possible for an organism upon a given stimulus to have totally inappropriate awareness, and yet at the same time to be superbly fitted for survival because the behaviour it is caused to display (and the beliefs it is caused to have) are totally appropriate to the stimulus. At very least, one can conclude that no version of the survival argument will provide a satisfactory answer to the question how it is that awareness is appropriate. However, more than this, the survival argument suggests that while appropriate belief is necessary to survival, appropriate awareness is not at all necessary to survival: so long as one behaves appropriately does it matter what that private phenomenological gloss is like? If appropriate awareness is not necessary to survival, how can it be the basis of the justification of perceptual beliefs which are important in survival - that is, how can the Cartesian doctrine be true?

Is there any other argument that will establish how it is that awareness is appropriate to the stimulus that causes it? One can, of course, investigate reports of perceptual awareness
for given stimuli. However, this is beside the point for two reasons. First, this not so much establishes how it is that awareness is appropriate, as that it is appropriate (if in fact, it is). Second, making a report is a piece of (verbal) behaviour, and thus, such an investigation would establish not the appropriateness of the awareness, but rather the appropriateness of one particular type of behaviour (and one particular facet of having a belief). (Later, page 250 - I raise a point which makes it obvious that one cannot infer back from behaviour to awareness).

Now, the question of the appropriateness of awareness is reminiscent of the teaser that one sometimes encounters in introductory philosophy texts: "How do I know that when we both look at something red you do not have the perceptual awareness that I have when I look at something green? Of course, you have learned to react (verbally and otherwise) in just the ways that I do when we have these different states of awareness, and so no difference will show up in the things we say or in our other behaviour". A not uncommon response, is to say that the suggestion in the question is necessarily false: to say that one has perceptual awareness of red is to say nothing more than that one is having the sort of perceptual awareness one has when one sees something red. If this were correct, it would provide an answer to the question under consideration: it would be analytically true that states of awareness are appropriate to the stimulus that causes them. However, if states of awareness are necessarily appropriate it would be impossible that one should ever
suffer illusions dependent upon causal processes in one's body. But the jaundiced eye, looking at a white surface in sunlight, received a stimulus (white light) that is, inappropriately, accompanied by a yellowish awareness. At the very least, the position has to be modified to that 'awareness of X' means that sort of awareness one has when X is perceived understandard conditions. This recourse to talk about standard conditions (involving as it does, reference to an indefinitely large number of different possible sources of illusion) is a move, well-known in the philosophy of perception, that is rightly regarded with great suspicion. But there is a more fatal flaw to the suggestion. Saying that 'awareness (as) of X' means awareness had (under standard conditions) when X is perceived, assumes that one type of event (occurrence of stimulus X under standard conditions) is always accompanied by another type of event (a certain type of awareness). But this is a contingent assumption: it could be the case that different events of the first type are always accompanied by events so different that they are of no one type. For example, repeated occurrence of a blue light stimulus could cause the awareness one describes as awareness (as) of blue, then awareness of green, then red, then yellow, then awareness (as) of the smell of bacon frying, and so on.²⁹

²⁹ Of course, this talk of "types" is very slippery - any collection of individuals can be arbitrarily classified as of one type. However, even if it were not ruled out by other considerations, recourse to this sort of point for anyone defending the analytic thesis under discussion is out of the question, because it is tacit admission of what the thesis is intended to show is false - that one might have awareness of red when someone else, presented with the same stimulus, might have awareness of green.
Given, then, that it involves a contingent claim, it cannot be an analytic truth that awareness is appropriate to the stimulus. Thus, this claim is seen to be, like all the other arguments that have been considered as possible answers to the question of how it is that awareness is appropriate, unsatisfactory.

Even if the above argument, or some other, were to answer the question about the appropriateness of awareness, there is still another similar question that faces the Cartesian doctrine. This is: "Even assuming that one's perceptual awareness is appropriate to the stimulus, how is it that one's perceptual beliefs are appropriate to one's perceptual awareness?" Even if the Cartesian doctrine were correct in claiming that states of awareness can justify beliefs, if an organism were so constituted that it had totally appropriate awareness and yet was not caused to have appropriate beliefs it would be in a poor situation. In short, such an organism would be ideally suited to justifying an appropriate belief were it ever to have one, but because it had no appropriate beliefs it would be eminently unsuited to knowing anything about the world. The survival argument, of course, answers this question. (But the survival argument only explains why behaviour is appropriate to awareness on the assumption that awareness is appropriate to the stimulus that causes it. Effectively, the survival argument links stimulus and behaviour, but does nothing to establish the appropriateness of awareness to either). The main point to note is that the accounts constructed around the Cartesian doctrine and the
doxastic thesis both suggest exactly the same question, and in both cases the same answer can be given. This again throws some doubt on the Cartesian doctrine because it begins to appear as if the account constructed around it has, for it to look satisfactory, to include all the elements that are included in the account constructed around the doxastic thesis. The additional elements in the Cartesian account - awareness and the role that it is supposed to play - appear to be redundant as well as unsatisfactory (as I have argued elsewhere).

Again, the doxastic thesis is seen to be preferable to the Cartesian doctrine. The sorts of question that face the doxastic thesis confront the Cartesian doctrine twice over. The second occurrence of this question with respect to the Cartesian doctrine can, perhaps, receive the same answer as can be given in respect of the doxastic thesis. However, it is not clear that the first occurrence of the question with respect to the Cartesian doctrine can be given a satisfactory answer - which must be the source of some embarrassment to an adherent to the Cartesian doctrine. At the same time as indicating that the doxastic thesis is preferable, the discussion also suggests that some parts of the Cartesian doctrine (the questionable parts at that) are redundant.

30 In the same terms as those in which Pollock couched his criticism of "the nebula theory", one might take the unanswered question facing the Cartesian doctrine to suggest that if awareness cannot be shown to be appropriate, then the justification that it might be thought to provide is "cut off from the world".
Above I argued that the survival argument does not provide justification for perceptual beliefs because the facts referred to in the argument are not able to justify beliefs; and though belief in these facts would justify perceptual beliefs, this leads to circularity. In this respect the survival argument is like other claims that are made for the justification of perceptual beliefs. I mention one other case. Alston has claimed that:

IV A PB [perceptual belief] is justified if it arose from perceptual processes in favourable conditions.\(^3\)

Alston acknowledges that this claim needs to be explained in more detail (and indeed, in his verbal presentation he did expand upon it considerably), but such explication is beside the point for my concerns. Alston's further comments make it clear that in IV it is a fact that is taken to justify a belief:

It must be emphasized that what IV lays down as a sufficient condition for justification is that the belief in fact originated in such a way as to satisfy certain "favorableness" requirements. It is not also required that the perceiver knows, believes or be justified in believing that the belief has originated in this way.\(^3\)

Although Alston's paper is not primarily directed at arguing for IV, he does say this in its defense:


\(^3\) Ibid. p.9. Italics in the original.
Now for what gives IV its plausibility. Suppose that we are able to specify favorable conditions in such a way that whenever a PB arises in those conditions it is overwhelmingly likely to be correct. Let us further suppose that it is constitutive of the concept of epistemic justification that a person actuated solely by the desire to attain truth and avoid error will take the fact that his belief that \( p \) is epistemically justified as an adequate reason for believing that \( p \). It would seem to follow that PB's that arise in favorable conditions are thereby justified. For the ideal epistemic subject just described will certainly take the fact that his belief that \( p \) is overwhelmingly likely to be correct as a sufficient reason for believe that \( p \).

Two points about this account of IV's plausibility.

First, the argument is fallacious. It runs:

If belief arose in favourable conditions, then it is overwhelmingly likely to be true (first quoted sentence),

If belief is overwhelmingly likely to be true, then that is sufficient reason for believing it (final quoted sentence),

from which one can conclude:

If belief arose in favourable conditions, then that is sufficient reason for believing it.

