1994

McTaggart's theory of the determining correspondence of substance and the unity of the universe

Gregory Jon Williams

University of Wollongong

Recommended Citation
NOTE
This online version of the thesis may have different page formatting and pagination from the paper copy held in the University of Wollongong Library.

UNIVERSITY OF WOLLONGONG

COPYRIGHT WARNING
You may print or download ONE copy of this document for the purpose of your own research or study. The University does not authorise you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site. You are reminded of the following:

Copyright owners are entitled to take legal action against persons who infringe their copyright. A reproduction of material that is protected by copyright may be a copyright infringement. A court may impose penalties and award damages in relation to offences and infringements relating to copyright material. Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.
Mr Michael Organ,
University Of Wollongong Library,
Northfields Avenue,
Wollongong. 2522

Dear Sir,

Upon re-reading a section of my doctoral thesis "McTaggart's Theory Of The Determining Correspondence Of Substance And The Unity Of The Universe" [Department of Philosophy, 1994] I noticed an error which was originally undetected by myself, and remained undetected by my supervisor and the examiners of the thesis. The error occurs on page 214, lines 20-21, Section 28.

If, as a matter of fact, our knowledge of some entity is inferred from our knowledge of some other entity, then we may say that our knowledge of the former is epistemically prior to our knowledge of the latter.

In this sentence, the order of the words "former" and "latter" is incorrect. The sentence should read:

If, as a matter of fact, our knowledge of some entity is inferred from our knowledge of some other entity, then we may say that our knowledge of the latter is epistemically prior to our knowledge of the former.

Although the error is ostensibly minor, it significantly affects the soundness of the argument in subsequent sections. I would appreciate it, therefore, if you could either correct the original version, or else append this letter and/or the attached note to the thesis.

Yours sincerely,
ERRATA

P. 214, line 20: For "former" read "latter".
P. 214, line 21: For "latter" read "former".
McTAGGART’S THEORY OF THE
DETERMINING CORRESPONDENCE OF
SUBSTANCE AND THE UNITY OF THE
UNIVERSE

A thesis submitted in fulfilment of the requirements
for the award of the degree

DOCTOR OF PHILOSOPHY

from

THE UNIVERSITY OF WOLLONGONG

by

GREGORY JON WILLIAMS B.A.(Hons), M.A.(Hons)

DEPARTMENT OF PHILOSOPHY

1994
This thesis has not been submitted for a degree to any other university or institution.

Gregory Jon Williams
This thesis is entirely my own work, and does not include any material which was written or researched by another person.

Gregory Jon Williams
This work is a study in Metaphysics, based upon a critical examination of the central themes in Volume 1 of McTaggart’s *The Nature Of Existence*. Metaphysics, in general, I have defined as being the study of the most general characteristics of all existents, and of existence or the Universe as a whole. Within the general subject of Metaphysics there are two principal divisions, Ontology and Cosmology. Ontology is the study of the most general characteristics of all existents, and Cosmology is the study of the way in which, if at all, these existents are comprised by a genuine whole or unity. In the Introduction I argue that Metaphysics is essentially an *a priori* study; and, that attempts to found it upon a broadly empirical or inductive method are unacceptable.

The most general principles of classification within Ontology I have called the *categories* of existence. Upon the assumption that something exists we are, I maintain, entitled to conclude that there are four basic categories of existence. The categories are Substance, Quality, Relation, and Unity. The validity of these categories is defended in Chapters 1 and 2.

In Chapter 3 I defend the view that substance is infinitely divisible; hence that there is a plurality of substances, each, in turn, comprising an infinite number of parts. I also defend the view, which is sometimes known as the principle of the Dissimilarity of the Diverse, that substance is differentiated by its nature.
In Chapter 4 I discuss McTaggart's distinction between Intrinsic and Extrinsic Determination, and argue that Intrinsic Determination is best conceived as a relation of existent implication. The nature of the laws of existence, and the principle of Universal Determinism, are discussed within this context.

The assumption that substance is infinitely divisible can be shown to imply a number of contradictions. In Chapter 5 I discuss the nature of these contradictions. McTaggart has argued that these contradictions can only be avoided if certain conditions are met. The theory of the Determining Correspondence of Substance claims to satisfy these conditions. In Chapter 6 I discuss the theory, and defend it against some criticisms.

The validity of the theory of Determining Correspondence allows us to draw some conclusions about the kinds of unity which the Universe displays. Specifically, I argue that we are entitled to conclude that the Universe is a *self-reflecting* unity. In the final chapter I consider the nature of such a unity in relation to some more familiar kinds of unity. I also consider some of the empirical conclusions which might be drawn from the assumption that the Universe is a unity of this kind.
ACKNOWLEDGEMENT

I would like to thank Dr David Simpson and Professor Lauchlan Chipman for their helpful comments and suggestions.
CONTENTS

INTRODUCTION..............................................................................1

CHAPTER 1 - The Categories Of Existence.........................28

CHAPTER 2 - The Categories Of Existence (2)....................88

CHAPTER 3 - The Differentiation Of Substance....................130

CHAPTER 4 - Determination And Determinism....................177

CHAPTER 5 - The Contradiction Of Infinite Divisibility.........231

CHAPTER 6 - Determining Correspondence.......................268

CHAPTER 7 - The Unity Of The Universe............................332

APPENDIX 1.................................................................358

APPENDIX 2.................................................................383

REFERENCES.................................................................392
INTRODUCTION

Subject—Matter And Method

1. In the preface to his book *Mind and Matter*, G.F. Stout suggested that philosophy has two parts.

The first consists in an analysis of ordinary Experience in order to find a coherent account of the principles involved in it. The second is concerned with the ultimate nature of the all-inclusive Universe of Being. It considers whether the Universe, besides being all-inclusive, is properly regarded as a self-complete unity rather than as an endless series or aggregate. If it is a unity, the question arises as to the nature of the unity, and this leads to the problem of the distinction and relation of the world of becoming and finite existence to eternal Being.¹

These two parts are said to correspond roughly to Kant’s *Analytic* and *Dialectic* respectively. C.D. Broad has suggested that a similar distinction be drawn between Critical and Speculative Philosophy¹; and, under various titles, such a distinction has been more or less explicitly acknowledged by many philosophers. The second of these divisions I shall call *Metaphysics*; and in doing so I do not believe that I am making any significant departure from what has been traditionally understood by that term.
This work is, in the above sense, a study in Metaphysics. It is an attempt, based upon a critical study of J.E. McTaggart's *The Nature Of Existence*, to arrive at some conclusions about the ultimate nature of the Universe and the way in which, if at all, it can be said to be a unity.

2. But what are we talking about when we talk about the Universe? A universe, according to McTaggart, is to be defined as being either a substance which contains all existent content or a substance of which all other substances are parts. He then points out that, since it is impossible for two or more substances to each contain all existent content, it is impossible for there to be more than one universe. The description, "a substance which contains all existent content", is therefore an exclusive description - i.e. a description which applies to one and only one entity. If there is a universe, then there is, and can be, only one universe; and so we may understand the description to be a description of the universe, or the Universe.

3. Does the Universe exist? In one sense the answer to this question seems obvious. The denial of the existence of the Universe would, it appears, amount to an avowal of Nihilism - and the avowal of such a doctrine, it is evident, amounts to a refutation of that doctrine. But the Universe, thus understood, is simply a name for the aggregate of all existents; and it is clear that if there is more than one existent, then there must be an aggregate of existents - hence the Universe exists.
But in another sense the existence of the Universe is quite problematic*. It is by no means uncontentious to assert that the categories of Substance and Content, which feature in McTaggart’s definition, are applicable to the existent; and it is questionable whether the part/whole relation is, in the manner proposed by McTaggart, applicable to the aggregate of all existents. In order to establish that there is a universe, in McTaggart’s sense, it is necessary to argue, firstly, that the primary or fundamental existents are substances; and, secondly, that these existent entities make up a particular kind of unity.

Accordingly, we may draw a distinction between the Universe insofar as it is an aggregate of all existents, and the Universe insofar as it is a unity of all existents. The Universe, considered as a unity of all existents, I shall call the Cosmos, and the study of the kind of unity which its constituents form, Cosmology. It is clear, however, that it is impossible to determine the kind of unity displayed by the Universe without determining the general characteristics of the existents which make it up. The study of the general characteristics of the existents which make up the Universe I shall call Ontology.

Metaphysics can thus be said to have two parts, Cosmology and Ontology. Although distinct, they are not mutually independent fields of study. Conclusions reached about the general characteristics of all existents, for example, will inevitably determine the way in which, if at all, such entities form a genuine unity or Cosmos. And since the Universe itself is assumed to be an existent entity, any genuine ontological knowledge may also be Cosmological knowledge.
4. Having briefly indicated the subject-matter of our study we may now consider the most appropriate method of obtaining knowledge of this subject-matter.

In Chapter 3 of *The Nature Of Existence* McTaggart discusses the question of the correct method of obtaining knowledge in Metaphysics. He begins by stating the aims of such a study. They are, firstly, to consider what can be determined about the general characteristics of all existents; and, secondly, to consider what can be determined about the characteristics of existence or the Universe as a whole. The first is clearly the aim of Ontology, and the second that of Cosmology - as I have defined these studies. McTaggart then argues that metaphysical knowledge cannot, in the first instance, rest upon inductive inferences. But before considering the reasons why he believed that metaphysical knowledge cannot rest upon inductive inferences we should, I think, briefly consider the other possible means of obtaining such knowledge.

5. It would appear that cosmological knowledge cannot be obtained merely by perception. Perception ostensibly provides us with knowledge of only a limited number of particular existents and their characteristics. The Universe, as a whole, is not generally considered to be a possible object of perception - except, perhaps, to God, should He exist. But to finite minds, ostensibly limited in their perceptual fields, such knowledge would appear to be impossible.

It would also appear that perception alone cannot provide us with ontological knowledge, since the number of existents with which we are acquainted in perception is ostensibly limited in comparison with
the indefinite, and arguably infinite, number of existents which make up the Universe. Perception might provide us with knowledge of some of the characteristics of some existents; but it cannot alone, it would seem, provide us with knowledge of the general characteristics of all existents.

6. Perception alone, then, cannot ostensibly provide us with either cosmological or ontological knowledge. It would appear that such knowledge must be obtained by some other mode of cognition. Now it is, I think, universally accepted that there are at most two distinct general modes of cognition. The first is the intuitive or perceptual mode, which I have mentioned above. The second is the discursive or rational mode. The latter differs from the former in that knowledge obtained by its use does not necessarily involve direct acquaintance with the object of that knowledge — although it may be based upon knowledge which is obtained by such acquaintance in the intuitive or perceptual mode.

If cosmological and ontological knowledge is possible it must, then, be obtained by means of discursive cognition. Now discursive cognition may be divided into two modes — inferential and non-inferential. Non-inferential discursive cognition includes beliefs or judgements which are not based upon further beliefs or judgements. Most true perceptual beliefs, for example, are instances of non-inferential discursive cognition. The same can be said of most beliefs involving self-evident propositions. Inferential discursive cognition, on the other hand, includes beliefs or judgements which are based either upon non-inferential beliefs or upon other
inferential beliefs, and which are reached by a process of inference or reasoning.

Inferential discursive cognition can itself be further divided into beliefs which are reached by a process of inductive inference, and beliefs which are reached by a process of deductive inference.

7. Of the various modes of discursive cognition which, if any, might provide us with metaphysical knowledge?

Such knowledge can, I believe, be obtained by means of non-inferential discursive cognition. Although non-inferential discursive cognition based upon perception cannot directly provide us with knowledge about all existents or about existence as a whole, it may provide us with knowledge about one or more existents; and from this knowledge we may infer certain conclusions about all existents or about existence as a whole. McTaggart's assertion that something exists is, I suggest, an example of a non-inferential belief, based upon perception, which may indirectly provide us with genuine metaphysical knowledge.

The other mode of non-inferential discursive cognition, involving the awareness of self-evident propositions, can also, I believe, provide us with genuine metaphysical knowledge. The belief that no existent can, at the same time and in the same respect, unite contrary characteristics, is, I suggest, an example of a non-inferential discursive cognition involving a self-evident proposition, which provides us with genuine metaphysical knowledge. It is a belief which is not based upon any further belief; and, although confirmed by, it is not based upon, perception. It is an example of cosmological knowledge, since it tells us something about
existence as a whole. And it is an example of ontological knowledge since it tells us something about all existents.

8. It is not clear, however, that both modes of inferential discursive cognition can provide us with metaphysical knowledge. In Sections 41 to 44, and in Sections 244 to 271, of The Nature Of Existence, McTaggart provides us with what are, I believe, conclusive reasons for believing that genuine metaphysical knowledge cannot be obtained by means of inductive reasoning.

There are according to McTaggart, two general reasons why inductive reasoning cannot provide us with metaphysical knowledge. The first is that the validity of inductive inferences is not self-evident. Any validity they may have is dependent upon the knowledge that all existents, as well as existence as a whole, have certain characteristics which guarantee the validity of inductive inferences. And it is clear that we cannot prove that all existents, and existence as a whole, have these characteristics by means of inductive reasoning without involving ourselves in a vicious circle. What these characteristics might be, and whether, assuming that the Universe does have these characteristics, we are even then justified in accepting inductive inferences as valid, are questions which I will consider in Section 10.

9. The second reason which McTaggart gives for believing that inductive reasoning cannot provide us with metaphysical knowledge is that, even if such reasoning could be shown to be valid, it is nonetheless incapable, by its very nature, of providing us with such knowledge. In the first place, it is incapable of providing us with
cosmological knowledge, since induction essentially involves the initial observation that some members of a class of entities share a characteristic which is other than the characteristic which determines the fact that they are members of that particular class. But the Universe, or existence as a whole, is not, as we have seen, a member of a class of entities each of which is a universe or existence as a whole. Hence the initial step in any inductive inference cannot, in this case, be carried out. We cannot, accordingly, obtain any cosmological knowledge by this method.

In the second place, insofar as inductive reasoning provides us with conclusions which are probable, rather than certain, it is incapable of providing us with ontological knowledge — since the probability of the truth of any conclusion about the general characteristics of all existents reached by such a method would be so small as to render the inference invalid. Any ontological conclusions reached by means of inductive inference will vary in their probability of being true in accordance with the ratio between the field of observation and the field of inference. Now the number of observed existents is ostensibly finite. On the other hand, the number of existents is indefinitely, and, as McTaggart subsequently argues, infinitely, larger than the number of observed existents. The field of observation is thus an infinitely small proportion of the field of inference; and the probability of the truth of any inferred conclusion about the general characteristics of all existents will accordingly be infinitely small — so small as to render the inference invalid.

It is true, as McTaggart acknowledges, that the probability of the truth of inductively inferred conclusions does not vary only in
accordance with the ratio between the field of observation and the
field of inference. But where the probability of the truth of such
inferences does increase independently of this ratio it is on the
basis of prior knowledge of some general characteristic or
characteristics of the members of the field of inference. And it is
clear, for the reason outlined in the previous paragraph, that such
prior knowledge concerning all existents cannot be obtained by
inductive reasoning alone. If ontological conclusions reached by
inductive inference are to have any significant degree of
probability, then that probability must be based upon prior
ontological knowledge obtained by some other mode of cognition. Now
there are, I have suggested, only two modes of cognition which can
provide us with such prior knowledge - non-inferential discursive
cognition involving the awareness of self-evident propositions, and
deductive inferential discursive cognition. I will now consider
whether such modes of cognition can provide us with the kind of
knowledge which will justify the use of inductive reasoning in
Metaphysics.

10. It is generally admitted that a necessary, if not a sufficient
condition for the validity of inductive reasoning is the truth of the
principle of the Uniformity of Nature. What exactly this principle
amounts to is a matter of conjecture. It is sometimes understood to
mean that every event is caused by some other event in accordance
with a law. But it is clear that such a principle is less general
than, and depends for its validity upon, the principle that every
characteristic of every existent entity is determined, in accordance
with some law, by some other characteristic belonging to that or to
some other entity. All instances of causality are understood to be
instances of laws, whereas it is not obviously the case that all
instances of laws are instances of causality. The principle of the
Uniformity of Nature will, then, be understood to mean that every
characteristic of every existent entity is determined, in accordance
with some law, by some other characteristic.

It is generally admitted that the principle of the Uniformity of
Nature is necessary for inductive reasoning to be valid. But it is
also generally admitted that such a principle cannot, without
circularity, be established by inductive reasoning. There are, then,
two questions we must ask ourselves: (i) Can this principle be
established by some other mode of cognition?; and (ii) Would such a
principle, even if true, provide us with a sufficient condition for
the validity of inductive reasoning in Metaphysics? I will consider
each of these questions in turn.