From this, together with:

If belief is epistemically justified, then that is sufficient reason for believing it (second quoted sentence),

It does not follow that:

If belief arose in favourable conditions, then it is epistemically justified (third quoted sentence).

Irrespective of this fallacy, Alston's argument for the plausibility of IV hinges on the claim that "the ideal epistemic subject just described will certainly take the fact that his belief

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33 Ibid, p.9.
that $p$ is overwhelmingly likely to be correct as a sufficient reason for believe that $p$." (italics added). But, for the subject to take the fact that the belief is overwhelmingly likely to be correct as a reason for accepting the belief, he must believe that the belief is overwhelmingly likely to be correct. Certainly, the fact that the belief is overwhelmingly likely to be correct, in and of itself, will not move the subject to do anything. Alston's argument (even ignoring the fallacy) makes plausible the claim that the subject's belief that the PB arose under favourable conditions justifies the PB, but not IV - the claim that the fact that the PB arose under favourable conditions justifies the PB. More importantly, Alston faces the familiar dilemma: to say that the fact justifies the belief is unreasonable; but, to say that belief in the fact justifies the belief leads to circularity.

As in the case of the survival argument, the facts Alston adduces make it more probable that the belief is true, but they do not justify the belief. In that the perceptual systems found in extant organisms are a product of evolution and survival, it is not really clear to me that Alston's argument is not a sub-argument of the survival argument. Certainly, these two are both of a larger type which adduce facts that supplement the account of the justification of perceptual beliefs but do not reveal any additional "source of justification".

The distinction between facts making some belief probably true and these same facts justifying the belief, is relevant to
a class of cases that I mention in conclusion. There are beliefs, the content of which guarantees the correctness of the belief. Obvious examples are believing analytic truths. Another, though rather trivial and uninteresting example, is the belief that one has at least one belief.³⁴ Because of the sort of beliefs they are, having them guarantees that they are true; but, a guarantee of the truth of a belief should not be confused with the belief being justified. Of course, if the belief, whenever it occurs, is guaranteed true, there is not much interest in its justification; but, that there is not much interest in its justification underlines the fact that its justification is conceptually distinct from its guaranteed truth. Their distinctness is illustrated by its being possible to correctly believe with no justification that a certain number is the solution to an equation. Despite being unjustified the belief is guaranteed true. Of course, such beliefs can be justified - believing that the belief that p is guaranteed true, for example, justifies the belief that p - but such cases are no more counter-instances to the doxastic thesis than is the survival argument or consistency.

F. Conclusion

I am conscious that there is a remarkable similarity amongst some of the arguments presented in earlier sections (principally B and C) of this chapter. I think that these similar arguments are the many heads of a hydra-argument that lurks

³⁴ The following argument applies to Chisholm's claims in Perceiving, pp.65-66.
somewhere beneath the surface. While I am content to rest my conclusions on the arguments I have presented, I would like to be able to say something about the underlying argument. However, although I feel that I have some understanding of it, I am not confident that I can express it. My comments in the next few pages, then, are an attempt to say something about the fundamentals; though, because I realise the inadequacy of my expression, nothing in the position I have argued for above should be construed as depending on them.

The issue of the justification of perceptual beliefs is an issue of epistemological justification. Epistemology has to do with knowing and believing, two states that have what one might call 'propositional content'. Thus, it seems to me that one might expect epistemological justification to be a relation that holds between states with propositional content.

This is in conformity with some of the points I have already argued (see pages 133-35 and 208-09 above). For example, being giddy is a state without (propositional) content, and I argued that being giddy did not justify my believing my chair is being rotated, though my realising (and thus, believing) that I was giddy did. But there are more interesting cases than this—one that I have mentioned is seeing. Whether or not any seeing is without (propositional) content (that is, whether or not any seeing is "non-epistemic"), there undoubtedly are correct descriptions of seeing where the seeing does not have the propositional content of the description of the seeing. One might see
a kiwi, I argued, but not realise that one is seeing a kiwi - believing only that one sees a scruffy ball of feathers. In such a case, what is epistemically justified by the seeing depends not on the correct description of the state (that one sees a kiwi) but on the propositional content of the state. In these circumstances, the seeing justifies the belief that there is more than one feather in front of one, but not the belief that there are extant flightless birds.

There are also states that may or may not have (propositional) content. Consider being depressed. One can be simply depressed without there being anything in particular that depresses one. However, one can also be depressed in relation to something - for example, I might be depressed that the government is to allow drilling for oil in the Beaufort Sea this summer - which would appear to be a state with (propositional) content. One might feel disinclined to take the 'that' of such a sentence seriously. Perhaps the that-clause indicates not so much propositional content as the cause of my depression. But that does not seem right. The news that the drilling is to go ahead did not cause me to be generally depressed (that is, depressed unrelated to this fact), and thinking about it subsequently does not cause such depression. I can be depressed that the drilling is to go ahead while being generally (that is, non-propositionally) gay and jolly. Thus, being depressed that .... would appear to be a state with propositional content. The important difference between these two types of depression is that
one can justify and be justified whereas the other cannot. Justification just does not apply to non-propositional depression (at least, epistemological justification does not - being non-propositionally depressed might morally justify, for example, doing something to cheer oneself up). On the other hand, my being depressed that the government should allow oil drilling in the Beaufort Sea justifies my being depressed that the government does not place more importance upon the possibility of ecological catastrophies. The same contrast can be drawn between propositional and non-propositional species of other mental states - for example, anger (though in this case it is even more difficult to keep separate moral and epistemological justification) - and in such cases relations of epistemological justification again appear to obtain only between states with propositional content. All such examples, while being consistent with the claim that epistemological justification is only between states with (propositional) content, do not prove that thesis. However, being conformable to it, they do bestow some support on the view that justification is a relation between states with propositional content.

This conclusion fits closely with (if, indeed, it is not a mere reformulation of) my earlier claim that the relata of the justification relation are propositional attitudes. Because states with propositional content all necessitate the holding of some belief, again there is the suggestion that the justification relation properly holds between beliefs (the belief "components" of these states); and thus, that the doxastic thesis is
demanded as the account of the justificatory base of perceptual beliefs by the nature of the justification relation.

I am not sure that this clarifies anything, but it is an attempt to state what I take to be the fundamental thing wrong with the Cartesian doctrine of perception.

In this chapter I have outlined the doxastic thesis and argued that it conforms with the nature of the justification relation whereas the Cartesian doctrine does not. Further, I argued that the thesis does not confront a problem of infinite regress. In the two previous sections I argued that factors that are sometimes held to justify beliefs, in fact, do not, though these factors do supplement the rather spare philosophical account. In particular, in the immediately preceding section I undermined a serious-looking charge as to an inadequacy in the doxastic thesis, and besides showing that the Cartesian doctrine faced exactly comparable questions, I argued that the problems that it faces in these questions are more serious and without apparent solution.

Although the detail is still to be given, the doxastic thesis is shown to be a satisfactory element of an account of perceptual knowledge, and, therefore, something about which one might start to construct an adequate philosophical theory of perception.
VI Armstrong's Theory of Perception

One might wonder if there are not already-existing theories of perception that reject the Cartesian doctrine in favour of the doxastic thesis. The theory that springs instantly to mind is that of D.M. Armstrong. His theory certainly cannot be counted as of one of the traditional "types" of theory, and beliefs do play a fundamentally important role in it. Such facts certainly suggest that it might be the sort of theory that is needed.

Moreover, there is reason to think that Armstrong's writings on perception have had a liberating effect and have made possible the work on perception of such philosophers as Pitcher, Dennett and Rundle - philosophers who abandon the Cartesian doctrine. Indeed, without Armstrong's influence it might never have seemed possible to argue against the Cartesian doctrine. Clearly, then, this work is indebted to him; and thus, it is not amiss to briefly consider what Armstrong's position is vis-a-vis the Cartesian doctrine.

There is evidence that leads one to believe that Armstrong rejects Cartesianism in favour of the doxastic thesis. For example, his claim that:

perception is nothing but the acquiring of knowledge of, or, on occasions, the acquiring of an inclination to believe in, particular facts about the physical world, by means of our senses.¹

¹ For footnote 1 see following page (261).
seems to endorse the doxastic thesis. Of the many places where Armstrong seems to show himself to be opposed to the Cartesian doctrine,\(^2\) I quote just one. He says:

> It seems to me that the Phenomenalist has based his argument on the assumption that our perceptions are our evidence for the assertion of certain physical states of affairs.\(^1\) .... But I think that this is not the true account of the relationship between perceptions and the physical world....

In the footnote to this passage, it is made clear that by 'perceptions are our evidence' Armstrong is referring to the Cartesian doctrine:

> The Phenomenalist .... need not say that the immediate object of perception is a sense-impression. But he will have to say that our immediate evidence for the truth of perceptual statements is our own sense-impressions or perceptual experience. This seems to come to much the same thing.\(^3\)

Armstrong's statement that the phenomenalist's assumption "is not the true account", would lead one to think that he, here, rejects the Cartesian doctrine of perception.

Alongside Armstrong's account of perception as being nothing but the acquisition of beliefs (or inclinations to be-

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\(^1\) Armstrong, Perception, p.105. This quotation and some that follow, express merely the central core of Armstrong's position. He adds to, and qualifies, these claims in presenting what he claims to be a fully adequate account. Such qualifications and additions are irrelevant to my concerns.

\(^2\) See, e.g.: ibid., pp.82,85 and 115, where he sets up Cartesian type positions that he goes on to argue against.

\(^3\) Ibid., p.104
lieve), there is an account of what he generally refers to as 'sense-impressions'. For example, he says:

To suffer sensory illusion is to acquire a false belief or inclination to a false belief in particular propositions about the physical world, by means of our senses.

And, more generally, that:

Our sense-impressions .... are simply our conscious acquirings of impressions of the physical world by means of our senses, that is, they are conscious acquirings of beliefs or inclinations to believe in something about the world. 4

In the terminology used in this work, these claims amount respectively, to claiming that having illusory awareness is acquiring false beliefs (or inclinations to believe) and, more generally, that having awareness is acquiring beliefs (or inclinations to believe).

But in identifying having awareness with acquiring beliefs, the Cartesian doctrine is conflated to the doxastic thesis. If having awareness is acquiring beliefs, then one might reasonably identify the awareness (had) with the belief (acquired) - as Armstrong, indeed, does. 5 This being so, the thesis


5 See, e.g.: ibid., p.89. The last quotation above identifies the awareness itself, rather than having awareness, as belief acquisition. However, this would appear to be a slip on Armstrong's part as he normally identifies having awareness with acquiring beliefs. For example, on the same page he says: "to have a sense-impression .... [is] to have a belief".
that awareness is the justificatory basis of perceptual beliefs is conflated to the thesis that beliefs are the justificatory basis of perceptual beliefs. Indeed, Armstrong seems to recognise this when he says:

Our sense-impressions must not be conceived of as evidence for our non-inferential beliefs about the current state of our body and environment, for they are themselves the acquirings of these beliefs .... But sense-impressions can be truly said to be the foundation of all our further perceptual beliefs about the environment.  

The same position seems to be reflected in his claim that:

To take them [sense-impressions] as the evidence for our immediate beliefs or inclinations to believe in something about the world is to suffer from 'metaphysical double vision', it is to take the same thing twice over.  

One should be quite clear which of two possible positions Armstrong accepts. Identifying having awareness and acquiring beliefs conflates the Cartesian doctrine to the doxastic thesis; but it is possible to make the identification while either rejecting or accepting the Cartesian doctrine. To make the identification and accept both the doxastic thesis and the Cartesian doctrine is to maintain that the beliefs acquired in having awareness are justificatorily basic - in that they justify, but are not justified by, other perceptual beliefs. On the other hand, to make the identification, accept the doxastic thesis,

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6 Armstrong, Materialist, p.237.
7 Armstrong, Perception, p.128.
and yet reject the Cartesian doctrine is to maintain that the beliefs acquired in having awareness are not (always) justificatory basic. The above quotation from Armstrong's *A Materialist Theory of the Mind* makes it quite clear that, of the two possible alternative, he accepts the one that does not involve the rejection of the Cartesian doctrine. (The fact that the quotation is from *A Materialist Theory of the Mind* is significant. The chapters on perception in this book are a distillate of his earlier *Perception and the Physical World* and *Bodily Sensations*. Moreover, *A Materialist Theory of the Mind* contains an important change from the two earlier books, on a matter that is relevant here).  

Armstrong's position is not in conflict with the sort of points I argued against the Cartesian doctrine in Chapter V - because he identifies awareness with beliefs, awareness can be a relatum of the justification relation. However, it is in conflict with the sorts of points I argued against the Cartesian doctrine in Chapter IV. There, I argued principally, that perception without awareness is a problem for the doctrine, and that even in some cases where there is awareness it is not justificatorily basic. The previous quotation from *A Materialist Theory of the Mind* makes it clear that Armstrong's position is in conflict with the latter claim and his subsequent comment that:

> it follows that .... there must be sense-impressions

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if there is perception.\(^9\)

makes it clear that his position conflicts with the former claim also.

Although the above quotation seems to clearly deny the possibility of perception without awareness, this is difficult to reconcile with his having accepted, just a few pages earlier, that perception without awareness (which he calls 'unconscious perception') does occur.\(^10\) Perhaps what I have called 'having awareness' is not the same thing as what Armstrong calls 'having sense-impressions'. However, the evidence suggests that this is not the case. The expression 'sense-impression' is introduced in *Perception and the Physical World* in terms that seem to apply equally to 'awareness'; the discussion in the section of that book entitled "What are the immediate objects of awareness in perception?" is largely conducted in terms of whether sense-impressions are the immediate objects of perception; and later, having a sense-impression is identified with conscious acquiring of belief.\(^11\) If all perception involves having sense-impressions, which in turn involve conscious acquisition of beliefs, unconscious perception would seem impossible. Finally, in *A Materialist Theory of the Mind*, Armstrong identifies a person's visual

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\(^9\) Ibid., p.237.

\(^10\) Ibid., pp.231-32.

field with the totality of that person's visual sense-impressions, and in stating that the visual field is merely a species of *phenomenal* field, suggests that it is not incorrect to identify having awareness and having sense-impressions.\(^{12}\)

There seems, then, little alternative to allowing that Armstrong's position is in conflict with the conclusions arrived at in Chapter IV above. If the conclusions of that earlier chapter stand, one seems forced to conclude that Armstrong was mistaken in accepting the Cartesian doctrine. At most, it would seem, he should have identified having awareness with acquiring beliefs, accepted the doxastic thesis, and not chosen to also embrace the Cartesian doctrine.

It is because Armstrong appears to accept the Cartesian doctrine (or at least, is not equivocal in rejecting it), while at the same time producing an account of perception that seems to be closely in accord with the rejection of the doctrine, that I have largely avoided mentioning him in the above chapters. However, it is clear that most of Armstrong's account can be married to the rejection of the Cartesian doctrine. There remains the question of whether it is correct to identify having awareness with acquiring beliefs. Because to make the identification is to assimilate the Cartesian doctrine to the doxastic thesis, and because I have argued *against* the former and *for* the latter, the issue is, obviously, pressing for me.