11. The claim that every characteristic of every existent entity
is determined, in accordance with some general law, by some other
characteristic, should, at the outset, be distinguished from the
claim that every such characteristic is determined by some other
characteristic. The distinction is important, especially in view of
McTaggart's subsequent distinction between the principles of
Intrinsic and Extrinsic determination\textsuperscript{10}. The view that every
characteristic of every existent is determined, in accordance with
some general law, by some other characteristic, I shall call
Nomological Determinism. The view that every characteristic is
determined by some other characteristic of the existent - although
not in accordance with some general law - I shall call Anomalous
Determinism. The relevance of this distinction for the present discussion is that even if we could show that Anomalous Determinism is true, this would not provide us with a basis for believing that inductive reasoning is valid. Inductive reasoning essentially involves an inference from the premiss that a number of entities have been observed in which certain characteristics, say $X$ and $Y$, have been conjoined, to the conclusion that anything which has the characteristic $X$ has the characteristic $Y$; that is to say, to the conclusion that a relation of intrinsic determination exists between $X$ and $Y$. The principle of the Uniformity of Nature will, then, be understood to be equivalent to the principle of Nomological Determinism.

Can the principle of Nomological Determinism be established by means of either non-inferential discursive cognition or deductive-inferential cognition? I do not see that this is possible. In the first place it cannot be accorded the status of a self-evident principle. There is plainly no absurdity or self-contradiction involved in the assumption that there might be some existent qualities which are not determined by other qualities in accordance with general laws. And the existence of characteristics which are essentially unique or item-specific undermines any claim that the principle might be self-evident. On the other hand, the principle of the Uniformity of Nature has often been understood to mean that every event has a cause - where causation is understood to be a species of general law. And it is sometimes maintained that such a principle is self-evident. But the principle of Universal Causation, thus understood, is not equivalent to the principle of Nomological Determinism, since it is possible that every event is determined by
some other event in accordance with some general law without it being the case that every characteristic of those events is determined, in accordance with some general law, by some other characteristic. The principle of Universal Causation is, of course, consistent with the principle of Nomological Determinism. But the two principles are not equivalent. Nor is the latter implied by the former. And it is the latter which is required to establish the validity of inductive reasoning.

The fact that the principle of Nomological Determinism is not self-evident does not, however, imply that there are no general laws which are self-evident. When I judge, upon the awareness of particular instances of red, yellow, and orange, that the qualitative difference between red and yellow is greater than that between red and orange, I implicitly assert that this relationship holds of all instances of red, yellow, and orange. In one sense it might be argued that such a process of inference from the observation of particular instances to the existence of a general law is a process of inductive inference. W.E. Johnson, from whom the example is borrowed, called such a process *Intuitive Induction*. The use of the term "induction" to describe such a process is, however, somewhat misleading, since it is clear that what guarantees the validity of such inferences is the awareness of a relation of intrinsic determination among the characteristics involved. Now the awareness of this relation might be dependent upon the awareness of the instances of the qualities involved in the sense that I could not have known of the existence of such a relation had I not been aware of the particular instances of the qualities. But this does not mean that the validity of the general law involved is established by the
awareness of particular instances. In other words, the validity of the law is established independently of the way in which the law is discovered. And unless we could know, independently of any inductive inference, that such a law was valid, any attempt to establish its validity by induction would prove to be circular.

Whether the awareness of the relation of intrinsic determination among such characteristics should be called a priori or empirical is, perhaps, a matter of convention. It is clear that such a relation is not among the impressions derived from the senses; we do not perceive such a relation in the sense that we perceive the particular instances of red, yellow, and orange. And if the claim that something is discovered empirically means that it is contingent, then such an awareness of intrinsic determination cannot be considered to be empirical. For these reasons I believe that it is preferable to say that such awareness is a priori, and that the awareness of self-evident general laws is a matter of a priori insight or intuition.

Even though some qualities of the existent are known to be related to other qualities of the existent in accordance with general laws, this does not imply that all qualities are so related. Now it is obvious that any attempt to establish the principle of Nomological Determinism by induction from the premisses that some qualities of the existent are known to be related to other qualities in accordance with general laws will ultimately be circular; and I don't see how this principle can be deduced from any other principle which is self-evident.

12. The fact that we are unable to demonstrate the truth of the principle of Nomological Determinism does not, of course, imply that
it is false. I maintain, however, that even if we assume that the principle is true, it would not guarantee the validity of inductive inferences.

In the first place, it is evident that the validity of an inductive inference to the existence of a general law is dependent upon the assumption that such a law is not known, and is not capable of being known, \textit{a priori}. I do not see any reason to doubt that this condition might be fulfilled; and McTaggart has claimed\textsuperscript{13} that this condition is, in fact, guaranteed by the principle of Determining Correspondence. But even if this condition is satisfied we are still not in a position to guarantee the validity of inductive inferences. Let us assume that we have observed one hundred occurrences of the characteristic $X$ in which it is accompanied by the characteristic $Y$. We wish to conclude, on the basis of this information\textsuperscript{1*}, that $X$ is related to $Y$ in accordance with some general law. Is such an inference valid? Now we know — or at least we have assumed — that every quality of the existent is related, in accordance with some general law, with some other quality of the existent. And we do not know \textit{a priori} that $X$ is related to $Y$ in accordance with some general law. Are we, then, entitled to draw the conclusion that $X$ is related to $Y$ in accordance with some general law on the basis of this information alone? Clearly, we cannot draw this conclusion. Firstly, it is always possible that the connection between $X$ and $Y$ is contingent. The principle of Nomological Determinism states that every characteristic of the existent is related, in accordance with some general law, with \textit{some} other characteristic of the existent. It does not state that every characteristic of the existent is related, in accordance with some general law, with \textit{every} characteristic of the
existent. And yet, without this latter principle, it is clear that our inference would be invalid.

Secondly, and perhaps more importantly, insofar as the connection between $X$ and $Y$ might be contingent, it is always possible that the occurrence of $X$ is always determined by some characteristic, $W$, and that the occurrence of $Y$ is always determined by some characteristic, $Z$ — where $W$ and $Z$ are both unobserved, and unrelated to each other in accordance with some general law. Again, any inference to the existence of a general law relating $X$ and $Y$ would be invalid.

13. It has been claimed that, even though inductive inferences are not strictly valid, they are nonetheless rational, in the sense that their validity is presupposed in the most fundamental human activities. The claim that induction, though not strictly valid, is rational, is, however, somewhat ambiguous, and it has been used to support various conclusions.

It has been suggested, for example, that unless we accept some inductive inferences as valid, we could not be sure that the sun will rise tomorrow, or that beheading someone will cause their death. But what such examples show is not that induction is rational, but that a belief in the validity of induction is prudent. I should distinguish prudence from rationality in the following way. Let us assume that, after several years of study, we come to the conclusion that there is no sound philosophical reason to believe that there is a supreme deity. Let us also assume that there are very good philosophical reasons for believing that God could not exist. But we know that a belief in the existence of God is a prerequisite for eternal life, should eternal life be possible and desirable. I should say, in this
case, that although it is not rational to believe that God exists, it is nonetheless prudent to do so, since the consequences of failing to believe that He exists, if He does exist, would be quite disastrous for our future well-being. A belief in the validity of induction is, I suggest, prudent in the same sense that a belief in the existence of God would be prudent. But neither belief is rational because they cannot be supported by any sound philosophical argument. In any case, it is not generally argued that all inductive inferences are rational, only that some are. And the fact that inferences of the kind mentioned above are accepted as rational does not imply that inductive inferences in Metaphysics are rational, since a belief in the validity of such inferences is not, in general, essential to the conduct of everyday life.

It has also been suggested that a belief in the validity of inductive inferences is rational in the sense that the conclusions of such arguments, though not certain, are nonetheless probable; and a number of ingenious attempts have been made to formulate a theory of probability which will accommodate inductive inferences. There are, however, two obvious reasons why such theories cannot help us in determining the probability of ontological conclusions reached by induction. Firstly, such theories almost invariably presuppose that the field of inference is finite, and that the field of observation is a "fair sample" of the field of inference. But in the case of ontology, the field of inference is indefinite, and arguably infinite; and we can never be sure that the number of observed existents provides us with a fair sample of that field. Secondly, unless we have some antecedent knowledge concerning the incidence of general laws among the characteristics of all existents it is
impossible to assign any real probability to ontological conclusions reached by induction. And we have seen that even the principle of Nomological Determinism is inadequate to provide us with a prima facie case for believing that the regular conjunction of certain characteristics is evidence for the conclusion that such a conjunction is an instance of a general law.

14. The claim that a belief in the validity of induction is rational has recently been used to support a rather unusual conclusion. In Chapter 4 of *What Is A Law Of Nature?*, D.M. Armstrong has employed a form of transcendental argument, involving the premiss that we know that induction is rational, to prove that there must be laws of nature; and, that these laws must be of a particular nature. The claim to know that induction is rational is supported in the following way.

We make inferences from the observed to the unobserved. Such inferences are central to the conduct of life. It is notorious among philosophers that these inferences are strictly invalid and also that they are very difficult to formalize. Are they nevertheless rational? In ordinary life we assume without question that they are rational. Hume, however, denied that they are rational. This constitutes his *inductive scepticism*.

Inductive scepticism is one of those sceptical theses that question part of the bed-rock of our beliefs....It is this bed-rock of beliefs which G.E. Moore defended in his vindication of commonsense....This central core has the characteristic that we are much more certain of their truth than any of the
philosophical arguments used to make us feel sceptical about them. We think, or we should think, that it is more likely that the arguments are unsound in some way (philosophy is very difficult) than that the beliefs are false....

It is to be noted also, as Hume has so conspicuously noted, that a philosopher's denial of one of these fundamental beliefs always involves him in a certain amount of mauvaise foi. He may believe the sceptical theory, or, more likely, experience an illusion of belief, while he is in his study. But in his ordinary thinking and reasoning he will return to the unsceptical belief which he has officially repudiated....

Now, of all our beliefs, the belief in the rationality of our inferences to the unobserved has claims to be our most basic belief of all. It is therefore a most serious philosophical objection to a philosophical theory if it has inductive scepticism as a consequence. 16

Armstrong then argues that the best explanation for a belief in the rationality of induction is that there are laws of nature which involve a necessary connection between universal characteristics.

There are, however, a number of serious problems with this view. Firstly, there is an unresolved ambiguity in the statement that induction is rational. It might be understood to mean that a belief in the validity of induction is a rational belief; and this is, I suggest, the most natural and the most accurate analysis of the sort of commonsense belief to which Armstrong appeals. What is implied in our commonsense belief is, I suggest, the claim that when we make inductive inferences, these inferences are rational in the sense that
they can, in principle, be supported by sound philosophical argument; and that they do, for the most part, lead us from true premisses, by means of a valid logical principle, to true conclusions. But as we have already seen, a philosophical justification for believing that such inferences are valid is just what we lack, and what seems, in principle, impossible to obtain.

On the other hand, the statement might be understood to mean that a failure to accept the validity of inductive inferences would have disastrous consequences for the conduct of our normal life. In that case, however, the claim that induction is rational amounts to little more than the claim that it is prudent to accept the validity of such inferences. And if we accept the distinction between prudence and rationality which I outlined in the previous section, it follows that the sceptic can quite consistently deny the rationality of induction, and yet still act as if such inferences are valid. There is no bad faith involved in denying that a belief in the validity of induction is rational whilst insisting that such a belief is nonetheless prudent.

Secondly, there are those of us who remain unconvinced of the cogency of Moore's defence of commonsense principles - in which case the sort of argument used by Armstrong to defend the rationality of induction is of dubious merit. It is undoubtedly true that we can isolate a central core of beliefs which we would not readily abandon in the face of a philosophical argument which professed to show that they are false. But the fact that we have a core of such beliefs in common does not imply that we have a common core of such beliefs. The nature and number of the beliefs which make up a person's central core is surely a contingent matter. The central core of beliefs
belonging to a New Guinea tribesman will differ from that belonging to a nuclear physicist. And it is doubtful whether a belief in the rationality of induction figures prominently, if at all, in either. This is not to say that neither acts as though he believed that inductive inferences are valid; since it is consistent, as I have argued above, to act on the belief that induction is valid without thereby believing that this belief has a rational, as distinct from a merely prudential, foundation. Furthermore, it is simply not true that those beliefs which figure most prominently in our normal conduct are held with the greatest conviction. I would be more inclined, for example, to reject a philosophical argument which implied that the areas bounded by a circle and a square are commensurate, than one which implied that there are no bodies which exist independently of their being perceived. And yet the belief that there are bodies which exist independently of their being perceived figures more prominently in my normal conduct than does the belief that the areas bounded by a circle and a square are incommensurate.

15. Thirdly, even if we accept that a belief in the validity of induction is rational, it does not follow that the best explanation for the rationality of this belief is that there are laws of nature of the kind described by Armstrong.

There are two essential features of Armstrong's theory of natural laws which are relevant to our present discussion. The first is that all such laws assert the existence of a dyadic universal relation which relates two universal properties. These laws can be expressed in the form $N(F,G)$ - where $N$ is a relation of necessitation, and $F$ and $G$ are distinct properties. The second is that the relation $N$,
though a relation of necessitation, as distinct from, say, a relation of mere constant conjunction, is not a relation of logical necessity; so that "It is always logically possible that the antecedent of a law of nature should be instantiated, and yet that, because of the presence of interfering factors, the consequent universal not be instantiated."\(^1\). This second feature is what we might call the Contingency Thesis.

I maintain that such a theory of natural laws does not provide us with a rational basis for believing that inductive inferences are valid. My reasons for saying this are as follows.

Firstly, as I have argued in Section 12, the assumption that there are general laws does not, in itself, guarantee the validity of inductive inferences. We must also have some antecedent knowledge of the relative incidence of such laws before we can even begin to determine the probability that an observed conjunction of certain characteristics is evidence of the existence of a law. Unfortunately, Armstrong does not explicitly address himself to the question of the relative incidence of general laws; and we have seen that even the principle of Nomological Determinism is not sufficient to guarantee the validity of an inductive inference to the existence of a general law.

Secondly, any difficulties involved in determining whether an observed conjunction of characteristics is evidence of the existence of a general law are compounded by Armstrong's contingency thesis. Let us assume that we have observed ninety-nine cases in which the characteristic \(F\) is conjoined with the characteristic \(G\). Let us also assume that we have observed one case in which \(F\) was not found in conjunction with \(G\). Do our observations confirm or refute the
hypothesis that $F$ and $G$ are related in accordance with a general law? According to the view, advocated by McTaggart, that a general law involves a relation of intrinsic determination between two or more characteristics, the fact that we have observed one case in which $F$ occurred without $G$ conclusively refutes the hypothesis that they are related in accordance with a general law. But this is not the case with Armstrong's theory. The fact that we have observed one or more cases in which $F$ has occurred without $G$ does not, according to Armstrong, refute the hypothesis that they are related in accordance with a general law. Of course, the fact that we have observed ninety-nine cases in which they have been conjoined might seem to make the hypothesis that they are related in accordance with a general law more probable than the hypothesis that their connection is merely contingent. But this would only be true if we could be sure that our field of observation was a fair sample of the field of inference. And in Ontology, as I have argued above, we can never be sure that our field of observation is a fair sample of the field of inference.

But even if we assume that the field of observation is a fair sample, our difficulties do not cease. Let us assume that we have observed eighty cases in which $F$ is conjoined with $G$, and twenty cases where $F$ is found alone; and that these observations provide us with a fair sample. Is our inductive inference to the existence of a general law relating $F$ and $G$ any more rational than the conclusion that their conjunction is merely contingent? I do not see that Armstrong's theory can provide us with any real solution to this dilemma.

Thirdly, by introducing an element of contingency into the connection between $F$ and $G$, Armstrong has, it seems to me, undermined
what he considers to be one of the chief advantages of a “necessity” view of laws as opposed to a regularity view—according to which a general law is simply the fact that certain characteristics are constantly conjoined. On page 50 of *What Is A Law Of Nature?*, he states the following two objections to the regularity, or Humean uniformity, view of the status of laws of nature.

(1) Law statements (in many cases) do, and regularity statements do not, support counterfactuals.

(2) In order that a law-statement should support a counterfactual the law statement plus the fully stated antecedent of the counterfactual must entail the consequent of the counterfactual. “Furthermore, the supposition of the truth of the antecedent of the counterfactual must not be such as to bring into doubt whether, in this new thought-situation this law continues to hold. It is the necessity of the law which ensures the truth of the counterfactual.”