First, one should note that there are times when Armstrong's commitment to the identification does not seem to be very securely based. At one point, he explicitly considers the suggestion that although having awareness and acquiring beliefs may always be found together there is, nonetheless, a conceptual distinction between them. He lists the alternatives as:

(a) the sense-impression is a mere accompaniment of the belief or inclination to believe that we are perceiving some state of affairs; (b) the sense-impression is the accompaniment and the cause of the belief or inclination to believe we are perceiving some state of affairs; (c) the sense-impression is the accompaniment, cause and finally the basis or ground of our belief or inclination to believe we are perceiving some state of affairs.  

In the rest of the section he goes on to argue against (c) which, of course, is the Cartesian doctrine (where having awareness is not construed as acquiring beliefs). I, of course, agree with Armstrong in rejecting (c). Of the other alternatives, he says:

Now, if positions (a) or (b) are adopted, I do not see how they are to be refuted. (At the same time I do not believe that there are such accompaniments or causes of our beliefs or inclinations to believe we are perceiving). But if either position is true, the role of sense-impressions in perception is not logically important. We could pay such sense-impressions our phenomenological respects, and pass them by. But I take it that, in the original objection, sense-impressions are thought of as the basis or ground or evidence for our beliefs or inclinations to believe we are perceiving.

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13 Ibid., p.89.
14 See also: ibid., pp.114-117.
15 Ibid., pp.89-90
Two points. First, Armstrong concedes too much in thinking that there is no way of refuting (b). As I have argued (see pages 166-176 above), there are facts which show that (b) is not correct. Second, Armstrong dismisses (a) and (b) because he thinks they would not be acceptable to philosophers who might raise this objection to his account of awareness. However, this does not satisfy me, because I believe that (a) is a real (and, indeed, the correct) alternative. There is nothing in his comments here to suggest why having sense-impressions should be thought to be identical to acquiring beliefs, rather than the former being a mere phenomenological accompaniment to the latter. Further, his interesting and convincing arguments elsewhere\(^\text{16}\) that sense-impressions share many of their unusual features with beliefs, is not sufficient to establish the identity of these two items.

Although Armstrong has little to say in support of the identification as opposed to the constant conjunction of these two items, there are, I believe, points which tip the scales definitely against the identification. First, Armstrong's account is that perception is the acquisition of beliefs or inclinations to believe. Because his account of having awareness is that it, also, is the acquisition of beliefs or inclinations to believe, one seems to be led to the conclusion that perceiving and having awareness are identical, or at least that the latter is a species of the former. This is a conclusion which Armstrong

\(^{16}\) See: ibid., pp.127-32.
in fact, embraces. He says:

When we speak of sense-impressions we are speaking of our perceptions, veridical or illusory, but are confining ourselves to our immediate perceptions, the true or false beliefs that are acquired without any tincture of inference.¹⁷

But this just seems wrong. Having awareness is conceptually distinct from perceiving, not a type of perceiving.

Moreover, unless there is some way of distinguishing having awareness from perception that is not having awareness, an account of perception without awareness is not possible. In fact, the mediate/immediate distinction is what, according to Armstrong, divides perception not identical to awareness from that which is. His account of this distinction is based on the notion of inference (though he sometimes uses terms such as 'suggestion' which he finds preferable because unlike 'inference' they connote neither validity nor consciousness of the inference). Essentially, a perception is mediate if the belief acquired in it is inferred from some other belief, and immediate otherwise. Putting aside any difficulties that there might be with this notion of inference, one consequence is immediately obvious: still no account of perception without awareness is possible. Perception without awareness would have to be mediate perception without immediate perception. But this is impossible. Mediate perception - the acquisition of an inferred belief - can only occur where immediate perception also occurs - that is, where

¹⁷ Armstrong, Materialist, p.236.
some inferred belief is acquired that can be the basic belief in the inference. Thus, even given this basis for distinguishing having awareness from all other perception, still no account of perception without awareness is possible.

Further, some of the most plausible cases of perception without awareness are cases where the beliefs acquired are beliefs that would not appear to be inferred. For example, the movement at the edge of one's visual field (what Armstrong would call 'one's field of view'\(^\text{18}\)) causes perception without any awareness, and is a case where the belief acquired - that there is movement - appears not to be inferred from any other perceptual belief. That is, the cases which are the most plausible candidates for perception without awareness are those where Armstrong is committed to maintaining that perceiving is having awareness, and vice versa.

Similar comments would apply to an attempt to base the differentiation on the issue of whether or not the beliefs acquired are conscious. Armstrong states:

> in view of the fact that we have accepted the possibility of unconscious perception, we must now add to this analysis [of having sense-impressions] by making it a matter of conscious belief or inclination to believe that we are immediately perceiving something. For in Chapter 4 we refused to admit the possibility of having sense-impressions that we were not conscious of having.\(^\text{19}\)

\(^{18}\) Ibid., pp. 236-37

\(^{19}\) Armstrong, *Perception*, p.128.
But, because perception without awareness can issue in conscious belief, and indeed, a conscious belief that would appear to be uninferred (for example, the proprioceptive belief that I am moving), the distinction between beliefs of which one is conscious and of which one is not, does not provide a satisfactory basis for the distinction between perception and awareness.

Thus, identifying having awareness with acquiring beliefs has the serious disadvantage that it seems to leave one with no basis for distinguishing awareness from perception; and thus, means that one is in no position to give an account of perception without awareness. This is one reason against making the identification.

Lastly, identifying having awareness with acquiring beliefs does not satisfactorily explain the "switches" in awareness that one experiences when one looks at "ambiguous" or figure-ground reversing pictures. For example, in the case of the Boring "My Wife and My Mother-in-law" drawing, I have argued that one's awareness switches as one looks at it and sees it first as the young woman and then as the old hag (see pages 170-172 above). If Armstrong's analysis of awareness is correct, there should be a corresponding switch amongst one's beliefs or inclinations to believe.

There quite possibly is a switch in beliefs on the first occasion when one undergoes an awareness switch looking at such a picture: one might, for example, switch from believing that it
is solely a picture of a young woman to believing that it is an ambiguous picture. However, once one has undergone the switch and knows that it can be seen in more than one way, it is not clear that any belief switch accompanies subsequent switches in awareness. Having in the past, seen the picture both ways, whichever way I currently see it I:

1) believe that it is a picture of a young woman,
2) believe that it is a picture of an old hag,
3) have an inclination to believe it is solely a picture of a young woman,
4) have an inclination to believe it is solely a picture of an old hag,
5) believe that it is an "ambiguous" picture.

I have both the inclinations to believe mentioned in 3) and 4) because the following two counter-factual conditionals are true of me:

3.1) I would believe that it is solely a picture of a young woman if I did not believe that it is also a picture of an old hag,

4.1) I would believe that it is solely a picture of an old hag, if I did not believe that it is also a picture of a young woman.

Note that there are other counter-factuals that might or might not be true of me, for example:

3.2) I would believe that it is solely a picture of a young woman if I did not believe that it is an ambiguous picture.

and, that this counter-factual corresponds to the inclination to believe mentioned in 3). Thus, so long as 3.1) and 4.1) are true of me, the inclinations to believe mentioned in 3) and 4)
are true of me, regardless of what other similar counter-factuals might come to be true, or cease to be true of me. I am at a loss to see what belief or inclination to believe switch accompanies the awareness switch, and if there is none, this suggests that having awareness should not be identified with acquiring beliefs.

It might be thought that the sorts of beliefs and inclinations to believe I have mentioned above are not satisfactory in that they are not uninferred. Perhaps the uninferred beliefs relevant to the Boring picture are beliefs about the lines and shapes of black and white patches that make up the picture. It is not clear to me that such an objection would be made by Armstrong because he recognizes that "There is no necessity for our powers of immediate perception to remain static",\(^\text{20}\) and I see no reason why one should not acquire such beliefs without the role of "suggestion". However, in case this be thought an escape route, I make three points. First, although the objection can be made regarding the beliefs in question, it is not so clear that it can be made of the inclinations to believe: does the notion of an inferred inclination to believe make sense? Second, maintaining that these are not the beliefs of immediate perception flies in the face of the conclusions reached earlier about how awareness should be described in such cases (see pages 187-196 above). Third, 1) through 5) above seem to me to pretty well exhaust the relevant conscious beliefs and inclinations to

\(^{20}\) Ibid., pp.21-22.
believe (if indeed, the conscious/unconscious distinction is applicable to inclinations to believe) that I have when I view Boring's picture; and thus, at very least, the identification of awareness with conscious beliefs has to be abandoned.

I draw two conclusions. First, although Armstrong's writings on perception have made visible the important possibility of theories of perception that abandon the Cartesian doctrine, he, himself, did not reject the Cartesian assumption completely. I hope that the arguments in these pages have shown that such a rejection is needed and that an attempt can now be made to build, with materials largely supplied by Armstrong, a theory of perception based not around the Cartesian doctrine but rather round the doxastic thesis.

The second conclusion is that it is probably wrong to identify having awareness with acquiring beliefs. (Although I do not, by this, mean to imply that some reduction of awareness is not possible that will allow Armstrong's more general materialist programme to go ahead). Making the identification is one way in which Armstrong's account was more adventuresome than anything offered here. I offer no account of awareness and thus, can give no account of perception without awareness (a charge that I have made against Armstrong). Although this would undoubtedly be a defect of any complete work, it is not centrally important to my endeavour to give an analysis of awareness, when my main purpose is to argue that that concept should play no essential role in a philosophical theory of perception. Abandoning
the Cartesian doctrine releases one from the pressure of providing an analysis of awareness. If, as I have argued, Armstrong's analysis has to be abandoned along with a rejection of the Cartesian doctrine. These changes have little impact on the overall nature of Armstrong's account, but they do, I believe, make it more satisfactory.
Abandoning the Cartesian Doctrine and Progress in Epistemology

Abandoning the Cartesian doctrine is achieving, in perception, a change that has occurred in other areas of epistemology. I conclude by briefly indicating the nature of this change. My thumbnail sketches of various philosophical positions are crude simplifications — but that is all that is necessary for my purposes.

John Locke was a proponent of the former positions on knowledge, memory and perception and so I hang all my comments on him. Locke should not, for this reason, be construed as the villian of the piece — he is merely a convenient representative.

Locke's account of knowledge is that:

Knowledge is the Perception of the Agreement or Disagreement of two Ideas. Knowledge then seems to me to be nothing but the perception of the connection and agreement, or disagreement and repugnancy, of any of our ideas. In this it alone consists. Where this perception is, there is knowledge, and where it is not there, though we may fancy, guess, or believe, yet we always come short of knowledge.

The nature of this "perception" is explained a little when Locke says:

sometimes the mind perceives the agreement or disagreement of two ideas immediately by themselves, without the intervention of any other; and this I think we may call intuitive knowledge. For in this the mind is at no pains of proving or examining, but perceives the truth as the eye doth light, only by being directed towards it.¹

¹ Locke, Essay, respectively, Book 4, Chapter I, Section 2 and Book 4, Chapter II, Section 1.
Because intuitive knowledge is, according to Locke, involved in all other knowledge, the above account is fundamentally Locke's account of what it is to know something.

Although Locke's use of 'idea' is the basis for some lack of clarity in his epistemology, he seems to have thought of ideas primarily as mental entities, of which one is conscious when one thinks, remembers, perceives, etc. Because 'idea' has other uses than this, one would normally refer to such entities today by using a term such as 'mental image'. That Locke had such ideas in mind in the discussion of knowledge is suggested by the examples he gives: for example, the "disagreement" of the ideas of black and white. Whatever "perceiving" and "agreement" mean in this context, the important point is that knowing essentially involves having mental images. Having mental images is an indispensible part of Locke's philosophical theory of knowledge.

Locke's account of memory shares this same feature. He says that memory:

is an ability in the mind when it will to revive them [ideas] again, and as it were to paint them anew on itself.

Thus, remembering that black is not white would appear to con-

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2 See, for example: ibid., Book One, Chapter I, Section 8.

3 The same is true of, for example, Hume's account of knowledge. See: Hume, Treatise, Book I, Part III, Section 1.

4 Locke, Essay, Book 2, Chapter X, Section 2.
sist, according to Locke's account, in reviving the ideas of black and white and "perceiving" their "disagreement" (unless there is an idea of the disagreement, in which case, remembering could consist merely in reviving the idea of the "disagreement" of the ideas of black and white). Again then, mental images are an indispensible part of Locke's account of memory.\(^5\)

But, since the time of Locke there has been a marked change in philosophical theories about knowledge and memory. Current today are philosophical accounts of what it means to say that somebody knows or remembers something, that make no mention of mental images. The justified-true-belief analysis of knowledge, and the learnt-and-not-forgotten analyses of memory are examples. The change from theories of memory that essentially involve mental images to those that do not is recent enough that their elimination from philosophical theories is still argued for, and at least commented on, by authors writing on the topic.\(^6\)

Although they are allowed no role in contemporary philosophical accounts, it should not be thought that the existence of such mental entities is denied. Most authors concede that much

\(^5\) Again, the same is true of Hume's account of memory. See: Hume, Treatise, Book I, Part III, Section V. The view is to be found as recently as Russell's writing on memory. See, e.g.: Bertrand Russell, The Analysis of Mind, Library of Philosophy (London: George Allen & Unwin, Ltd., 1921), pp.157-62.

of the remembering of which one is conscious (those cases where one "searches one's memory", as opposed to remembering automatically and never thinking about it) is accompanied by having mental images. Some even hold that mental images can be a useful aide-mémoire, although others claim that memory images are based on (causally, and justificatorily?) what is remembered. But whether or not they occur, they are held not to be the justificatory base for memory beliefs; and thus, it is maintained that they play no role in the philosophical account of memory. Having memory images is a striking phenomenological element of the psychology of many of the most obvious cases of remembering; but it is an element that is irrelevant in the philosophical account.

The transition from accounts that essentially involve mental images to accounts that do not, is a change that is pertinent to the whole area of epistemology. The abandonment of the Cartesian doctrine of perception in favour of the doxastic thesis is the achievement of this change in the last remaining main area of epistemology: perception. The having of awareness is just the having of (at least a sub-class) of what I have called in these last few pages 'mental images'.

Although I am not as sanguine as some about the propriety of talk of mental images (talk of memory images seems to be an extended metaphor that I am not sure I find fully intelligible), I would not deny that much perception is accompanied by awareness. But I do claim that awareness is an accompaniment to perception and not an integral part of it. Hirst might be correct
in claiming that "complex and characteristic presentational experiences varying in sensuous character according to the sense organ stimulated" is "the overwhelming fact about [much] perceiving" (see page 83 above); however, one should (in Armstrong's words - see page 268 above - but not his opinion?) "pay such sense-impressions our phenomenological respects and pass them by".
Appendix: Inclinations to Believe

In cases of illusory perception where the perceiver is not deluded, some philosophers have been tempted to say that, although he is not caused to have a false belief, the perceiver has an inclination to believe something that is false. Most notably, Armstrong, in Perception and the Physical World has identified sensory illusion that does not delude with having an inclination to believe something that is false.¹

It is necessary to give some account of 'inclination to believe' before the notion can be accepted as fully satisfactory. The necessity for providing such an account is especially incumbent upon someone such as Armstrong, who maintains that beliefs are dispositions – for the notion of an inclination to have a disposition might appear problematic. Fortunately, Armstrong has given an analysis of inclinations to believe.² The essence of the account is that if A has an inclination to believe Y, then there is some X such that if A did not know or believe X, then A would believe Y.