Now, if there is an element of contingency in the relation between the characteristics concerned, then law-statements such as $N(F,G)$ do not support counterfactuals, since, from the supposition that if something, say $x$, were $F$, we cannot legitimately infer that it would be $G$. We may infer that if $X$ were $F$, as well as $H,J,K$, etc. – where $H,J,K$, etc. are the additional qualities which $x$ would need to have to ensure the validity of the inference – then it would be $G$. But in doing so we have removed the element of contingency, and replaced our original law-statement with another, $N'(L,G)$ – where $L$ is a compound
quality comprising $F,H,K,\text{etc.}$, and $N'$ is a relation of intrinsic determination, i.e. of logical necessity.

16. On page 53 Armstrong attempts to resolve the ambiguity in his initial claim that induction is rational. He firstly claims that it is rational to postulate what best explains the phenomena – in this case the observed regular conjunction of $F$ and $G$. He then argues that induction is rational because it is a case of an inference to the best explanation – namely, that $F$ and $G$ are related in accordance with a general law.

There are, however, two problems with this argument. In the first place, the concept of rationality remains undefined. This might be because the concept of rationality is a primitive, hence indefinable, notion. But then to be told that induction is rational because inference to the best explanation is rational is hardly enlightening. On the other hand, when we are informed, on page 59, that inference to the best explanation is part of what we mean by rationality, then it seems that Armstrong's argument ultimately amounts to this:

1. Induction, insofar as it is an inference to the best explanation, is rational.

2. Inference to the best explanation is rational because it is part of what we mean by rationality.

Therefore,

3. Induction is rational because it is part of what we mean by rationality.
This conclusion is, of course, a familiar defence of induction. But it is a defence which Armstrong himself, on page 53, has condemned as "utterly unsatisfying". And it is a defence which is open to the obvious reply that it can hardly be rational to employ a form of reasoning which can lead from true premisses to a false conclusion.

The second problem with Armstrong's argument is that it is open to the charge of begging the question. Induction might be an inference to the best explanation. But it only provides us with the best explanation if it also provides us with the true explanation. Let us assume, for example, that all observed F's are G's. We then conclude, on the basis of this information, that all F's are G's - where this universal statement is understood to be equivalent to the statement of a general law of the form $N(F,G)$, involving a relation of necessary connection between the characteristics $F$ and $G$. Is the conclusion that $F$ and $G$ are related in accordance with a general law the best explanation for the fact that all observed F's are G's? It might be the best explanation in the sense that it is the most intellectually satisfying. But it is not the best explanation if the connection between $F$ and $G$ is, in fact, contingent. And it is hardly an answer to the sceptic to argue that $F$ and $G$ must be related in accordance with a general law because it is more satisfying, intellectually, to believe that their connection is necessary rather than contingent.

17. I have argued that Metaphysics cannot be based upon principles of reasoning which are essentially empirical or inductive. This does not necessarily mean that such principles are of no value if, after
reaching certain general ontological and cosmological conclusions by other methods, we attempt, on the basis of empirical considerations, to arrive at more specific conclusions about the nature of the Universe. But these principles cannot be used to establish the metaphysical conclusions upon which the relevance and validity of any empirical considerations are ultimately based.

In the next chapter we shall begin our metaphysical inquiry with an attempt to determine the nature of the most fundamental principles of classification within ontology.

NOTES


5. The meaning which I have given to this term differs from that given to it by McTaggart in his Studies In Hegelian Cosmology, §1. But it is, I believe, in accordance with traditional usage.


7. There are, of course, exceptions to this generalisation. Leibniz, for example, argued that each monad perceives the Universe as a whole - from its own point of view [cf., The Monadology, §62-63]. But the exceptions to this generalisation almost invariably reach such conclusions by means of discursive reasoning. Perception does not ostensibly provide us with such knowledge.


11. It might be claimed that such characteristics are impossible. In Chapter 2 I shall argue that the common objections to the existence of such characteristics are unsound.


14. And upon the knowledge that no instances of $X$ have been observed unaccompanied by instances of $Y$.


18. The characteristics may, of course, be compound or complex. The nature of laws will be considered in more detail in Chapter 4.


It is enough to understand the simplest truism of Identity, that a thing does what it is its nature to do under given conditions, and cannot do otherwise except by some change in the conditions; from which it follows, that if, in an alleged causal nexus, the alleged effect is sometimes absent while the alleged cause is present, *ceteris paribus*, it is impossible that the alleged cause should be the real cause of the effect in question.

20. I have, for the sake of argument, assumed that this *is* an advantage. The fact that a theory licenses the use of strict counterfactuals - i.e. contrary-to-fact conditionals, *may*, in fact, be a disadvantage if such inferences are ultimately invalid. Cf., McTaggart, *The Nature Of Existence*, Chapter 12; Benson Mates, *The Philosophy Of Leibniz*, Chapter 8, also Chapter 14, esp., p.253.


22. I believe that a similar charge can be made against John Foster's attempt to defend the validity of induction along similar lines. See John Foster, "Induction, Explanation and Natural Necessity".
CHAPTER ONE

The Categories Of Existence

1. Any metaphysical inquiry must begin with the assumption that something exists. The proposition "something exists" is not, however, self-evident. And it is not, as Kant has argued, a proposition which is analytically true. Accordingly, it might be maintained that the conclusions of any metaphysical inquiry must be conditional - they might be true if anything exists, but the initial assumption that something exists cannot itself be established by a metaphysical theory. If it is true, its truth must be established independently of that theory.

Although the proposition "something exists" cannot be proven to be true by discursive cognition alone, this does not imply that it cannot be established by some other mode of cognition. And I think we can agree with McTaggart that the truth of the proposition can be established by perception. The belief that something exists is founded upon the fact that something is perceived as existent. That is to say, the perception of something as existent is evidence for the perceptual belief that something exists. Now, although this belief is not necessarily accompanied by the certainty which accompanies the awareness of some self-evident propositions, it is nonetheless almost certainly true; and we can be more certain of its truth than we can of any other perceptual belief. This is demonstrated by the fact that, even if a particular perceptual belief is false, it nevertheless follows that the erroneous belief exists.
So, even if the belief that a particular entity, $x$, exists, is false, the belief that something exists will still be true, since the false belief that $x$ exists must itself exist. Hence, although we cannot attach a great degree of certainty to the belief that some particular entity exists, we can attach a great degree of certainty to the belief that something exists.

2. The proposition "something exists" is not, however, without ambiguity. McTaggart has attempted to resolve this ambiguity by pointing out that "something" must, in this case, be understood to be the most abstract and indeterminate term that we can get.

...if taken literally it is not indeterminate enough, for it would mean, in that case, some thing. And, if we say of the existent that it is a thing, in the ordinary sense of the word, we are saying much more of it than simply that it exists. We must take "something" here as perfectly indefinite - the abstract subject of predication. The German etwas is less misleading, though even this, at any rate in Hegel's use of it, is too definite for our present purpose.'

Although McTaggart attempts to avoid the implicit introduction of any particular ontological category into his analysis of the proposition "something exists", I do not think he is entirely successful. This is evident in his subsequent deduction of the category of Quality, and his claim that existence is a quality.

If we assume that something exists, then, according to McTaggart, we are entitled to draw two conclusions. The first is that existence
is true of that something. The second is that what is true of something is a quality of that something - hence that existence is a quality of the existent. But the initial conclusion is, I suggest, one which we are not, strictly, entitled to draw. There is at least one other analysis of the assumption which is consistent with the view that existence is indefinable. It may be understood to mean that some quality exists; and the claim that some quality exists need not be understood to mean that existence is predicated of some quality. It may be understood, rather, to mean that something can be predicated of, i.e. is true of, existence - in which case existence is understood to be the ultimate substantive of which all qualities are directly, or indirectly, predicated, without itself being a quality, or true of, anything.

This analysis of the proposition "something exists" will still allow us to derive the category of Quality from our initial assumption; since we can agree with McTaggart¹ that something must be true of the existent, and that this something is not, itself, existence. We may then agree that what is "true of" something is a quality of that something. This analysis has the advantage of avoiding the charge of circularity which Broad has made against McTaggart's attempt to show that the existent must have some quality other than existence³. It also has the advantage of not implying that existence is a quality or predicate; thereby avoiding the well-known, and, I believe, conclusive objections raised by Kant against such a view. There are, I think, a number of other important advantages which will emerge in subsequent discussion.
3. If we accept the assumption that something exists, then, according to McTaggart, we may conclude that something must be true of the existent other than its existence.

Apart from the implicit assumption that existence is a quality we can, I believe, accept this conclusion. I agree with Broad¹, and with A.E. Taylor², that this proposition is self-evident; and I consider McTaggart's attempts to argue for the conclusion to be both superfluous and unsound. The first of these arguments is that, unless the existent has some quality other than existence, it would be a "perfect and absolute blank". And to say that only this exists, is according to McTaggart, equivalent to saying that nothing exists³. This argument has rightly been criticised by Broad.

This seems to me to be false or circular. If it had any characteristic at all, it would not be a perfect and absolute blank; and, by hypothesis, it has the characteristic of being existent. The only ground for saying that it would be a "perfect and absolute blank" is the assumption that the absence of all other characteristics entails the absence of the characteristic of being an existent and so leaves no characteristics at all. But this is exactly what the argument set out to prove. So the argument is circular, since it can prove its conclusion only by assuming it as one of its premises.⁴

A slightly different argument, and one which might support McTaggart's conclusion, is, that unless existence, qua substantive, has some determinate nature or quality, it would be indistinguishable
from nothing. Assuming that existence is identical with Being, this is essentially the argument which Hegel uses to derive the category of Determinate Being (Dasein), and hence Quality, from Being (Sein). Unlike McTaggart, however, Hegel does not assume that Being or existence is a quality. If he had made this assumption, his argument, like McTaggart's, would have been circular. In this respect Hegel's argument is certainly more cogent than McTaggart's; and it is, I think, essentially sound.

McTaggart's second argument to show that the existent must have some quality other than existence assumes the reality of negative qualities. I will discuss this argument in Section 6.

4. Something, then, is true of the existent other than its existence. And what is true of something is, according to McTaggart, a quality of that something. The category of Quality, according to McTaggart, is indefinable. What is true of something is a quality of that something. But this does not amount to a definition of Quality; and any attempt to define Quality in this way is said to involve a vicious circle.

If we try to define "true of" and "false of", we can only say, I think, that $X$ is true of $A$ when a belief which asserts that $X$ belongs to $A$ is a true belief, and that $X$ is false of $A$ when a belief which asserts that $X$ belongs to $A$ is a false belief. Now to say that $X$ belongs to $A$ is equivalent to asserting that $X$ is a quality of $A$. And thus our definition of quality would contain a vicious circle.
Insofar as Quality is indefinable, it is claimed that we can only understand the meaning of that term by citing examples of qualities. McTaggart lists goodness, happiness, redness, and sweetness as examples of qualities.

5. I believe that McTaggart is correct in claiming that the category of Quality is indefinable. But it is sometimes claimed that the concept of a quality is equivalent to that of a monadic predicate; or, alternatively, to that of a monadic universal. To the extent that these are considered to be definitions of Quality they are clearly unsatisfactory. In the first place, the claim that a quality is a monadic predicate, insofar as it does not appeal to what is a merely syntactical distinction of doubtful ontological significance, is ultimately circular. If we attempt to find out what is meant by a predicate of something, we will inevitably be told that a predicate of something is that which is true of something; and if we then define Quality as that which is true of something we will involve ourselves in the vicious circle mentioned above.

The claim that a quality is a monadic universal is equally unsatisfactory, but for different reasons. Firstly, the claim that qualities are universals is clearly a synthetic truth, if it is a truth at all. And it is doubtful whether it is true. The existence of what are ostensibly item-specific or non-repeatable qualities is sufficient to cast doubt upon the claim that part of what we mean by Quality is that all qualities are universal. Secondly, there is nothing in the notion of universality, as such, which implies that what is universal is true of something; and if there is, the definition, once again, would be circular. The concept of
universality is unquestionably rather vague; but it certainly involves the concept of repeatability, and there is nothing in the notion of repeatability, as such, which implies that what is repeatable is true of something. Relations, for example, are often considered to be universal, hence repeatable, entities; but they are not obviously true of their terms in the sense that qualities are.

There might still remain the suspicion that McTaggart's criterion for what entities are qualities is unduly dependent upon what Broad has described as a child-like trust in the guidance of the structure of sentences in the Indo-European languages. I think that this suspicion is unwarranted. But to allay any such suspicion I shall propose an alternative criterion. At the beginning of his discussion of the relation between thought and reality in Chapter 15 of Appearance And Reality, F.H. Bradley makes the following comments.

If we take anything considered real, no matter what it is, we find in it two aspects. There are always two things we can say about it; and, if we cannot say both, we have not got reality. There is a 'what' and a 'that', an existence and a content, and the two are inseparable. That anything should be, and should yet be nothing in particular, or that a quality should not qualify and give a character to anything, is obviously impossible. If we try to get the 'that' by itself, we do not get it, for either we have it qualified, or else we fail utterly. If we try to get the 'what' by itself, we find at once that it is not all. It points to something beyond, and cannot exist by itself and as a bare adjective. Neither of these aspects, if you isolate it, can be taken as real, or indeed in
that case is itself any longer. They are distinguishable only and are not divisible."

In accordance with this distinction between the *that* and the *what*, I should say that any determinable or determinate element of the *what* is a quality. This criterion has two important advantages over McTaggart's. The first is that it does not involve any appeal to what might be construed as a merely syntactical distinction between subject and predicate. The second is that it does not allow us to uncritically categorise existence as a quality. Existence, being identified with the *that*, cannot be an element in the *what*—hence it cannot be a quality. Furthermore, such a criterion is entirely consistent with our previous interpretation of the assumption that something exists—according to which the proposition "something exists" is understood to mean that existence has some determinate nature or quality.

6. Once we accept that something exists, and that the existent has some quality other than existence, then it follows, according to McTaggart, that there are qualities which the existent lacks.

Squareness and triangularity are incompatible, and so are red and blue. This is sufficient to prove that whatever exists does not possess certain qualities. If it is square, it is not triangular; if it is triangular it is not square. If it is neither, then there are at least two qualities which it does not possess."
I do not think that this inference is justified at this stage. We may conclude that, if some qualities are known to be incompatible, then these qualities cannot be true of the existent in the same respect, or under the same conditions. But unless we assume that all incompatibility is reducible to the sort of incompatibility which exists between contradictory qualities, i.e. between $X$ and $\neg X$, we do not, as yet, have a sound basis for concluding that there are some qualities which the existent lacks. Now McTaggart does take the further step of introducing what are sometimes called "negative" qualities; and if we can accept the reality of negative qualities then we may be entitled to conclude that there are some qualities — specifically, certain negative qualities — which the existent lacks. Unfortunately, McTaggart has deduced the existence of negative qualities from the assumption that there are qualities which are incompatible, and not the other way round.

Broad has criticised this argument on the grounds that McTaggart has implicitly assumed the truth of the empirical premiss that there are incompatible "positive" qualities. This is essentially the same criticism which I have made. However, Broad is prepared to grant the truth of the premiss on the grounds that, although it is an empirical premiss, it is obviously true — if something, $x$, is red, then it is obvious, according to Broad, that it cannot also be blue. But this is not strictly correct. What is certainly true is that something cannot be both red and blue in the same respect or under the same conditions. It may, however, be red in one respect, i.e., over one part of its surface, and blue in another, i.e., over another part of its surface. And we cannot, at this stage of the inquiry, rule out the possibility that the existent does, in fact, have
spatial dimensions. The important point is that we cannot say that there are incompatible "positive" qualities unless we assume something more about the existent than that it has some qualities other than existence. And this is more than we are, at present, entitled to assume.

It follows that McTaggart's second argument, in Section 60, to show that the existent has some quality other than existence, is illegitimate. The argument there is that if nothing is true of the existent except the fact that it exists, then it will not be true of it that it is a square. By a process of simple obversion, and by applying the law of Excluded Middle, McTaggart reaches the conclusion that the existent would therefore be not-square; and hence that something, namely the negative quality not-square, will be true of the existent other than the fact that it exists. But it is clear that such an inference is valid only if we assume the reality of negative qualities.

7. Although McTaggart's own arguments are unacceptable, we can, I believe, still accept his conclusion that the existent lacks certain qualities; as well as his subsequent conclusion that the existent has as many qualities as there are positive qualities. Both conclusions rest upon the assumption that there are negative qualities - the argument for the latter consisting in an application of the law of Excluded Middle, to the effect that, for any positive quality, $F$, then the existent will either have the quality $F$ or lack the quality $F$, and therefore have the corresponding negative quality, not-$F$. 
The reality of negative qualities has been doubted by some philosophers. But these doubts have not generally been supported by cogent arguments. And in the absence of any such arguments I consider the reality of negative qualities to be self-evident. Those criticisms which have been directed against McTaggart's use of negative qualities have almost invariably been directed against his particular analysis of such qualities, and not against their reality as such. For example, in his review of Volume One of *The Nature of Existence*, A.E. Taylor makes the following remarks.