It has been objected that this account of inclinations to believe is too liberal. It is said that for any Y there is some X such that if one did not believe X one would believe Y. If

² Armstrong, Perception, pp.86-87.
this were true it would mean that for any Y one would have an
inclination to believe Y. This tremendous proliferation of in-
clinations to believe would appear to be problematic - especi-
ally for Armstrong who identifies sensory illusions that do not
delude with inclinations to believe.

But is this charge correct? Consider an example. The
criticism claims that, contrary to what in fact is the case, Arm-
strong's account entails that I have an inclination to believe
that my office is on fire, Y, because were it not for my beliefs,
X, that there are no flames or smoke in the room, that the fire
alarm bells are not ringing, etc., I would believe that my of-

cine is on fire (Y). But this claim is simply false. My fail-
ing to believe X (that there are no flames and smoke in the room,
that the fire alarm bells are not ringing, etc.), while it puts
me in no position to rebut the claim that there is a fire in my
office, certainly does not ensure that I do believe that there
is a fire in my office. What seems to have gone wrong in this
supposed counter-example is that it overlooks the fact that my
failing to believe X (that there are no flames and smoke in the
room, etc.), does not ensure that I believe not-X (that there are
flames and smoke in the room, etc.). Usually, only if I believe
not-X (that there are flames and smoke in the room, etc.), or
have some similar beliefs, will I believe that the office is on
fire. Merely failing to have beliefs like X does not ensure that
I believe that the office is on fire. Thus, it is not true that
were it not for my beliefs X (that there are no flames and smoke
in the room, etc.), I would believe Y (that my office is on fire).
Thus, on Armstrong's analysis - as is, in fact, the case - I do not have an inclination to believe that my office is on fire. (See also page 266 above).

The important point to be gleaned from this putative counter-example is that saying of someone that were it not for his belief X he would believe Y, is to say something of a contingent nature. No matter what the logical relations between X and Y, the truth of the counter-factual assertion is not ensured - because, as is commonly acknowledged, one does not necessarily believe all the consequences of the beliefs one holds. Thus, even if the negation of X entails Y, one could still believe not-X and fail to believe Y. (This means that the various attempts to patch up the supposed counter-example will fail to make it successful against Armstrong's analysis. For instance, one might assert that for every P, the individual concerned either believes P or not-P. While this would ensure that the individual believed not-X whenever he failed to believe X, it is a claim that is unlikely to be true of anybody. However, even were the individual to believe not-X, and not-X - given some general principles such as that, for example, there is no fire without smoke - entails Y, one cannot conclude that the individual believes Y. Further, one might assert that the individual believes that for every P he either believes P or not-P. While this is - perhaps marginally - more likely to be true of someone it does not even ensure that the person believes not-X whenever he fails to believe X). Thus, contrary to what the objection claims, there can never be a priori reasons for holding that, as they are understood in the Armstrongian analysis, for any Y, any person has an inclination to believe Y.
These considerations totally discredit such cases as possible counter-examples. However, there are additional points that should be made about inclinations to believe.

The supposed counter-example is intended to undermine the analysis by showing how there is a very great proliferation of inclinations to believe: in particular, it is claimed that, for any P, any person will have an inclination to believe P. It is not clear to me that even this tremendous proliferation of inclinations to believe would be problematic. Earlier I suggested that it is a difficulty for Armstrong because he identifies sensory illusions that do not delude with inclinations to believe. However, not even this is obvious when the matter is examined more closely. Armstrong is committed to the thesis that all sensory illusions that do not delude are inclinations to believe, but he is not committed to the converse. Because sensory illusions that do not delude might be but a sub-class of inclinations to believe, a proliferation of inclinations to believe would not necessarily result in a proliferation of sensory illusions that do not delude. Of course, there remains a problem which does confront Armstrong. If he maintains that sensory illusions that do not delude are but a sub-class of inclinations to believe, then to give an adequate account of the former he has to specify a differentia for this sub-class. This is no mean problem and, as far as I know, it is one to which Armstrong has never addressed himself. The problem only arises for Arm-
strong because he attempts to give an analysis of sense-impressions (or awareness). Because I have not even attempted to give an analysis of awareness, I, of course, escape the problem (but at some cost of completeness to my overall position - see page 274 above). Although I am sympathetic to the claim that one has an inclination to believe whenever one has sensory illusion that does not delude, I do not identify these two. Here, my concern is merely to demonstrate that the notion of an inclination to believe is satisfactory, and that the Armstrongian analysis of it is adequate. That end can be achieved without specifying the differentia of sub-classes of inclinations to believe.

Even if there were this tremendous proliferation of inclinations to believe, I cannot see that it presents any real problems. Although one does not normally have cause to think about them, it is nevertheless true, surely, that one does have very many inclinations to believe. Everything that I realise to be evidence for some conclusion provides me with an inclination to believe that conclusion, even though other pieces of evidence may provide me with inclinations to believe the exact opposite - and, this is true regardless of how I weigh these items of evidence in coming to believe or disbelieve, on the basis of all the evidence at my disposal, the conclusion.

One might think that a problem arises in that the body hardly seems capable of containing all the mechanisms needed to mediate even this many inclinations to believe. But, as Quine has pointed out for dispositions, each different inclination to
believe does not require a totally discrete mechanism in the body.\(^3\) Two different mechanisms (mediating two different inclinations to believe) may have elements of their mechanisms in common. Thus, an enormous number of inclinations to believe could be mediated in the body by far fewer physical elements — and so the body is likely able to contain all the necessary mechanisms for vastly many inclinations to believe.

Because of these considerations I see no reason to think that the concept of an inclination to believe is problematic, nor do I see any reason to object to the Armstrongian analysis of them. However, one might, perhaps, do without them even so. There are two ways in which one could use beliefs simpliciter to perform all the roles played by inclinations to believe. The first is to describe cases such as those where, for example, I know that the one dandelion appears as two because I am pressing the corner of my eyeball, as a case where I have two conflicting beliefs of different strengths. But perhaps it is too cavalier with the truth that a person can believe two things that are contradictory, to maintain that in the case mentioned I have (in some degree) the belief that there are two dandelions before me and (in some degree) the belief that there is only one dandelion.

Finally, there is a second alternative available, which might seem less tortuous than the recourse to inclinations to

\(^3\) Quine, _Roots_, p.15.
believe. This is to say that in cases where an illusory perception does not delude, the belief the perceiver gains is counterfactual in nature. Thus, for example, pressing my eyeball and seeing one dandelion as two, I gain the belief that if I did not believe (know) that I am pressing my eyeball, I would believe that there are two dandelions before me. Of course, normally, in situations where a perceiver is subject to an illusion that is not deceptive, such counter-factual beliefs will not consciously occur to the perceiver: however, as I have argued elsewhere in this work, this is not sufficient reason for denying their existence. It might be objected, on the basis of a general thesis about the sorts of beliefs that are able to be attributed to animals, that while animals (animals in general, or some specific sub-class of animals) are capable of having inclinations to believe, they are not capable of having these sort of counter-factual beliefs. It is not clear to me that one is prepared to ascribe sensory illusions that do not delude (which are what call for inclinations to believe in the first place) to animals to which one is not prepared to attribute counter-factual beliefs. However, even if the objection stands, it is still true that for humans (at least), if inclinations to believe should be thought to be unsatisfactory for some reason, they could be eliminated wherever they occur and replaced with suitable beliefs of a counter-factual nature.
Appendix: Thresholds

The concept of threshold has had a chequered career in psychology. After coming to some prominence in the 1860s with the work of Fechner, it grew to have a relatively established position in psychophysics. More recently, its importance has been eclipsed by the increased use of decision theory in psychology - a development which allows psychophysical problems to be tackled without the concept. The eclipse was total when, in the 1960s, at least one author suggested that there is no such thing as, for example, a sensory threshold.\(^1\) In this appendix I argue that there are thresholds.

It is, perhaps, necessary to explicate a little the concept of thresholds - and, for this purpose, I consider pain, a case which is less controversial than those to be discussed later. It is well-known that if a stimulus which is non-painful, or even pleasant, is increased in magnitude along some dimension it can become painful. It would be painful to be in the balmy caribbean sea if its temperature were increased to boiling point. Having a child stand on one's toe is not painful, but it might become painful if a 300 lb. adult is substituted for the child, or if the child remains standing there for the duration of the

Punch and Judy show. Thus, one has the concept of a point along some dimension above which a stimulus is painful and below which it is not. This point is a threshold - in the case at hand, the threshold for pain. If one considers, for example, temperature (of water in which the right hand is held for 5 minutes) as the dimension of variation, then, although it might be difficult to specify the exact point at which the threshold is situated (actually, of course, in this case there are two thresholds - one where the water becomes painfully hot, the other where it becomes painfully cold), it is easy to specify certain positions on either side of the threshold as either painful or non-painful.

Here, I am mainly interested in the occurrence of thresholds in perception. I chose the example of pain to illustrate what is meant by the word 'threshold' because, although one might feel inclined to say that one perceives pain, it seems to stand apart from the other types of perception. It is a matter of debate whether "pain perception" is of a kind with visual, auditory, etc., perception. Having played its illustrative role I now set aside consideration of the pain threshold.

An important logical point about the concept of threshold is that thresholds are relative to given effects. Thus, in any discussion one must specify the effect whose threshold is under consideration. Most obvious, in the area of my interest is, of course, the point at which something is first perceived. Thus, for example, if the dimension of variation is the intensity of a light flash of given duration, the threshold is the intensity
above which the light is perceived and below which it is not. Besides that for perception, however, there is also the threshold for awareness. Thus, to use the above example, there is an intensity at which one first has awareness of the light flash. The concept of the threshold for perception is, of course, quite distinct from the concept of the threshold of awareness, and even if it is suspected that their values are the same in every case, this is an empirical question which must not be prejudged.

It is certainly possible that alongside the thresholds of perception and awareness other thresholds to do with perception could be specified. For example, one could define thresholds for various types of neurological excitation in different parts of the neurological system. However, the only other threshold that I am aware of having been referred to sufficiently often to require me to examine it here is the so-called, 'sensory threshold'.² I do not know of anyone who has ever contrasted the sensory threshold with those I have mentioned above - nor am I aware of anyone who has clearly specified what is meant by 'the sensory threshold'. One might imagine that this threshold is the point at which one first begins to have sensations - that is, the threshold of what I have called 'awareness' or 'consciousness'. However, the literature describing attempts to determine the value of the sensory threshold under various conditions displays no evidence that care is taken to ensure that it is the threshold of awareness that is being determined - and, from the

literature, it would seem that what is being measured is the value of the threshold of perception.³

Traditionally, the issue of thresholds has been closely associated with attempts to plot the correlation of changes in some stimulus magnitude against changes in some sensory magnitude. Thus, some of the discussion of thresholds to which I refer is conducted via a discussion of features of the lines plotting such a correlation on a graph. Consider the possibility of drawing such graphs, first, with respect to the threshold of perception. There simply is no comparative concept, let alone a scalar concept, that is relevant here. One merely either perceives or does not perceive: one does not perceive strongly or weakly. The only sense in which one perceives more or less is that in which one perceives more or less of some thing (for example, some thing is more or less hidden from view) - and that is not at all relevant here. Thus, in this case, one can only draw graphs in some redundant sense: that is, graphs such as that in Figure 5, where perception and non-perception are arbi-

Figure 5.

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Threshold

Increase in specified stimulus magnitude

³ Blomberg also, comes to this conclusion. See: Jaakko Blomberg "Psychophysics, Sensation and Information" Ajatus 33 (1971): 119.
trarily assigned different positions.

In the case of the threshold of awareness it is not as clear-cut as this. There certainly are comparative and scalar concepts associated with awareness and consciousness, but it is not obvious that any of these are entirely appropriate. One certainly talks of being more or less aware of something—for example, the car mechanic is more aware than the novice of the consequences of not changing the engine oil regularly. But here, 'aware' is being used in the knowledge sense: the mechanic and the novice do not differ in the awareness they have, or might have. Similar comments apply to the expression 'levels of consciousness', as in the first aid manual's instructions to notice the patient's level of consciousness. Presumably this is an instruction to note something such as the patient's responsiveness—whether he is perceiving; whether, and to what extent, he reacts to what he perceives; etc.—rather than an instruction to note something about his awareness, to which the patient alone has access. On the other hand, there is some temptation to say that the visual sensation (awareness) one has when the nearby car's headlights shine in one's eyes is greater than that which one has on seeing a candle flame at 100 yards. Even in such a case one can, of course, maintain that the sensations themselves are no greater or less, but that the difference lies in what the sensation (awareness) is of: in one case, brightness

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4 See pages 74-75 above.
(or something that is bright), in the other case, dimness (or something that is dim). However, this is an issue I will not attempt to settle here. Most of the authors discussed in this appendix assume that awareness and sensation can be ranked on some scalar magnitude(s) (as, for example, in Figures 6 and 7);

Figure 6.

[Graph showing a linear relationship between stimulus magnitude and specified effect, with threshold indicated.]

Figure 7.

[Graph showing a step function relating stimulus magnitude and specified effect, with threshold indicated.]

5 Natsoulas briefly discusses the idea that sensations are not susceptible of scalar comparison. See: Thomas Natsoulas, "What Are Perceptual Reports About?" Psychological Bulletin 67 (1967) p.261.
thus, in the remainder of the appendix I adopt this as a working hypothesis in order to examine what these authors say (although I believe that, in fact, the assumption is incorrect).

Having developed the notion of plotting variation in stimulus magnitude against variation in some dimension of awareness, one is in a position to consider some of the remarks Corso makes about thresholds. His comments reflect a very serious muddling of two issues that should be kept distinct. For instance, he says:

Fechner's concept of threshold gave rise to what may currently be called the sensory continuity-noncontinuity issue. Does sensory excitation increase in a smooth and continuous manner or is there an abrupt change from no sensation to sensation .... as the value of the physical stimulus is increased continuously along some specified dimension?6

It is difficult to know what sense to make of the question whether the change from no sensation to sensation is abrupt. One might say that a change is abrupt if it is reflected on a graph by a discontinuity of the graph's line or a radical increase or decrease in slope (or curve), but to ask this question about the beginning-point of the plot is senseless - and, of course, the point of transition from no sensation to sensation is the beginning point of the plot. Obviously this is an abrupt change - the beginning-point of the plot on any graph marks an abrupt change.

change - and, to have even asked whether it is abrupt displays some misunderstanding on Corso's part. This conclusion is reinforced by noticing that Corso presents smooth and continuous increase in sensory excitation as an alternative to an abrupt change from no sensation to sensation. But, of course, the abrupt change from no sensation to sensation is equally consistent with a smooth and continuous increase thereafter as it is with a non-smooth and discontinuous increase thereafter (as can be seen by a comparison of Figures 6 and 7). In saying what he does, Corso confuses the issue of the smoothness of the plot with the question of whether the plot has a lower end-point. Once this confusion is removed, one possible reason for thinking that it is an empirical matter whether there are sensory thresholds is removed. Whether the plot of such a graph is continuous or discontinuous is, indeed, a factual question; but it is distinct from the question of whether there is a lower end-point to the plot. That there is an end-point to such a plot (that is, that there is a sensory threshold) is not an empirical matter at all, but the other features of the plot are a matter for empirical investigation.