I should have said that so far as I can see, "not-phoenix" is not a single characteristic at all. It is true alike of the integer 4, of the apostle on whose eve I am writing these lines and of the argument about the action for libel in the last paragraph that none of them is a phoenix. But I do not see that this entitles us to conclude that there is any character of not-being-a-phoenix which the integer, the apostle, and the argument have in common....It is still more doubtful whether "phoenix" can be said to be a part of the characteristic "non-phoenix". Prof. Broad's observation seems to me unanswerable. "What kind of constituent is non?" For, of course, to say that "phoenix" is one constituent of "non-phoenix" implies that non is the other constituent. Of course, in a sense, you may say that "not-phoenix" is derived from "phoenix", and so it is, but not by composition, by the radically different and ultimately simple process of negation.
There are essentially two points here. The first concerns the reality, the second the analysis, of negative qualities. Concerning the reality of negative qualities the obvious response to Taylor is to simply disagree with his intuition on this matter - for that is all his criticism amounts to. In the first place, it seems to me to be just as obvious that the integer, the apostle, and the argument all do have something in virtue of which we can truly say that each of them is not a phoenix; and this is the negative quality \textit{not-phoenix}'. What is more, Taylor implicitly accepts this fact when he says that not being a phoenix is \textit{true of} each of the above entities. Now, according to McTaggart's criterion, what is true of something is a quality of that thing. Hence, not being a phoenix is a quality of the integer, the apostle, and the argument. In formulating his criticism Taylor has thus implicitly accepted the truth of the theory he wishes to criticise. He might not, of course, accept McTaggart's criterion of a quality. But that is a different matter, and one which is not addressed in the article.

Secondly, it is doubtful whether the extent to which negative qualities figure in our common sense and scientific views of the world is fully appreciated by Taylor. If we are to reject negative qualities such as \textit{not-phoenix} as intrinsically impossible or absurd, then we ought to be consistent and reject all negative qualities. But this is when difficulties arise. For one thing, it might be argued that a consistent and ultimate epistemic distinction between positive and negative qualities is difficult, if not impossible, to carry out. Are we to classify as "negative" only those qualities which are denoted by predicates which contain "non" or "not" as a prefix? But that would surely be an example of the child-like trust in the
guidance of English syntax of which Broad has spoken so disparagingly. Is darkness, for example, a positive or a negative quality - i.e. not-light? Is ugliness a positive or a negative quality - i.e. not-beautiful? Again, is pleasure a positive or a negative quality of certain mental states; or is it, as Schopenhauer and Plato have claimed, the absence of a painful quality? Clearly, such examples can be multiplied indefinitely.

This might not constitute a decisive reply to the critic of negative qualities. But it does highlight the fact that, since the range of actual, as distinct from ostensible, negative qualities may be considerably wider than a consideration of ordinary language might suggest, the rejection of negative qualities might be of much greater ontological significance than the critic of negative qualities would have us believe it is. The ultimate price we have to pay for the elimination of negative qualities from our ontology may, in fact, prove that any attempt to do so is simply misguided.

8. The second objection to McTaggart's use of negative qualities is concerned, not so much with their reality, but with the way in which he analyses such qualities. McTaggart's analysis of negative qualities is to be found in Section 31 of *The Nature Of Existence*, in the context of an argument which professes to show that all real qualities are existent.

But, if we go further, we shall find a way in which every characteristic is either a characteristic of the existent, or else is an element in a characteristic of the existent. For, with any characteristic whatever, it is true of everything, and
therefore of everything existent, that either it has that characteristic or it does not have it. And not to have a characteristic is equivalent to having the corresponding negative characteristic. If a man cannot be a phoenix, then every man will have the negative characteristic of not-phoenix. This characteristic will be existent, and since "phoenix" is an element of "not-phoenix", it will also be existent. For it seems clear that the parts of what exist must themselves exist. And thus all characteristics will exist, whether they are or are not characteristics of existent things."

This argument has been criticised by a number of people"; and I think that it is, in fact, fallacious, and based upon assumptions which are rather implausible. There is also reason to believe that McTaggart himself subsequently abandoned the argument, as well as the conclusion which it professes to prove. In "An Ontological Idealism", which was the last of his papers to be published in his lifetime, he makes the following comments concerning non-existent realities.

Existence appears to me to be another indefinable quality, which is such that all which is existent is necessarily real, but all which is real is not necessarily existent. It has been said that propositions, possibilities, qualities, and relations are real without being existent. I do not think that the independent reality of propositions or possibilities can be justified. But qualities and relations (which may be grouped together under the general name of characteristics) are in themselves real without being existent. The qualities and
relations of existent substances, however, may be called, as such, existent. [My emphasis]¹¹

In this statement, McTaggart does not commit himself to the view, which he had taken in The Nature of Existence, that all qualities are necessarily existent. Hence, I suggest, he does not commit himself to the analysis of negative qualities set out there. I think that this was a sound decision. In the first place, the argument, as stated in Section 31 of The Nature Of Existence, is clearly fallacious. The predicate expression "phoenix" is, as McTaggart suggests, an element or part of the predicate-expression "not-phoenix". But this does not imply that the quality phoenix is a part of the quality not-phoenix, any more than the fact that the predicate expression "male" is an element or part of the predicate-expression "female" implies that the quality male is a part or constituent of the quality female.

Furthermore, even if we eliminate this confusion between predicate-expressions and qualities it is still rather questionable to claim that red, for example, is part of the negative quality not-red - which is what McTaggart seems to be saying in the first of the above passages - and both Taylor and Broad have justifiably objected to such a view. On the other hand, it is, perhaps, less questionable to claim that red is an element in the analysis of the complex negative quality not-red; and this is, perhaps, what McTaggart should have said in Section 31, and what he does say in Section 63, when defining the concept of a Complex Quality.

A complex quality is one which does not consist of an aggregate of other qualities, but which can be analyzed and
defined by means of other characteristics, whether qualities or relations, or both. Thus, if we defined conceit as the possession of a higher opinion of oneself than is justified by the facts, conceit would be a complex quality, since it is capable of analysis, but not of analysis into an aggregate of other qualities. Every negative quality is complex, for it can be analyzed into two terms, of which one is negation and the other is the corresponding positive quality, and it is not an aggregate of those terms. Since a complex quality is not an aggregate of the characteristics which enter into its analysis, it is better to call them elements, and not parts, of the complex quality.  

The distinction to which McTaggart appeals here is the distinction between compound and complex qualities. This distinction is based upon a more general classification of qualities as simple, compound, or complex. All qualities, according to McTaggart, are either capable of analysis, or incapable of analysis. Those which are capable of analysis are said to be defined by a statement of that analysis, and those which are incapable of analysis are said to be indefinable. Those which are capable of analysis are either compound or complex. A compound quality can be analysed into an aggregate of other qualities. A complex quality, on the other hand, is not analysable into an aggregate of other qualities; although it is said to be analysable and definable by means of other characteristics (qualities and relations). Simple qualities are neither analysable nor definable.
Now there is, I suggest, some vagueness in McTaggart's definitions here. I think we can understand pretty clearly what he means by saying that a compound quality, such as red-and-square, is analysable into two qualities, red and square. But it is not at all clear what he means by saying that a complex quality is analysable by means of other characteristics. And it is very difficult to accept that those characteristics, by means of which a complex quality is said to be analysed or defined, are in any genuine sense elements of that quality. Consider, for example, the analysis of the complex quality not-X. On the one hand Taylor is simply wrong when he claims that, according to McTaggart, X and not are parts of the complex quality not-X. They are certainly not considered to be parts of that quality in the sense that red and square are parts of red-and-square. On the other hand, it is difficult to understand what McTaggart does mean by saying that they are "elements", but not parts, of the quality. He obviously wants to say that they in some sense make up the quality — otherwise his claim that phoenixhood is existent as an element in non-phoenixhood would be of doubtful value in trying to prove that all qualities are existent. The distinction between being a part of, and being an element in, is, however, in that case, somewhat difficult to sustain — especially in view of McTaggart's rather flexible use of the concept of a part.

The fact is, I think, that McTaggart has simply conflated the notions analysable into and analysable in terms of, and concluded that, since all complex qualities are analysable in terms of other characteristics, they are therefore analysable into those characteristics¹⁷. Now, even though McTaggart has not clearly stated what the distinction between an analysis in terms of certain
characteristics, and an analysis into certain characteristics
consists in, I think we can agree that some such distinction is
intelligible and valid. I think we can also agree that McTaggart is
quite unjustified in concluding that, since a complex quality is
analysable in terms of some other characteristics, those
characteristics are therefore elements in, or make up, in some
unequivocal sense, that complex quality. In the case of negative
qualities in particular, it seems quite certain that the
characteristics in terms of which they are analysed are not, as such,
constituents of those qualities.

The fact that McTaggart's own analysis of complex qualities in
general, and negative qualities in particular, is rather questionable
does not imply that the distinction between compound and complex
qualities is itself questionable. Quite clearly, there are qualities
which are analysable by means of other characteristics, but which are
not analysable into other characteristics.

9. The reality of compound qualities is, perhaps, less obvious. A
compound quality is said to be a quality which is analysable into an
aggregate of other qualities. It is not necessary, however, that the
qualities which form part of the analysis of a compound quality
should be simple; and, as far as the reality of compound qualities
goes, it is prima facie possible that all qualities should be
compound or complex - i.e. that there should be no unanalysable or
simple qualities.

McTaggart provides us with some examples of what he considers to
be compound qualities. Red-and-sweet, square-and-triangular, are both
claimed to be examples of compound qualities3*. If we allow that
what he means by a compound quality is what others, such as Armstrong\textsuperscript{11}, have called "conjunctive qualities", then there would seem to be very good reasons for believing that there are such qualities. But even if we are willing to accept that the concept of a compound quality is intelligible, it is doubtful whether all of the qualities mentioned by McTaggart can be said to be genuine compound qualities. The claim that \textit{square-and-triangular} is a real quality is, I think, unacceptable. A compound quality, to be real, must be one quality; that is to say, it must be a unity. But we cannot simply unite incompatible qualities; and \textit{square} and \textit{triangular} are incompatible. The criterion for the reality of qualities is the same as for any other kind of entity. No real entity can be self-contradictory; and since a square-and-triangular quality would be self-contradictory it cannot be real.

McTaggart attempts to demonstrate that the compound quality \textit{square-and-triangular} is existent, and therefore real, but the argument he uses is quite spurious. He begins with the assumption that all existent qualities are real. He then argues that, since no existent is \textit{square-and-triangular}, every existent must be \textit{not-square-and-triangular} – i.e., the quality \textit{not-square-and-triangular} must be true of every existent. And, since \textit{square-and-triangular} is assumed to be an element in the existent negative quality \textit{not-square-and-triangular}, the compound quality \textit{square-and-triangular} must, he concludes, exist and be real.

The argument clearly depends upon the assumption that the negative quality \textit{not-square-and-triangular} can be analysed into the compound quality \textit{square-and-triangular}, and an element of negation. But we have seen that there is no reason to believe that this assumption is
true. Furthermore, since the compound quality square-and-triangular is self-contradictory, we should, in fact, conclude that the assumption must be false. The fact that this particular argument is spurious does not, however, undermine the soundness of the general contention that some compound qualities are real. To support this general contention, I think that we should draw a distinction between compossible and compatible qualities. Two qualities are compossible if they can be true of one and the same substantive. They are compatible if they can be true of one and the same substantive in the same respect or under the same conditions. Thus red and green are compossible, but incompatible qualities. We might then maintain that any conjunction of compossible qualities is a compound quality.

A difficulty may arise, however, when we attempt to explain what we mean by a conjunction of qualities. Is it an actual, i.e., an existent conjunction, or a merely possible conjunction? By an actual conjunction I mean a conjunction of qualities which are true of a single substantive. A merely possible conjunction, on the other hand, is a conjunction of qualities which is not true of any single substantive. I think that the most plausible case for the reality of conjunctive qualities depends on the assumption that the only real conjunctive qualities are those which are analysable into qualities which are true of a single substantive. A conjunctive quality, we may say, is an actual conjunction of qualities. And qualities are actually conjoined insofar as they are true of one and the same substantive. An actual compound quality is thus a conjunction of compossible qualities. If we understand the notion of a conjunctive or compound quality in this way, then there is, I suggest, no reason
to doubt that they are real. As long as the existent has more than one quality, then we may conclude that there are compound qualities.

10. The concept of a compound quality is directly related to that of the nature of the existent.

Since any two or more qualities form a compound quality, all the qualities possessed by any particular thing form a compound quality. And this compound quality may be called the Nature of that thing.11

With the qualification mentioned in the previous section concerning what count as actual compound qualities, we can, I think, accept this conclusion. The nature of an entity is distinct from a compound quality of that entity insofar as any two or more qualities of the entity will make up a compound quality of that entity; whilst the nature of the entity will comprise all those qualities which are true of it. A compound quality which does not include all the qualities which are true of an entity can be said to make up part of the nature, or to be a partial description of that entity. A partial description of an entity is itself a description of that entity, but a part of the nature of that entity is not itself a nature.

Broad has claimed that the view that the nature of a term is a compound quality comprising all those qualities which are true of an entity is illegitimate. He raises two objections which are relevant to our present discussion. The first concerns the notion of a compound quality. Broad claims that the reality of compound qualities is to be doubted.
No doubt such a sentence as "x is red and sweet" is intelligible, and no doubt it is of the same grammatical form as "x is red" where the grammatical predicate "red" is the name of a characteristic. But it would be most unwise to assume, on this ground alone, that the phrase "red-and-sweet" must be the name of a characteristic. And I know of no other ground for assuming it. I should have thought that "x is red-and-sweet" was simply a short way of saying "x is red and x is sweet", i.e., of recording the fact that the two characteristics, redness and sweetness, both inhere in the common subject x. If there is anything that could properly be called a "compound characteristic" it would seem to be the relational property, if such there be, expressed by the phrase "co-inhered in by redness and sweetness" and not anything expressed by the phrase "red-and-sweet".37

He then puts his objection in more general terms.

It seems to me that McTaggart's doctrine of simple, compound, and complex characteristics stands on two sadly weak legs. One is an a assumed analogy with certain fact about spatial wholes and our perception of them, which, when clearly stated, would appear not to hold. The other is a child-like trust in the guidance of the structure of sentences in the Indo-European languages, which would appear to be unwarranted.38

Now it seems to me that it is Broad himself who, while quick to point out what he considers to be McTaggart's naive and probably
unjustified trust in the syntax of the English language as an accurate reflection of the ontological structure of the world, might fairly be charged with displaying that very same naivety. In making this criticism Broad has, I believe, ignored two important points. The first is that, from an epistemic point of view, it is equally legitimate to say that we are presented with the qualities of an entity as a whole or unity, and that the distinct elements of that whole are reached by a process of abstraction from that whole. In other words, we might maintain, in opposition to Broad, that the compound quality is both epistemologically and ontologically more fundamental than the elements into which it can be analysed; and, that statements of the form "x is red-and-sweet", insofar as they emphasise the unity of the distinct qualities which are true of x, are perhaps a more accurate guide to the ontological status of compound qualities than statements of the form "x is red and x is sweet". Put simply, it is possible that statements which stress the unity of the nature of an entity are more accurate than those which stress its diversity. Broad's criticism embodies a common fallacy - that of assuming that the elements into which a complex can be analysed are ipso facto more fundamental, in an ontological sense, than the unity of that complex.

The second point is that McTaggart did, in fact, more or less anticipate the kind of criticism which Broad has raised when he drew a distinction between unities of composition and unities of manifestation.

We can say just as correctly that the unity of the nature of A is differentiated into the qualities X, Y, and Z (taking these
to represent the whole number of the qualities) as we can say that the qualities $X, Y,$ and $Z$ are united into the nature of $A$.

It would seem that Broad has simply ignored this fact when criticising McTaggart's views on the concept of the nature of an entity. He is not alone, however, in invoking the fallacy mentioned above when objecting to the reality of compound or complex qualities. It is implicit, for example, in Reinhardt Grossmann's recent critique of complex qualities. Despite F.H. Bradley's sustained polemic against this fallacy, Grossmann's views are evidence that it persists.

11. Broad's second objection to the concept of the nature of a term is that there cannot be a compound quality which comprises all of the qualities of a term - since such a compound quality would have to contain itself as a component. And this, he insists, is nonsensical.