It has been suggested that detection theory is relevant to the question of the existence of a sensory threshold. Thus, Swets, beginning to sum up an article in which he argues that several theories postulating a sensory threshold fare badly when confronted by the data he considers, says: "The three sets of data [considered] are in agreement with detection theory, a
theory that denies the existence of a sensory threshold".\textsuperscript{7} What is wrong with this is that detection theory, rather than \textit{denying} the existence of a sensory threshold, merely \textit{fails to assert} that there is a sensory threshold. Swets' mistake, here, is analogous to saying that because the ideal gas laws do not assert that there are liquification-temperatures for gases, they therefore deny the existence of such liquification-temperatures. Corso, on the other hand, assesses the situation correctly when he says that "The relevance of the theory of signal detection.... is that the variables of the theory do not contain a reference to threshold"\textsuperscript{8} - and of course, a theory that does not contain a reference to thresholds can hardly deny that there are thresholds. Others of Swets' assertions appear to conform to this more limited claim: for instance, his conclusion that ".... even if the low threshold proposed by Tanner, Birdsall and me [Swets] did exist, and were measurable, it would not restrict the application of detection theory"\textsuperscript{9} seems to recognise that detection theory is not inconsistent with (that is, does not deny) the existence of a sensory threshold. While the success of detection theory may make the concept of a threshold redundant for the practical purposes of the psychologist, it does not prove that there is no such thing as a sensory threshold.

\textsuperscript{7} Swets, "Sensory Threshold?" p.175.
\textsuperscript{8} Corso, "Threshold Concept", p.367.
\textsuperscript{9} Swets, "Sensory Threshold?", p.176.
However, there are more positive things that can be said. In particular, there are conceptual points that indicate that, not merely as a matter of contingent fact, but necessarily there are thresholds. Earlier, I remarked that when one talks about a threshold, some effect must be specified: thus, one has the threshold for perception, the threshold at which awareness first occurs, and so on. Now, in any real case, the threshold will need to be specified more narrowly than this because, even if there were an energy scale commonly applicable to all perceptual situations (which, I take it, there is not), it is not satisfactory to assume a priori that the threshold for the perception of different things (for example, red and green lights) have the same value on the sensory scale. Consider an example: say, perception of the flash of light from a given light source that shines for one second. This description of the effect ensures that there is a threshold for perception. The threshold has to be at or above zero on the energy scale (illumination, in this case), because below zero on the energy scale there is no flash of light, and so no possibility that the effect – perception of the flash of light from the given source – is obtained. Where there is no flash of light, no matter what the (potential) perceiver might believe himself to have perceived, he has not perceived a flash of light from the given source. This result can be generalised: however the description 'the threshold for perception of ....' is completed with some definite description of an actual object (situation, event, etc.), the same sort of external reference is achieved, and this ensures that the effect
will never be present at zero on the appropriate energy scale.

This result applies to all other thresholds. Clearly it applies to the threshold of awareness of a flash from a given light source, and to the threshold for any type of neurological excitation that is specified. There is one way in which the awareness and pain thresholds might be thought to be different. One can have awareness as of, for example, tongues of fire, without there being any tongues of fire; and one can have burning pains on the scalp without there being any burning on the scalp, or any other (discernible) physical cause. In such cases, there seems to be a lack of the right sort of external reference to ensure that there is a threshold. While this is true, it is not relevant to the existence of thresholds. The notion of a threshold is that of a point somewhere along a scalar dimension of variation of the stimulus. The sort of cases I have just mentioned are such that there is no external stimulus that is causally related to the effect in question. There being no stimulus there is no scalar dimension of variation of the stimulus; and thus, of course, no point on such a scale that is the threshold for the effect. In short, there is no threshold in these cases because the whole notion of a threshold does not apply where there is no external stimulus. Correspondingly, one can say that in any case where there is an external stimulus there must be a threshold along a given dimension of variation for any specified effect.

One can agree with this result and yet not feel that any
significant achievement has been made. Two comments about such a charge. First, my argument for the existence of thresholds is certainly stronger than the lame defenses of them that one occasionally finds in the literature. Second, if my result is trivial, then the mistakes made by some psychologists are inexcusable. Once one is clear on the conceptual points, the question "Is there a sensory threshold?", which is the title of Swets' influential article, is easily and trivially answered (as long as one adds caveats about the word 'sensory'). Moreover, having gotten straight about these matters, it is now easy to see that Swets' final verdict on the question of the article - "We have, then, the possibility of a threshold, but it is no more than a possibility". - is incorrect. We have the possibility of a threshold, but it is more than a possibility, it is a certainty.

One respect in which this conclusion might (with some justification) be thought to be weak, is that it only asserts that there is a threshold at zero or above on the energy scale. Some psychologists might be expected to retort that the issue is the question of the existence of a non-zero threshold - that is, a threshold at above zero on the energy scale. Certainly, this is never clearly stated. Swets' article, for example, seems to be


calling into question the existence of a threshold quite inde­
pendently of at what point on the energy scale the threshold
might occur. Above and beyond this, however, what is known of
the functioning of the neurological system suggests that if they
exist, thresholds do not occur at zero on the energy scale. Both
the fact that axons conduct in an all-or-nothing fashion, and
that even with no stimulation there is residual "noise" in the
system,¹² suggest that a non-zero minimum amount of stimulus
energy is necessary to activate the conducting axons and rise
above the background "noise" before any specified effect can oc­
cur. So, although there is proof only of a threshold at or
above zero on the energy scale, combined with what is known of
the neurological system, this suggests the more specific conclu­
sion that there is a threshold at some non-zero energy value.

Two points, finally, about the determination of the val­
ues of thresholds. First, the proof that there are such thresh­
olds helps not a whit with the formidable problems encountered
in attempting to determine their values. Given the large number
of factors that are known to affect the value of the threshold,¹³

¹² See, respectively, e.g.: William H. Miller, Floyd Ratliff and
H.K. Hartline, "How Cells Receive Stimuli", Scientific American
205, #3 (1961): 223; and Ragnar Granit, Receptors and Sensory
Perception: A Discussion of Aims, Means and Results of Electro­
physiological Research into the Process of Reception (New Haven:

¹³ See, e.g.: Corso, "Threshold Concept", p.364; N.R. Bartlett,
"Thresholds as Dependent on Some Energy Relations and Character­
istics of the Subject", in Vision and Visual Perception, ed.
Clarence H. Graham (New York: John Wiley & Sons, Inc., 1965),
pp.154-84; and Dember, Psychology, pp.110-29.
one may despair at ever obtaining worthwhile and useful estimates. This might mean that the concept of thresholds should be dropped from psychological theories - which, of course, is not to admit that thresholds do not exist, but is to agree with Swets that threshold may "not be a very useful concept in experimental practice".  

Second, it is essential to be more clear than psychologists have been in the past, as to the effect whose threshold is being measured. In this regard I have argued that it is certainly unclear what is meant by 'the sensory threshold', and that probably the expression is ambiguous. I have also suggested that the thresholds of perception and awareness are clear and distinct entities. If subliminal perception occurs, then in such instances the value of the threshold of perception is lower (nearer zero on the energy scale) than the value of the threshold of awareness. Because this would seem to be a possibility that one cannot rule out a priori, it suggests a way in which experiments designed to determine the value of a threshold should in future, be refined. That is, such experiments will have to be designed with a view to selecting only data that are relevant to the particular threshold under investigation. It could be that, besides those factors known to affect the results of threshold determination experiments, there is the further factor that the data gathered on the response of subjects are ambiguous as to whether the effect in question is awareness or perception.

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14 Swets, "Sensory Threshold?" p.176.
Failure to differentiate these two could mask the values of either (or both) thresholds.
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