I think that this objection can be easily met if we modify the definition in a way which was originally suggested by McTaggart himself, and endorsed by S.V. Keeling in his review of Broad's Examination. The suggestion is that the definition be amended so that the nature of an entity is understood to be made up of all the non-compound qualities which are true of that entity. This definition eliminates the possibility of the nature of an entity being included as a part of itself, and thus undermines Broad's criticism.
12. I have argued that compound or conjunctive qualities are, in a qualified sense, real. But it does not follow from this conclusion that such qualities are ultimately made up of simple qualities. McTaggart argues, however, that unless we assume that all compound qualities are ultimately made up of simple qualities we will be faced with a vicious infinite regress.

Let us assume that the analysis of a compound quality always yields further compound qualities, such that no analysis of our original compound quality can ever yield qualities which are incapable of further analysis. Such a situation is, according to McTaggart, impossible.

If we ask what any particular quality is - what we mean when we predicate it of anything - the answer, in the case of any quality which is not simple, is that this depends on what the terms are into which it can be analyzed. And, therefore, if in any case the analysis could go on endlessly, what the quality is, and what we mean when we predicate it, would depend on the final term of a series which had no final term. Thus it would be nothing in particular, and we should mean nothing by predicing it. This is impossible in a quality. The series of analyses, then, cannot be endless, but must end in an analysis consisting entirely of simple characteristics."

McTaggart then adds that the vicious regress does not arise in case the compound quality has an infinitely differentiated analysis - that is to say, in case the quality is analysable into an infinite number of simple qualities.
In spite of, and perhaps because of, this qualification, I do not think that the argument is conclusive. In the first place, the vicious regress we are supposedly involved in, by denying that there are any simple qualities, is essentially a semantic one. Let us assume, for example, that we wish to predicate a compound quality, red-and-square, of some entity x. Our judgement can then be expressed in the proposition "x is red-and-square". Now McTaggart's argument, it seems to me, is based upon the assumption that we cannot know the meaning of this proposition unless we know the meaning of each of its constituents which have meaning. Assuming that "red-and-square" is a constituent of the proposition which has meaning, it is then claimed that we could not, in turn, know the meaning of this constituent unless we know the meaning of each of its constituents which have meaning. It is clear that this process cannot go on indefinitely, and that, if our original proposition is to have meaning, we must eventually reach some constituents of that proposition which have meaning, but which do not themselves have any constituents which have meaning. These can be said to be the "simple" or "unanalysable" constituents of the proposition. In the case of the proposition "x is red-and-square" it is assumed that "red" and "square" are among its simple or unanalysable constituents.

Apart from the questionable assumption that the meaning of a proposition is dependent upon the meaning of its constituents, the argument is so far plausible. Let us assume, then, for the sake of the argument, that we could never understand the meaning of a proposition which does not have simple or unanalysable constituents; hence, that we could never understand the meaning of the predicative judgement that x is red-and-square unless the proposition "x is red-
and-square" has simple or unanalysable constituents. Let us also assume that "red" and "square" are among those simple or unanalysable constituents. McTaggart draws two conclusions from these premisses. The first is that if we are to know the meaning of "x is red-and-square", we must know the meaning of "red". The second is that, since "red" is a simple or unanalysable constituent of the proposition, the meaning of "red" - i.e. the quality denoted by "red" - must be simple, otherwise we could not know the meaning of our original judgement.

The first of these conclusion is justified, given the truth of the premisses. But the second obviously is not. We may accept that, to know the meaning of "x is red-and-square", we must know the meaning of "red"; and that to know the meaning of "red" we must have knowledge of the quality denoted by that term. But it does not follow that, to have knowledge of a quality, we must have knowledge of all its constituents. If we assume that "red" is, in fact, the name of a compound quality, it does not follow that, to have knowledge of that quality, we must have knowledge of all those qualities which make it up. To suppose otherwise is, as Broad has pointed out, to confuse knowing a characteristic with knowing its ultimate analysis. It is therefore possible to know the meaning of a judgement which predicates a compound quality of an entity without thereby knowing each of the qualities which make up that compound quality.

It might help to clarify this point if we appeal to a distinction which Leibniz drew between clear and distinct ideas. We can be said to have a clear idea of a compound quality insofar as we are able to recognise instances of that quality and distinguish them from instances of other qualities. And we can be said to have a distinct
idea of a compound quality insofar as we can analyse that quality into its constituent parts. In both cases we have knowledge of the quality; but the fact that we have clear knowledge of it does not necessarily imply that we have distinct knowledge of it. McTaggart’s attempt to prove that there must be simple qualities seems to me to be ultimately based upon the failure to recognise the importance of this distinction.

But even if we do accept McTaggart’s argument in principle we are still faced with difficulties. In Section 64 McTaggart claims that it is possible that there should be a compound quality which has an infinitely differentiated analysis - i.e., which comprises an infinite number of simple qualities. He also claims that such a quality could not be known by the human mind. But in the footnote to Section 64 on page 65 he suggests that it is possible for such a quality to be true of the existent - hence, that a predicative judgement involving such a quality would be meaningful. According to his earlier view, however, it would be impossible to know the meaning of a judgement involving a compound quality unless we knew the complete analysis of that quality. And since it is impossible to know the complete analysis of any compound quality which has an infinitely differentiated analysis, any judgement involving such a quality must be meaningless - which contradicts his previous assumption that such a judgement would be meaningful. His argument to prove that there must be simple qualities is therefore incompatible with his claim that there may be qualities which have an infinitely differentiated analysis.
13. Even though McTaggart's attempt to prove that there must be simple qualities is inconclusive I think it is almost certainly true that some qualities are simple or unanalysable in McTaggart's sense. Perhaps the most obvious examples are determinate instances of colour-qualities - e.g., determinate shades of red; or the qualities of painfulness and pleasurableness which characterise certain mental states.

The claim that such "sensible" qualities are simple has, however, been criticised by D.M. Armstrong. In formulating his criticism Armstrong draws a distinction between what is epistemologically simple and what is ontologically simple; and between what is epistemologically complex and what is ontologically complex. A determinate shade of colour, he suggests, might be epistemologically simple, whilst being ontologically complex. The same, I suppose, would be said of an instance of painfulness. The reluctance which some philosophers have shown towards accepting the validity of such a distinction is determined, according to Armstrong, by "the fantasies of infallibility and omniscience which have bedevilled enquiry generally, and philosophy in particular, from the beginning."

Most of us have painfully learnt the lesson which the Phenomenalists have not fully learnt: that the general nature of physical objects is given to us by perception only very imperfectly. But the repressed appetite for infallibility and omniscience then retreats to the universals which the objects instantiate. Among these universals, at any rate for British Empiricists, it settles in particular upon the perceived qualities and relations. In fact, however, perceived qualities
and relations are as much epistemological icebergs as any other aspect of reality.

If we ask what in fact the colours are, the physicalist reductions of those properties to light-emissions of different wave-length promises to reproduce the required logical characteristics."

Insofar as this objection is not merely an argument *ad hominem* it appears to me to be quite inconclusive. In the first place, it ignores the fact that, for the proponents of such a view, the being or existence of such qualities consists in, or is dependent upon, their being perceived. They simply do not, and cannot have any qualities other than those they are perceived as having. If a sensible quality is perceived as being simple, then it is *ipsa facto* simple. The claim that our knowledge of physical objects is given to us only imperfectly in perception is one which most, if not all, proponents of the view under discussion would accept. But it does not follow from this that our knowledge of the sensible qualities caused by such objects is therefore imperfect.

Secondly, the objection ignores the fact that, ultimately, every inquiry, be it scientific or philosophical, rests upon the assumption that something, whether it be a belief, a sense-datum, or a physical object, can be known to have at least some of those characteristics which it is cognised as having. Were it otherwise, we could never be justified in attaching any degree of certainty to the results of any inquiry whatsoever. And since, it is assumed, the existence or being of the sensible qualities such as redness and painfulness, and that of our own conscious mental states, consists in their being
perceived, they, if anything, are the entities which are most likely to be capable of being known to have those characteristics which they are cognised as having. And it is the recognition of this fact, rather than any repressed desire for omniscience or infallibility, which, I would suggest, is the basis for the claims made by certain philosophers" to know that certain sensible qualities are simple.

Thirdly, the attempt to identify sensible colours with electromagnetic radiation of particular wavelengths seems to me to simply conflate the proximate cause of a phenomenon with its effect. The fact that the proximate cause of sensible redness is complex does not imply that redness itself is complex.

14. It is sometimes argued that determinate instances of colour cannot be simple because they must have qualities such as brightness and hue, as well certain formal qualities such as being a colour, being existent, being a quality, etc. The reply to this argument is that such qualities form part of the nature of the colour-instance. And the fact that a quality has a complex nature does not imply that it is, itself, complex. The distinction between a quality and its nature is made by McTaggart in Section 90 of *The Nature Of Existence*.

But the characteristics of a characteristic are no more parts or elements of it than the characteristics of a substance are parts of that substance. They are, indeed, parts of its nature, but that is a very different thing.

This may be made clear by examples. It is a quality of redness that it is the colour of doctors' gowns. It is a quality of triangularity that it is an object of thought to a
particular school boy at a particular time. These qualities are parts of the nature of the qualities of redness and triangularity. But they are not parts of the qualities redness and triangularity themselves. Redness is a simple quality, and has no parts or elements. And the parts of triangularity are those which are given in its definition, which do not include its contemplation by a particular schoolboy.51

The failure to acknowledge this distinction is, according to Broad, responsible for many of the vicious infinite regresses which F.H. Bradley maintained are involved in the categories of Relation and Quality.

15. There are, then, very good reasons for believing that some qualities are simple. And I know of no cogent argument against the possibility of simple qualities. In any case, the reality of simple qualities is not, in my opinion, essential to the soundness of McTaggart's general metaphysical theory. The only time that an appeal to the reality of simple qualities is used to establish some important metaphysical conclusion is in Section 420, where he attempts to show that the species of cognition which he calls "the awareness of characteristics" cannot fulfil the conditions required to form a determining correspondence system. And even there, the appeal to the reality of simple qualities is only secondary to the main argument.

With the exception of the claim that existence, itself, is a quality, we may agree, then, with McTaggart's conclusion that the existent must have some qualities, and that these qualities may be
classified as being either simple, compound, or complex. Having determined that the existent must have some qualities, the next step is to determine what it is, if anything, that those qualities are true of. And this, according to McTaggart, is Substance.

16. The transition from the category of Quality to that of Substance occurs at the beginning of Chapter 6. The argument for the reality of substance is as follows.

Whatever exists, then, has qualities. These qualities will themselves be existent, and will have qualities, and so on without end. But, at the head of the series, there will be something which has qualities without being itself a quality. The ordinary name for this, and I think the best name, is Substance.

The rest of that chapter is devoted to criticism of attempts to eliminate the category of substance — specifically, to criticism of attempts to either define a substance in terms of, or eliminate the category in favour of, the category of Quality.

As it stands, the above argument is hardly adequate to sustain the metaphysical weight which its conclusion has to bear. In the first place, it is *prima facie* possible that the something which has qualities, without itself being a quality, is a relation. This possibility is subsequently ruled out by McTaggart's revised definition of substance in Section 67. According to the revised definition, substance is understood to be that which exists, and has qualities and relations, without itself being a quality or a
The justification for this revision is, however, dependent upon the unargued assumption that a relation cannot exist in its own right. Although, as I shall subsequently argue, McTaggart is correct in making this assumption, it has been claimed, by some adherents to the doctrine of "external" relations, that a relation is both logically and ontologically independent of the terms which it relates. Even though this view is arguably false, it ought to have been considered by McTaggart.

Secondly, McTaggart's deduction involves the tacit assumption that qualities, like relations, are not ontologically independent entities. Again, I believe that he was correct in making this assumption. But it is an assumption which has been rejected by some of those philosophers who hold the view that what we call "things" or "substances" are simply bundles of qualities; and that these qualities are the basic or most fundamental ontological entities.

It might be argued that, insofar as qualities are true of something, it is impossible that qualities should be ontologically fundamental entities. But to argue thus is to confuse a criterion of a quality with a definition of Quality. If anything is true of something, then it is a quality of that something. But it does not follow that every quality is true of something. And, since McTaggart has claimed that Quality is indefinable, he is not entitled to claim that it is part of what we mean by Quality that a quality must be true of something.

McTaggart's attempt to deduce the category of Substance from the assumption that the existent has some qualities must, then, be considered to be a failure.
17. Although McTaggart's own attempt to deduce the category of Substance from the assumption that the existent has some qualities is unsuccessful, I believe that a valid deduction is possible.

Let us assume that the existent has some quality. The proposition "some quality exists" will then be true. Now it seems to me that there are only two plausible ways in which this proposition can be analysed. It might be understood to mean that existence is true of some quality. But this would imply that existence is a quality, and, following Kant, we have rejected this view.

On the other hand, the proposition might be understood to mean that some quality is true of existence. In that case, there would be something, namely existence, which has a quality without itself being a quality. And since existence is obviously not a relation, there will be something which has a quality, without itself being a quality or a relation; and this, as McTaggart points out in Section 67, is the traditional definition of substance.

From the premisses that the existent has some quality, and that existence is not a quality or a relation, we may thus derive two extremely important conclusions. The first is that the category of Substance is a valid category of the existent. The second is that existence is rightly categorised as substance. The importance of these conclusions will become evident in our subsequent discussion.

18. I have argued that the category of Substance is a valid category of the existent. Attempts have been made to avoid a commitment to this category, and some of these are discussed by McTaggart in Sections 66-70. Before considering this discussion it should, however, be pointed out that it is not strictly necessary to
discuss these views if our argument in the previous section is sound. If it is sound, then any attempt to avoid a commitment to the category of Substance must be unsuccessful. But it will help to strengthen our position if we can show, independently of that argument, that such attempts are inevitably unsuccessful.

19. The first view which McTaggart considers is that which considers the category of Substance to be superfluous, and claims that a consistent ontology need only employ the category of Quality. The suggestion is that the group of qualities which are ordinarily predicated of a substance may exist in their own right, without being predicated of an underlying substance or substratum; and, that what we mean by a "thing" is simply these qualities insofar as they are related to each other in a particular way, or insofar as they form a particular kind of unity. This suggestion might be interpreted in either of two ways; and both, according to McTaggart, lead to unacceptable conclusions.

If we understand the suggestion to mean that no quality is predicable of anything, then, McTaggart argues, we are obliged to accept the conclusion that the theory is incompatible with its own truth; since, if the theory is true, we could not say of the group of qualities which, it is assumed, make up the thing, that it is a group, or that it is existent. Nor could we say of the qualities themselves that they are qualities, or that they are existent.

I believe that this argument is quite conclusive if we accept the implicit premiss that predication is not itself analysable in a way which is consistent with the theory in question. But some "bundle theorists", notably Stout, have claimed that predication...
essentially involves the assertion that some quality is a constituent of a whole or group comprising other qualities. For example, the judgement "John is bald" is understood to mean that there is a group of qualities, denoted by the term "John", which has, as a member, the quality of baldness.

Now this might be an acceptable analysis of what I shall call *first order* predications - i.e., those involving qualities which are directly predicated of a concrete thing. But I do not think that such a theory can provide us with a satisfactory account of the sort of "higher order" predications mentioned by McTaggart. To say of the group of qualities denoted by "John" that it is a group, cannot be understood to mean that the quality of being a group is related, in the same sense as is, say, the quality of baldness, with other members of the group of qualities which make up John. What we want to say is that the quality of being a group is predicable of the group as a single entity; and to do this we have to introduce what Grossmann has called a "break in style". In order to accommodate such higher-order predications, the analysis of predication must, for the bundle theorist, take on two quite different forms. On the one hand, it will be construed as involving a part/whole relation - or at least something very like a part/whole relation. On the other hand it will be understood in its traditional Aristotelian sense.

It may help to clarify this point if we consider the following example. Let there be a group of qualities $A, B, C$ and $D$, which, we will assume, make up a thing, $x$. Let us also assume that we wish to predicate the quality of being fourfold of this group. Now we cannot interpret this predication as involving the assertion that the quality of being fourfold is a member of the group denoted by "$x$", 
since this would imply that the initial judgment is false - the group denoted by "x" would then be fivefold, comprising A,B,C,D and F, where F is the quality of being fourfold. Hence, the attempt to predicate such higher-order qualities of a thing must, if we accept the analysis of predication offered by the bundle theorist, be unsuccessful. And if we have recourse to the traditional view of predication to accommodate such qualities, then we must reject the original premiss that no quality is predicable, in the traditional sense, of anything. The theory is therefore incompatible with its own truth.

20. If, on the other hand, we understand the suggestion to mean that all qualities are predicable of something, then, according to McTaggart, we are faced with similar problems.

If we assume that all qualities are predicable of something, but not of substance, then statements such as "Smith is happy", which ostensibly predicate the quality happiness of a substance, Smith, must be analysed in a way which does not involve predicating the quality of a substance. The hypothesis is, however, that every quality is predicable of something. Now, if happiness is not predicable of a substance, Smith, then there is, according to McTaggart, nothing, in fact, of which this quality can be truly predicated. Let us assume, for example, that Smith's nature comprises the qualities of wisdom, goodness, consciousness, and happiness. It is clear, on the one hand, that happiness cannot be truly predicated of these qualities taken severally. On the other hand, it cannot consistently be predicated of these qualities taken as a group. If we attempt to predicate happiness of the qualities taken as a group,
then we must say that happiness is a "second-order" quality of the group of qualities which comprises wisdom, goodness, and consciousness. I am not sure that such a view makes sense. In any case it does not solve our problem, since we must the determine what the remaining qualities are predicable of. If we have recourse to the strategy used in deciding what happiness is predicable of we will inevitably involve ourselves in a vicious circle; since each quality must then be construed as being a second-order quality of the remaining qualities, with the result that there must be, and yet cannot be, a group of original or first-order qualities.

Although McTaggart does not explicitly point out, as I have, that the view in question ultimately involves a vicious circle, I think that his objection is fundamentally sound. But it is not very well expressed, and this has led Broad to claim that McTaggart has simply begged the question against the proponent of the bundle theory.

The supporters of the theory under discussion could have answered McTaggart as follows: "Our theory is that the sentence Smith is happy can be replaced without loss or gain of meaning by the sentence There is a certain complex quality, which includes as a component the quality of evoking the use of the name 'Smith' in certain men, and this complex quality contains as a component the quality of happiness. You have no right to insist that we shall interpret the copula in a way which is appropriate only to your interpretation of the subject and shall combine the unmodified copula with our modification in the interpretation of the subject."
Broad has, however, missed the point of McTaggart's criticism by conflating two quite different objections to the theory in question. McTaggart has not claimed that an alternative analysis of predication is unavailable to the bundle theorist. His initial objection is, in fact, based upon the assumption that something like the analysis proposed by Broad has a *prima facie* plausibility. His argument is that such an analysis amounts to the claim that no qualities are predicatable, in the traditional sense, of something else. And such a view, we have seen, is incompatible with the truth of that theory.

His second objection is that if we accept the traditional account of predication, and assume that all qualities are predicatable of something, then, by denying that any qualities are predicatable of substances, we are forced to conclude that some qualities, namely "first-order" qualities, are not truly predicatable of anything.

So, whether the bundle theorist accepts the traditional account of predication, or whether he accepts an alternative along the lines proposed by Broad, he faces decisive objections; and his attempt to avoid a commitment to the category of Substance must be pronounced a failure.

21. The two objections to the attempt to eliminate the category of substance which we have considered so far are, I believe, conclusive. In Section 67 of *The Nature Of Existence*, however, we find an objection of a quite different kind. This latter objection involves an implicit appeal to the Aristotelian notion that qualities and relations are not self-existent entities — that the existence of qualities and relations is dependent upon their being the
characteristics of some more fundamental entity which cannot be
categorised as a quality or a relation.

For no quality is existent in its own right. The only case in
which an assertion about a quality can be an assertion of
existence is that in which the assertion links the quality with
something else that exists - as when we say that courage was a
quality of Nelson. And if there was nothing to link it with
except other qualities, there would arise a vicious infinite
series. For the first term, with which we begin our series,
must be connected with something else that exists. If this
something else must also be a quality, it can only get its
existence by connection with a third existent thing, which,
being also a quality, can only get it by connection with a
fourth, and so on. And thus the connection of the first term
with the existent would depend on the last term of a series
which had no last term. It is therefore impossible to hold that
nothing exists but qualities. There must be something which
exists and has qualities without itself being a quality.

A similar argument will show that that which is existent and
has qualities without being a quality cannot be in every case a
relation. For a relation, like a quality, cannot be existent in
its own right, and a vicious infinite series would arise in the
same way as with qualities.  

The assumption that qualities and relations cannot exist in their
own right is, I believe, true. And if it is true, then McTaggart's
argument would conclusively undermine any attempt to eliminate the
category of Substance. But it is not argued for by McTaggart, so we must conclude that he considered it to be self-evident. I agree with McTaggart, and with Aristotle, that this premiss is self-evident; and that, as such, it is pointless to try and demonstrate its truth. What we can, and should do, however, is attempt to show why those who might not accept it as true should fail to do so. This is clearly not an easy task, and it is virtually impossible to anticipate every negative response to this assumption. But I think we can isolate the most likely reason why it might be thought to be false; and this is that the meanings of the terms involved have not been understood.

There are two important things to bear in mind when considering this assumption. The first is that both Quality and existence are assumed to be indefinable. The second is that, following Kant, we have assumed that all existential judgements are synthetic. Any judgement asserting the existence of a quality is, therefore, synthetic. Given these assumptions it is evident that no quality can exist in its own right. If we assume that Relation is also indefinable, the same point can be made.

At this point a difficulty arises for McTaggart. If we assume that no quality can exist in its own right, then his claim that existence is a quality is incompatible with that assumption - since existence would be a quality which exists in its own right. This is, in my opinion, a serious inconsistency in McTaggart’s general metaphysical theory. It is, of course, avoidable, by rejecting the assumption that existence is a quality; and this is what we have done by categorising existence as substance. But it is clear that either the assumption that no quality can exist in its own right, or the assumption that existence is a quality, must be removed from McTaggart’s theory. Both
are important. But the former is, I believe, essential to his attempt to prove the validity of the category of Substance; whilst the latter is, as I have maintained, neither true nor essential to prove the validity of that category. Nor is it, as we shall see, an essential feature of his general theory.

22. We have considered the attempt to eliminate the category of Substance in favour of the category of Quality, and concluded that any such attempt is futile. There is, however, another objection to the introduction of the category of Substance. It is sometimes argued that the category of Substance ought to be dispensed with, since the concept of substance as that which is the bearer of qualities and relations, without itself being a quality or a relation, is ultimately meaningless or vacuous. This type of objection, in its most explicit form, can be traced to Locke's attempt to explain the origin of our idea of substance.

And thus here, as in all other cases where we use words without having clear and distinct ideas, we talk like children: who, being questioned what such a thing is, which they know not, readily give this satisfactory answer, that it is something: which in truth signifies no more, when so used, either by children or men, but that they know not what; and that the thing they pretend to know, and talk of, is what they have no distinct idea of at all, and so are perfectly ignorant of it, and in the dark. The idea then we have, to which we give the general name substance, being nothing but the supposed, but unknown, support of those qualities we find existing; which we
imagine cannot exist *sine re substante*, without something to support them, we call that support *substantia*; which, according to the true import of the word, is, in plain English, standing under or upholding."

Our general idea of substance, according to Locke, is essentially relative and obscure. It is relative in the sense that it is a complex idea "constructed" from the ideas of qualities which we perceive directly, and the supposition that, since these qualities are not existent in their own right, there must be something in which they inhere, or which supports them. And it is vague in the sense that we cannot specify its nature other than by saying that it is the idea of an indeterminate something which stands under or supports qualities. The conclusion seems to be that such an obscure and relative idea cannot give us any genuine knowledge of reality; and, that the word "substance", insofar as it derives any meaning it has by being "attached" to an idea, can have at best a rather vague and ultimately relative connotation.

23. The cogency of this argument is, of course, debatable. It is open to a number of replies, perhaps the most obvious of which is to simply reject the epistemological premises upon which it is based. This is, essentially, the approach taken by Leibniz.

THEOPHILUS: I believe that this way of thinking is correct. And we have no need to 'accustom' ourselves to it, or to 'suppose' it; for from the very beginning we conceive several predicates in a single subject, and that this is all there is to these
metaphorical words 'support' and 'substratum'. So I do not see why it is made out to involve a problem. On the contrary, what comes into our mind is the concretum conceived as wise, warm, shining, rather than abstractions or qualities such as wisdom, warmth, light, etc., which are much harder to grasp. (I say 'qualities', for what the substantial object contains are qualities, not ideas.)

Leibniz makes a number of important points here. Firstly, he attempts to remove the supposed obscurity attached to the concepts of a "support" or "substratum" by claiming that the relation between a substance and its qualities is simply the ontological correlate of the perfectly familiar logical relation of predication. Secondly, he undermines the force of Locke's objection that the idea of substance is essentially relative by replying that it is unreasonable to expect that anything more should be contained in the idea of substance; since any attempt to further refine our idea of substance will inevitably succeed only by adding to it ideas of its qualities. He then points out that it is the idea of Quality, if anything, which is abstract or relative; since the primary object of perception is the substance as qualified in particular ways, and not a mere quality. To clarify this point we might appeal to a distinction which Armstrong has drawn between a "thick" and "thin" particular or substance. A "thick" substance is the substance as qualified by its many qualities or properties. A "thin" substance is the substance considered apart from its qualities - i.e., as the bearer or substratum of those qualities. Perception, we may say, presents us with a "thick" substance - i.e., a substance as qualified in a particular way, a
state of affairs or concretum. The ideas of particular qualities are only reached by a process of abstraction or selective attention.

I think that the most important point being made here is that it is unreasonable, even question-begging, to expect that the idea of substance should be more determinate than the idea of something which is the bearer or substratum of qualities. McTaggart himself makes this point in Section 68 of The Nature Of Existence.

To the conclusion that substance exists it has been objected that a substance is nothing apart from its qualities, and that therefore a conception of substance, as distinct from its qualities, is impossible, and the name itself is a meaningless word. But this is erroneous. It is, of course, quite true that a substance is nothing apart from its qualities. And if we were to try to form a conception of a substance which had no qualities, the undertaking would be as hopeless as an attempt to form a conception of a triangle without sides. But it does not follow that, because a substance is nothing apart from its qualities, it is not anything in conjunction with its qualities. And it does not follow that, because we cannot form a conception of a substance which has no qualities, we cannot form a conception of a substance with qualities.

He then goes on to make a general point about the kind of reasoning which, he believes, underlies Locke's criticism.

The fallacy which we have just discussed is of a type which is not uncommon, and which is generally worked out with the
same inconsistency as here. A and B can only exist in relation. Then of one of them, say A, it is asserted that, since A without B is nothing, A is nothing at all. And B, being left by itself, is now asserted to be the sole reality in the matter, and to be self-subsistent. But it does not follow that A is nothing at all, because it would be nothing out of relation to B. And if the argument were fatal to A it would be just as fatal to B."

24. McTaggart is certainly correct in pointing out that, if this is the kind of reasoning which lies behind the commonly held objection to the category of Substance, then it is fallacious. But there is an assumption implicit in McTaggart’s reply which is not made explicit, if at all, until Section 69, where he considers an objection to the category of Substance put forward by Stout. The assumption is that even though a substance cannot exist except in relation to its qualities, it is nonetheless something distinct from those qualities and that relation; and it is something which is the ground of, and not something that is generated by, that relation. It is acceptable to say that A and B are mutually dependent; and, hence, that neither could be without the other, as long as we assume that since A, for example, cannot exist except in relation to B, it is not, therefore, a merely formal product of that relation. The problem with the concept of substance, according to Stout, is that it threatens to collapse into the concept of a merely formal entity – as the logical product of the fact that certain qualities are related in a particular way.
What then is the subject itself as distinguished from its attributes? It would seem that its whole being must consist in being that to which its attributes belong. But how can the whole being of anything consist in its being related to something else? There must be an answer to the question, What is it that is so related?83

I think the essential point which Stout wishes to make is that if the concept of substance is to have any "content" — i.e., if substance is not to be a merely formal entity — then the fact that various qualities are predicated of substance cannot be correctly understood to mean that those qualities are simply related to each other, or united with each other, in a particular way. What the substance theorist must show is that there is a material distinction between substance and its qualities. And he must be able to say in what that distinction consists.

25. McTaggart's reply to this challenge is, however, quite unsatisfactory and uncharacteristically vague, even question-begging.

It may be admitted that the whole being of a subject cannot consist in its relation to its attributes — or, in our terminology, that the whole being of a substance cannot consist in its relation to its qualities. But, not to mention other elements which enter into the being of substance, and confining ourselves to its qualities, we must note that when we have said that a substance is related to its qualities, we have not mentioned the most important point. The substance is, no doubt,
related to its qualities. If Smith is happy, then there is a certain relation between the substance Smith and the quality of happiness. But this is not all. He is not only related to the quality of happiness. He is happy. And it is the latter which is fundamental. The fact that he is happy is the primary fact, and the fact that he is related to the quality of happiness is only derivative. For if the fact of his happiness could be reduced to his relation to the quality of happiness, then, on the same principle, his relation to the quality of happiness ought to be reduced to the two relations between that relation and its two terms - Smith and happiness. And so we should have started on such an infinite regress as has caused Mr Bradley to deny the reality of all relations.

Thus we may reply to Dr Stout's question as to what it is which is related by giving the qualities of the substance. Smith, who is related, is happy, he is also a man, and so on."

There are a number of ways in which this reply can be interpreted; and none, I think, is satisfactory.

It might be understood to mean that McTaggart has attempted to avoid the force of Stout's criticism by conflating two distinct senses of the copula - the "is" of predication, and the "is" of identity. But this is hardly satisfactory. When we say that Smith is happy we do not mean that Smith is identical with the quality of happiness. We mean that Smith, qua substantive, has the quality of happiness. And the predicative sense of the copula, it is generally understood, implies that the substantive term is a materially
distinct entity from the predicative term. Thus we are still left with Stout's question about what the material distinction between Smith and happiness consists in. Now, as long as McTaggart wishes to maintain a material distinction between Smith and happiness he cannot simply conflate the two senses of the copula. And if we are to be charitable, then we must assume that McTaggart's reply does not involve such an obvious equivocation.

A second possibility is that McTaggart is implicitly appealing to the category of Identity which Hegel introduced when describing the way in which the "surface" of a thing is related to its "substratum". Hegel's category of Identity is not, as McTaggart points out in his *A Commentary On Hegel's Logic*, equivalent to the logical Law of Identity. The statement that the surface of a thing is identical with its substratum is not, according to Hegel, a tautology. The category of Identity recognises the reality of a distinction between the surface and the substratum, but the distinction is a merely formal distinction.

The problem with both of these readings is that they do not allow us to acknowledge the reality of a material distinction between substance and its nature. The distinction, in each case, is merely formal. This is not to say that a material distinction between substance and its nature cannot be defended. An alternative reading is to understand McTaggart as saying that, although Smith and happiness are materially distinct entities, the judgement that Smith is happy primarily means that Smith and happiness are united in a non-relational manner; and that this non-relational unity of substance and quality is what Stout has called the *fundamentum relationis* - the ground of the of the existence of the relation
between Smith and happiness. This *fundamentum relationis* is not reducible to the existence of that relation, and may be understood to be a distinct kind of entity from either the substance or the quality — as is the case with W.E. Johnson's *ties*. Or else, it might be understood to be a primitive and ultimate kind of unity which cannot be analysed in terms of the existence of the substance Smith, the relation of inherence, and the quality of happiness.

I believe that the latter reading is more or less the correct reading of McTaggart's reply. But even though it allows us to acknowledge the reality of a material distinction between substance and its nature it does not really explain the ultimate ground for that distinction. To understand the ultimate ground for that distinction I think we need to come up with an answer to Stout's question as to what the being of substance, as distinct from its nature, consists in. And the answer to that question is that substance, as distinct from its nature or qualities, is existence or Being. As I argued earlier in this chapter, this is a legitimate analysis of our initial assumption that something exists. It is consistent with a valid deduction of the category of Substance from that of Quality; and it allows us to explain why our general idea or concept of substance is essentially relative and without positive content. Our concept of substance is without content insofar as content pertains only to the *whatness* or *suchness* of reality. Existence cannot, as such, be added (except in a purely formal sense) to the content of our individual concepts, as Kant has rightly pointed out. Existence is that which distinguishes an instantiated from an uninstantiated concept, and therefore cannot be contained
within a concept. Substance, as such, is not accessible by purely discursive cognition. But it is given in perception, which McTaggart, in Section 44 of *The Nature Of Existence*, appropriately describes as the awareness of the existent.

26. The explicit categorisation of existence as Substance is, perhaps, somewhat unusual. But it is, I think, implicitly endorsed by a number of philosophers. It is, for example, implicit in Aristotle's notion of substance as *ousia*, which, as D.W. Hamlyn has remarked, is naturally translated as "beingness". And it does allow us to offer solutions to some important philosophical problems.

Apart from the fact that it provides us with answers to the questions posed by Locke and Stout, the categorisation of existence as substance enables us to avoid the criticisms which have been raised against attempts to categorise it as a quality, whilst still maintaining that existence is a genuine and irreducible feature of the world.

The categorisation of existence as substance is also compatible with Bradley's principle (which is, I believe, ultimately traceable to Aristotle) that reality is essentially a union of the *what* and the *that*, of content and existence, and that these elements are not reducible the one to the other. It is also compatible with his general theory of judgement, according to which all judgement involves the predication of some ideal content of reality; and with his view that all thought or discursive cognition essentially involves the abstraction of content from existence, of the *what* from the *that*. 
Thirdly, by categorising existence as substance we can, I think, reconcile the theory that existence is a "first-level" quality (i.e. a quality of individuals) with the theory that existence is a "second-level" quality (i.e. a quality of concepts or other qualities) in a way which preserves the insight that existence is a genuine feature of the world. To say that an individual, say John, exists, may be understood to mean that some part of existence has all those qualities which make up John's nature. The claim that a concept is instantiated will be understood to mean that some part of existence, or existence as a whole, satisfies that concept. The concept horse, for example, is instantiated if one or more parts of existence combine all those qualities which are included in the connotation of that concept. This is, I think, what is usually understood by the claim that existence is a second-level predicate or quality. The two theories are reconcilable by introducing what Leibniz called an individual concept, or what others have called an individual essence. An individual, John, exists if the individual concept of John is instantiated. And the claim that an individual concept is instantiated simply means that some part of existence, or that existence as a whole, has the qualities included in the connotation of that concept.

Insofar as existence is not a quality, it is not predicable of any entity. It is, in this sense, particular rather than universal. The relation between existence and existences will accordingly be understood to be a part/whole relation, rather than a relation between a universal and its instances. Considered as a whole or aggregate of all parts of existence, existence is identical with the Universe.
27. The categorisation of existence as substance allows us to accept two characteristics which have traditionally been considered to be distinguishing features of substance. The first is that substance is that which remains identical in change. The second is that substance is self-existent. That which remains identical in change is existence. And naturally, if anything is self-existent, it is existence.

We may also offer an account of what it means to say that a quality or a relation exists. A quality exists if it is either directly or indirectly true of existence. A quality is indirectly true of existence if it is true of some quality of existence, of some relation between existences or between existents, or of one or more existents. An entity is existent if it exists, but is not itself existence or part of existence. A relation exists if it relates parts of existence, or relates existents. The traditional view that qualities and relations have a merely dependent or derivative mode of being is thus vindicated by our view.

28. The introduction of the concept of a dimension of a substance will allow us to draw a distinction between substances and events. An event, we may say, is a substance which has a temporal dimension. Any attempt to reduce substances to events is circumvented by our view. An event, in the ordinary sense, is, in our terminology, a substance. And substances are more fundamental, in an ontological sense, than events, because the existence of events can be explained in terms of the existence of substances. It is impossible, on the
other hand, to explain, without circularity, the existence of substances in terms of the existence of events.

29. It remains for us to say something about the way in which a substance stands to its nature. I suggested earlier that, in agreement with McTaggart and Armstrong, we may say that, although a substance is related to its nature, this fact is not fundamental. What is fundamental is that the substance and its nature are united. Whether or not this unity can be constituted by a relation will be discussed in the next chapter.

NOTES


2. Eric Toms has argued [*Relation and Consciousness*, Theorem 16] that the proposition "something exists" is a necessary truth. But Toms' argument essentially consists in the assumption that to suppose that nothing exists is to suppose the existence of a real state of affairs describable as "nothing exists". It is then argued that this real state of affairs must exist, hence something must exist. But clearly a state of affairs or fact cannot be a simple entity. If it exists it must have constituents which exist; and since nothing cannot be a constituent of anything, there cannot be a state of affairs describable as "nothing exists".


   Existence is a purely formal characteristic; in fact, in its primary sense, it seems to me to be equivalent to
particularity, and all other senses are derived from this. [ibid.]


   If we attempt to think of this pure 'Being', and to give ourselves an account of precisely what we mean by it, then we meet with the difficulty of being unable to specify anything by which such a 'pure Being' may be distinguished from non-being.


13. Cf., Spinoza, *Descartes' Principles Of Philosophy*, Definition 9:

   D9: When we say that something is contained in the nature or concept of something, that is the same as saying that it is true of that thing, i.e., can be truly affirmed of it.


15. McTaggart, *The Nature Of Existence*, §60. [*The text here reads "say" instead of "try". But this is almost certainly an error.]


19. The adjective "negative" is, perhaps, misleading, since it may suggest that such qualities are of an inferior ontological status to "positive" qualities.


21. The importance of obversion and contraposition in logic might, of course, count as a reason in favour of the reality of negative qualities.


25. This intuition is shared by A.N. Prior, Papers in Logic And Ethics, Chapter 2; by Timothy Sprigge, Facts, Words And Beliefs, pp.75-76; by Meinong, and by J.N. Findlay – see the latter’s Meinong’s Theory Of Objects, pp.50-58.


The sum of Plato’s doctrine on this subject is this, - that pleasure is nothing absolute, nothing positive, but a mere relation to, a mere negation of, pain. Pain is the root, the condition, the antecedent of pleasure, and the latter is only a restoration of the feeling subject, from a state contrary to nature to a state conformable with nature.


29. McTaggart, Philosophical Studies, pp.273-274.


33. This contention is supported by McTaggart’s statements in Section 63 of The Nature Of Existence. There we find the following statement:

A Complex Quality is one which does not consist of an aggregate of other qualities, but which can be analyzed and defined by means of other characteristics, whether qualities or relations, or both.

He then explicitly says that a negative quality is complex.

...for it can be analyzed into two terms, of which one is negation and the other is the corresponding positive quality, and it is not an aggregate of those terms. [My emphasis]


35. Armstrong, Universals & Scientific Realism, Chapter 15.


Broad objects (MIND, p.320) that in this case Nature would include itself as a part. Let us say therefore 'all the simple qualities'. (But that would not do because you do not get complex qualities by merely adding the simple. One might say, all non-compound qualities'.)

This proposed amendment was, in fact, subsequently incorporated by McTaggart in his "An Ontological Idealism", *Philosophical Studies*, p.275.

The compound quality which is an aggregate of all the non-compound qualities possessed by anything may be called the Nature of that thing.

43. S.V. Keeling, "Professor Broad's *Examination Of McTaggart's Philosophy*", p.347.

A judgement has meaning. And when anything which has meaning is a complex whose elements have meaning, the meaning of that complex is dependent on the meaning of the elements. The meaning of a judgement, therefore, ultimately depends on the meaning of those of its terms which have meaning themselves, and which have no parts which have meaning.

46. Broad, *Examination Of McTaggart's Philosophy*, Vol.1, p.103. I believe that this criticism is also applicable to Sprigge's claim [*Facts, Words And Beliefs*, Chapter 2, §9] that a simple universal [quality] is one which is specified by a simple predicate.
I do not think that this assumption is peculiar to the British Empiricists or to the Phenomenalists. It is, I would maintain, an assumption which is shared by most Rationalists.


52. McTaggart's further revision of the definition of Substance in "An Ontological Idealism", as "that which has qualities and is related without being itself either a quality or a relation, or having qualities or relations among its parts" [*Philosophical Studies*, p.275] is quite consistent with this deduction.


58. Cf., Kant, *Critique Of Practical Reason*, p.144:

To know completely the existence of this Being [God] from mere concepts is absolutely impossible, for any existential proposition which asserts the existence of a being of which I have a concept is a synthetic proposition; that is, it is such that I must go beyond the concept and assert more than was thought in it, namely, that outside the understanding there is an object corresponding to the concept within the understanding. This assertion obviously cannot be reached by any inference.


70. E.g., M.J. Loux, *Substance And Attribute: A Study In Ontology*. 
88

CHAPTER TWO

The Categories Of Existence — 2

1. In the previous chapter we reached two important conclusions concerning the existent. The first was that the categories of Substance and Quality are valid categories of existence. The second was that existence, itself, is rightly categorised as substance. We also concluded that there must be a material, as distinct from a merely formal, difference between a substance and its nature. The question then arose as the ontological status of this difference. Substance is different from its nature; but it is also, we agreed, united with its nature. The recognition of these facts will allow us to deduce two further categories of existence — the categories of Relation and Unity.

2. Let us consider, firstly, the fact that substance is different from its nature. How are we to analyse this fact? The correct, and perhaps the most natural response is, I suggest, that the fact comprises three distinct entities: substance, its nature, and a relation of difference. I do not think that it is possible to defend this analysis by any direct argument. It is, rather, based upon the principle that any difference between entities involves a relation; and I consider this principle to be self-evident. Now, if this analysis is correct, then we will have shown that the category of Relation is a valid category of existence.
We have seen that the categories of Substance and Quality are both ultimate categories, in the sense that neither can be dispensed with in favour of the other, or in favour of some other category. Can the same be said of the category of Relation? In agreement with McTaggart, we must, I think, conclude that the category of Relation is both ultimate and indefinable. Attempts have been made to show that the category of Relation is either dispensable in favour of some other category or internally inconsistent. The monadism of Leibniz, for example, might be understood to be an attempt to show that the category of Relation is dispensable in favour of the category of Quality; whilst the views of F.H. Bradley in *Appearance And Reality* might be understood to be an attempt to show that the category is internally inconsistent.

There have also been attempts to define the category of Relation. It is sometimes suggested, for example, that a relation is a "two, three or n-particulared universal", or that it is a dyadic, triadic, or n-adic adjective. I will now consider some of these attempts to either dispense with, or define, the category of Relation.

3. What reasons are there, then, for believing that the category of Relation is dispensable?

There is, of course, the view, traditionally ascribed to Leibniz, that propositions which ostensibly assert that a relation exists between two (or more) terms can be analysed in a manner which involves only the predication of qualities of those terms. In general, it is suggested, propositions of the form "aRb", which ostensibly assert that a relation, R, relates a and b, can and should be analysed into a conjunction of two predicative propositions - one
predicating a quality $r'$ of $a$, and the other predicating a quality $r'$ of $b$. The qualities $r'$ and $r'$ are what we might call relation-grounding qualities or foundations of $R$. The proposition "John is taller then Paul" might accordingly be analysed into a conjunction of two propositions - "John is 180cm tall" and "Paul is 175cm tall". In this case, the qualities 180cm tall, and 175cm tall, are the foundations of the relation is taller than.

This approach does, however, have several problems. The first is that it might reasonably be accused of tending to conflate the fact that relations are almost invariably determined by certain qualities of their terms, with the claim that relations can be reduced to these qualities. The fact that John is 180cm, and the fact that Paul is 175cm tall, are not equivalent, when taken in conjunction, to the fact that John is taller than Paul - although they may, taken conjointly, intrinsically determine this fact.

The second, and related problem is that such an approach cannot provide a satisfactory analysis of propositions which ostensibly involve asymmetrical relations. This is the classic objection to monadism put forward by Bertrand Russell in The Principles Of Mathematics - an objection which has not, in my opinion, received a satisfactory reply. Russell's point is essentially that any attempt to analyse a proposition which ostensibly asserts that two or more terms are related by an asymmetrical relation into a conjunction of two or more predicative propositions will inevitably involve the tacit acceptance of the reality of some other asymmetrical relation, or else it will fail to convey the meaning of the original proposition. In the case of our previous example, the proposition "John is taller than Paul" might be analysed into a conjunction of
the propositions "John is 180cm tall" and "Paul is 175cm tall". But this conjunction can only preserve the meaning of the original proposition insofar as it is tacitly assumed that 180cm is a greater length than 175cm. In other words, we have dispensed with the relation taller than only by tacitly accepting the reality of another asymmetrical relation of greater length than. And it is evident that there is no way in which the latter two propositions can be further analysed so as to at once avoid the introduction of some asymmetrical relation and preserve the meaning of the original proposition. As Russell points out, if we merely say that John is 180cm tall and that Paul is 175cm tall, and then add that 180cm is different to 175cm, then we have not preserved the meaning of the original proposition; since difference is a symmetrical relation, and is therefore incapable of generating the kind of serial order among the respective determinate lengths or magnitudes which is required for the comparison of the heights of John and Paul which is expressed in the original proposition.

4. If we cannot satisfactorily analyse relational propositions into conjunctions of predicative propositions, it seems that there are only two conclusions which we may draw. The first is that propositions which ostensibly assert that there is a relation between two or more terms are, when true, true in virtue of the fact that there is a relation between the terms in question. The second is that there are, in fact, no real relations; and that relational propositions are always false, or, in case we accept the view that there are degrees of truth and reality, that such propositions are not completely true. The view that there are no real relations is the
view which is traditionally attributed to Leibniz. And the view that relations have a diminished degree of reality, hence that relational propositions cannot be completely true, is the view which is traditionally attributed to F.H. Bradley. Now, if we accept the first conclusion, then the proposition that a substance is different from its nature will be true in virtue of the fact that a relation of difference exists between a substance and its nature. This would vindicate our deduction of the category of Relation from the categories of Substance and Quality. Before we accept this conclusion, however, we ought to consider the alternative conclusions and show why they are unacceptable.

5. Let us begin with the Leibnizian view that there are no real relations. We have already seen that one part of the theory advocated by Leibniz is unsound. It is impossible to preserve the meaning of a relational proposition by analysing it into a conjunction of predicative propositions. This is what we might call the "positive" part of the theory. The "negative" part is that relational propositions must be false because relations are not real entities.

What grounds, then, does Leibniz have for holding the negative part of his theory? Ultimately, his reason for rejecting the reality of relations is that they are not predicable of a single substantive term in the way that qualities are.

I shall allege another example, to show how the mind uses, upon occasion of accidents which are in subjects, to fancy to itself something answerable to those accidents, outside the subjects. The ratio or proportion between two lines $L$ and $M$, may be
conceived three several ways; as a ratio of the greater $L$ to the lesser $M$; as a ratio of the lesser $M$ to the greater $L$; and lastly, as something abstracted from both, that is, the ratio between $L$ and $M$, without considering which is the antecedent, or which the consequent; which the subject and which the object. And thus it is, that proportions are considered in music. In the first way of considering them, $L$ the greater; in the second, $M$ the lesser, is the subject of that accident, which philosophers call relation. But, which of them will be the subject, in the third way of considering them? It cannot be said that both of them, $L$ and $M$ together, are the subject of such an accident; for if so, we should have an accident in two subjects, with one leg in one, and the other in the other; which is contrary to the notion of accidents. Therefore we must say that this relation, in this third way of considering it, is indeed outside the subjects; but being neither a substance, nor an accident, it must be a mere ideal thing, the consideration of which is nevertheless useful.

It has been pointed out by a number of critics' that this objection to the reality of relations is of doubtful merit. It might even be seen as question-begging. It is assumed that relations, if they are to be real, must be predicable of a single subject in the way that qualities are. It is then argued that no relation can be consistently predicated of a single subject. The conclusion is then drawn that relations cannot be real — although they might be ideal or entia rationis, in the sense that they are creations of the mind. There is, however, no reason why relations should be predicable of a
single subject unless, of course, we simply assume that they must behave like qualities. But if we do not make this assumption, and accept that relations typically fall between their terms (or between a term and itself in the case of reflexive relations), then Leibniz' objection to their reality is difficult to sustain. The recognition of this fact is precisely why relations form a distinct category of existents.

In claiming that relations are not predicatable of their terms, and that they typically fall between their terms (or between a term and itself), we are not claiming that relations can be defined as entities which fall between their terms. Any attempt to define the category of Relation in this way would, as McTaggart points out, involve us in a vicious circle; since we can only explain the relevant notion of "betweenness" as being the kind of "betweenness" which relations typically have among their terms.

6. If we reject Leibniz' argument against the reality of relations does it follow that relations cannot have a diminished degree of reality? According to F.H. Bradley, there are reasons for concluding that relations cannot be ultimately real. But, he insists, although relations are not ultimately real, they do have a diminished degree of reality. They are real or existent as appearances or as mere entia rationis. And the fact that they are appearances does not, he would insist, imply that they are unreal or non-existent.

Now I think that there are serious difficulties with Bradley's theory of appearances; and it is doubtful whether any consistent account can be given of the principle of degrees of reality which does not simply equate that principle with the view that an entity is
more or less real according as it contains more or less of that which
is real, or with the view that an entity is more or less real
according as it is more or less independent in its existence. But let
us ignore these difficulties and concentrate upon the reasons which
Bradley gives for taking the view that relations cannot be ultimately
real. For if these reasons are unsound, there will be no basis for
concluding that they have a diminished degree of reality.

7. It seems to me Bradley uses two quite distinct lines of
argument in his critique of relations. One is based upon a vicious
infinite regress which allegedly arises when we attempt to explain
how a relation "stands" to its terms. The other line of argument is
based upon the claim that all relations are abstractions from, and
presuppose the existence of, a whole which comprises the relation and
its terms. The first line of argument is, I maintain, inconclusive.
But the second does draw our attention to an important, if neglected,
point in the philosophy of relations. I will now consider each of
these lines of argument.

8. In Chapter 3 of Appearance And Reality Bradley argues that the
categories of Quality and Relation are not, strictly, valid
categories of existence, or, rather, of ultimate reality. The
arguments in that chapter are sometimes understood to be directed
against the category of Relation alone. But this is not the case.
They are, in fact, criticisms of the attempt to categorise ultimate
reality in terms of qualities and relations; and part of the
criticism involves demonstrating that neither category can be
introduced without the other - i.e., that each implies the other. He
then argues that, although each category implies the other, they are, nonetheless, mutually incompatible. It is then concluded that neither category is a valid category of ultimate reality.

We may agree with Bradley that each category implies the other. But why should we believe that they are mutually incompatible? Bradley offers two distinct reasons for drawing this conclusion. The first is that the occurrence of a relation between two or more qualities determines, in those qualities as its terms, a complex nature which is incompatible with the unity of those qualities.

Hence the qualities must be, and must also be related. But there is hence a diversity which falls inside each quality. Each has a double character, as both supporting and as being made by the relation. It may be taken as at once condition and result, and the question is as to how it can combine this variety.13

The contention is that any quality in relation, $A$, must combine two distinct aspects: (i) its "original" nature upon which the relation is grounded; and (ii) its "derivative" nature which is determined by the relation. $A$, it turns out, is, in fact, a combination of two distinct elements, $a$ and $a$. And these two elements, if they are to form $A$, must, in turn, be united by a further relation - which relation will imply a diversity or complexity within both $a$ and $a$; and so on indefinitely.

Every quality in relation has, in consequence, a diversity within its own nature, and this diversity cannot immediately be
asserted of the quality. Hence the quality must exchange its unity for an internal relation. But, thus set free, the diverse aspects, because each something in relation, must each be something also beyond. This diversity is fatal to the internal unity of each; and it demands a new relation, and so on without limit."

There are two points which might be made in reply to this argument. The first is that Bradley has not, I think, clearly distinguished the concepts of unity and simplicity. Simplicity, we may say, is the quality of being without parts, or of lacking structure or complexity. Unity, on the other hand, is not strictly a quality of entities. A unity is a unity of or among entities — whether these entities be substances, qualities, or relations. Unity, in this sense, implies complexity and is incompatible with simplicity. If we accept this distinction between unity and simplicity, then Bradley's argument would at best show that no quality in relation can be simple. If we also agree to accept the premiss that every quality must be a quality-in-relation, we might even conclude that no quality can be simple. Now we have seen, in the previous chapter, that McTaggart's argument in favour of the reality of simple qualities was inconclusive; and Bradley himself offers no reason to assume that there must be simple qualities, so the argument would only seem to support the conclusion that there can be no simple qualities.

The second point is that Bradley does not acknowledge a distinction between a quality and its nature. The nature of a quality comprises all those qualities which are true of that quality. It is,
for example, a quality of blueness to be the colour of the unclouded sky in daylight; and this quality is part of the nature of blueness, although it is not a part of blueness itself. Once we acknowledge this distinction then it seems to me that the argument loses any real cogency. For let us assume that we have a quality, $A$, and that part of its nature, $a$, determines its relation with some other quality, $B$; and, that another part of its nature, $a'$, is determined by its relation with $B$. Where is the inconsistency here? The qualities $a$ and $a'$ form part of the nature of $A$, but they are not parts of $A$. And even if we assume that $A$ itself is simple, this does not commit us to the conclusion that it has a simple nature.

9. The second reason which Bradley gives for concluding that the categories of Quality and Relation are incompatible is that the occurrence of a relation between two qualities involves an infinite regress of relations.

But how the relation can stand to the qualities is, on the other side, unintelligible. If it is nothing to the qualities, then they are not related at all;... But if it is to be something to them, then clearly we shall now require a new connecting relation.... But here again we are hurried off into the eddy of a hopeless process, since we are forced to go on finding new relations without end. The links are united by a link, and this bond of union is a link which also has two ends; and these require each a fresh link to connect them with the old.$^{15}$
The suggestion is this. Let us assume that there is a relation, \( R \), between \( a \) and \( b \). If \( R \) is not predicable of \( a \), or of \( b \), or of \( a \) and \( b \) taken in conjunction, then it must be an entity distinct from either \( a \) or \( b \). The question then arises as to how \( R \) "stands to" \( a \) and \( b \). The obvious reply is that \( R \) relates \( a \) and \( b \), and that if it did not relate them it would not be a relation. This initial question should be distinguished from another, namely, how do \( a \) and \( b \), taken severally, stand to \( R \)? And the reply to this question is that they are related to \( R \) — i.e. there are two further relations, \( R' \) and \( R'' \), which relate \( a \) to \( R \) and \( b \) to \( R \).

In neither of these cases, however, do we have any genuine difficulty. In order that \( a \) and \( b \) should be related we need only postulate the occurrence of the relation \( R \) to relate them. In virtue of this original relationship \( aRb \) we might ask how \( a \) and \( b \) stand to \( R \), and find that we are faced with an infinite regress of relations. But the regress is not vicious since we do not need to reach a final term in the series of relations in order that our original terms, \( a \) and \( b \), should be related. They are related by \( R \).

10. The conclusion to be drawn in the light of Bradley's arguments is that relations relate their terms. This might seem a mere truism, but it is often confused with the quite different conclusion that relations unite their terms. Bradley, himself, does not clearly distinguish these two conclusions. In the passage quoted above, for example, he speaks of relations as "links" which are "united" by other links. He also speaks of them as a "bond of union". What I maintain is that Bradley has not shown that there is any genuine incompatibility between, or inconsistency in, the categories of
Quality and Relation; but he has, here and in subsequent writings, drawn our attention to the fact that there is a genuine difficulty in understanding how qualities and relations are united. The difficulty is this. If terms and relations are distinct entities then we cannot simply unite them without stating the ground of their unity. Bradley assumed that the only ground for their being united was the occurrence of a further relation between each term and the relation; and it is clear that if we agree to this assumption then we will be involved in a vicious infinite regress, since the ultimate ground for the unity of the original terms and the relation can only come with the final term of an infinite series of relations.

11. Various attempts have been made at supplying a ground for the unity of terms and relations. Perhaps the most popular recourse, among those philosophers who recognise that there is a genuine problem to be solved, is to introduce a non-relational tie between the terms in a relationship. This is the way in which W.E. Johnson, for example, attempts to solve Bradley's difficulty.

The coupling tie...is of fundamental importance in discussing one of the paradoxes that Mr Bradley and others have found in the general notion of relation. The paradox is briefly brought out in the following contention: when we think of $x$ as being $r$ to $y$, we have first to relate $x$ to $y$ by the relation $r$, and then relate the relation $r$ to $x$ by - say $r'$ - and $r$ to $y$ by - say $r''$, another relation. This again will require that $x$ should be related to $r'$ by the further relation $r'''$, which will lead to an infinite regress on the side of $x$, and a similar
regress on the side of $y$. This paradoxical contention is met by pointing out that in constructing an object out of the constituents $x$, $r$, and $y$, we do not introduce another constituent by the mere act of constituting these constituents into a unity. The pretence of paradox is due to the assumption that to the act of relating or constructing there corresponds a special mode of relation; so that a tie is confused with a relation.\textsuperscript{18}

Unfortunately, it is not entirely clear from this passage what ontological status we are to assign to the tie. If it is, in some sense, a distinct entity (i.e. an entity distinct from the terms and the relation) then we might reasonably ask how the tie is united with the terms and the relation; that is, we might ask what the ground is for their being united. If we introduce another tie to unite the original tie, the terms, and the relation, we are faced with a vicious infinite regress, since the original terms can only be united by the final term in an infinite series of ties – i.e., they cannot be united.

The correct interpretation of the tie is, I suggest, that it is simply the unity comprising the terms and the relation, or what Stout called the "fact of relatedness".\textsuperscript{17} This interpretation is supported by Johnson's own statements in the first chapter of the book.

The general term 'tie' is used to denote what is not a component of a construct, but is involved in understanding the specific form of unity that gives significance to the construct.
I agree that the tie is not a component of a construct. Where I would differ from Johnson is over the claim that the tie, rather than being involved in understanding the specific form of unity, ought, instead, to be *identifies* with the form of unity. The coupling tie, I suggest, is a form of unity. And Unity, I would further suggest, is a distinct category of existence. A unity is not a substance, a quality, or a relation — although it may comprise substances, qualities, and relations, and is implied by the existence of any relation.

Although a tie is a form of unity, the category of Unity encompasses more than the kind of unity involved in the coupling tie. A *fact*, I should say, is a form of unity encompassing the coupling tie and what Johnson calls the “characterising tie” — i.e. the form of unity implied by any assertion that a substantive term is characterised by an adjective term or quality. McTaggart, for example, defines a fact in this manner.

I should define a Fact as being either the possession by anything of a quality, or the connection of anything with anything by a relation. (In this definition I use “anything” to include both substances and characteristics.)

A fact, thus understood, is equivalent to what Armstrong calls a “state of affairs”.

*State of affairs.* A particular (including higher-order particulars) having a property, or two or more particulars being related.
Again, although a fact is a form of unity, there are forms of unity other than facts. In general, we may say, the existence of any relation implies a unity; and, conversely, every unity implies the existence of a relation. But what is perhaps even more important is that the kind of relation determines the kind of unity. Thus, where we have two existents which are spatially related, we shall have a spatial unity which comprises the terms and the relation. It also follows that where we have two terms related by two different relations, we will have two different forms of unity determined by those relations. Two substances might be spatially related, for example, and therefore be comprised by a spatial unity. But the same two substances might also be temporally related, and therefore be comprised by a temporal unity.

12. Insofar as every unity implies the existence of a relation, every unity, we may conclude, is complex.

This conclusion might be challenged by claiming that there are some unities which do not involve a relation. Such unities we might call simple unities. Now, the only kind of ostensibly simple unities are those involved in the identity of an entity with itself. In what sense, we might be asked, can such ostensibly simple unities involve a relation?

The correct reply to this question is, I suggest, that there are no simple unities. Unities of self-identity are, in fact, complex and involve a relation - the relation of self-identity. An entity, $x$, is, we will assume, identical with itself. We might then say that it is a fact that $x$ is identical with itself, and that this fact is simply a unity comprising $x$ and a relation of self-identity.
13. The claim that self-identity is a relation has, however, been criticised. In Chapter 19 of *Universals And Scientific Realism* D.M. Armstrong argues that there are no reflexive relations, hence that no particular or substance can be related to itself. Since self-identity is ostensibly a reflexive relation, his arguments can be seen as being directed against the view that there can be no unity or fact describable as an entity's being identical with itself.

Armstrong puts forward three distinct arguments in defence of his claim. The first is that we can determine *a priori* that an entity is, in some cases, reflexively related.

> We know *a priori* that a particular is identical with itself, resembles itself, is the same size as itself, and so on.  

The objection is that if we know *a priori* that some characteristic is true of an entity, then that is a sufficient reason to conclude that the characteristic in question does not exist. This principle is called the "Irish Principle". The reply to this objection is simply that there is no reason to accept the principle upon which it is based as true. Armstrong cannot consider the principle to be a self-evident truth, since we would then know *a priori* that it has the characteristic of being true. The principle would then be incompatible with its own truth. If it is not an *a priori* truth then it might be an empirical truth. But if it is an empirical principle which applies to all existents it can only be established inductively; and I have argued, in the Introduction, that no ontological principles can be established by inductive reasoning. On the other hand, it might simply be a regulative or methodological
principle, i.e. a principle the denial of which is inconsistent with a particular method of inquiry - in Armstrong's case an a \textit{posteriori} or "scientific" realism. What this method amounts to is not, however, clearly stated. In any case, the objection really only amounts to a fundamental disagreement about metaphysical method; and we have seen that the empirical method, insofar as it is dependent upon inductive inference, is quite inappropriate in Metaphysics, and cannot provide us with genuine ontological or cosmological knowledge.

The second of Armstrong's arguments is that all existents must have causal powers, and that reflexive relations "appear to bestow no causal power upon the particulars which are said to have them." Unfortunately, without an analysis of causation or of causal powers, which Armstrong does not give, the objection is of doubtful cogency. In any case, similar objections can be made against this principle as were made against the Irish Principle. If it is a self-evident principle, it is an \textit{a priori} truth. If it is not self-evident, then it can only be established either inductively, or by a deductive inference from a principle which is self-evident. But since it professes to be an ontological principle it cannot be established inductively. And since Armstrong does not attempt to support it by any deductive argument, we can only assume that he considers it to be a self-evident truth. My own reaction is to simply deny that it is self-evident.

The third argument is that facts which ostensibly involve reflexive relations can, for the most part, be analysed in such a way as not to involve any genuinely reflexive relation.
... in all such cases, it does seem rather easy to give an account of the ontology of the situations involved without invoking any such relations. One part of a rope is entangled with another part of the same rope. One hand washes another; both wash the rest of the body.... If a man loves himself, then it is not that self-loving state which he loves, but other aspects of himself.25

Although such analyses are acceptable in the case of some facts, they are clearly unsuitable in the case of a relation of self-identity — a case which Armstrong unfortunately does not consider. If $x$ is identical with itself, this does not mean that $x$ is identical with a proper part of itself. Any such analysis would, in fact, be self-contradictory, since it would imply that a whole is identical with a proper part of itself; and, by definition, a proper part is a part which is not identical with the whole of which it is a part.

None of the above objections to the reality of reflexive relations is conclusive, especially in the light of our discussion of Metaphysical method in the Introduction. We may, therefore, dismiss Armstrong's critique of reflexive relations.

14. A further argument against the reality of the relation of self-identity is that, if it were a relation, it would be a monadic relation; and such relations, it is claimed, are impossible. This argument has been attributed to Meinong, but it is, I think, implicit in Armstrong's definition of a relation as being a polyadic, as distinct from a monadic, universal. If there were genuine monadic relations — i.e., relations which have only one term — and if all
relations are, as Armstrong maintains, universals, then he would have no way of distinguishing properties, which are defined as being monadic universals, from monadic or reflexive relations - since such relations would also be monadic universals.

In reply to the claim that monadic relations are impossible we ought, I think, to follow Grossmann\textsuperscript{27}, and draw a distinction between the terms of a relation, and the places of a relation. Identity is a two-place relation insofar as it has a direction, or what Russell called a sense\textsuperscript{11}, between its first and second place - even though one and the same term occupies both places. Identity might thus be said to be a monadic relation, in the sense that it has only one term; or a dyadic relation; in the sense that it has two places. And we might agree that it cannot have only one place, but still maintain that it has only one term. Although the distinction between the places and the terms of a relation is not generally acknowledged by philosophers, it was, I think, implicitly endorsed by McTaggart in Section 79 of *The Nature Of Existence*.

Thus we cannot say that every relation has more than one term. Yet that which stands in a relation, even if the relation has only one term, has a certain aspect of plurality. For a relation always connects something with something. Even when it only connects something with itself, the term so connected with itself is - to use a metaphor which is not, I think, misleading - at both ends of the relation, and this does involve a certain aspect of plurality, though not, of course, a plurality of substances.
The "aspect of plurality" to which McTaggart refers in this passage is, I suggest, simply the fact that one and the same term occupies both places of a reflexive relation.

15. The reality of reflexive or monadic relations is, as we shall see, of importance for McTaggart's general cosmology, and for the theory of Determining Correspondence in particular. For these reasons alone, the above discussion is justified. But it is justified for another reason. In Section 2 of this chapter I mentioned the fact that relations are sometimes defined as polyadic universals, or polyadic adjectives. We have seen, however, that relations cannot, strictly, be considered to be adjectives. They do not, as we pointed out in reply to Leibniz, inhere in or qualify their terms - or anything else for that matter. In this respect they differ from qualities. The use of the term "adjective" in respect of relations is, therefore, at best misleading, and at worst simply erroneous. But we have also seen that relations cannot be defined as polyadic universals, since some relations, namely reflexive relations, are monadic or single-termed; and, since qualities are, according to the view under consideration, to be defined as monadic universals, we would be unable to distinguish reflexive relations from qualities. Furthermore, as I shall argue below, it is doubtful whether relations, or qualities for that matter, are, in fact, universals in any generally accepted sense - in which case the definition of relations as polyadic universals would be doubly erroneous.

16. The category of Relation is, I have argued, an indispensable and indefinable category of existence. I have also argued that the
occurrence of any relation determines a unity which comprises the relation and its terms. This unity is not a substance, a quality, or a relation — although it must comprise a relation. We may therefore conclude that Unity is a distinct and valid category of existence. Every existent is either a substance, a quality, a relation, or a unity; and these four categories will henceforward be considered to be the fundamental categories of existence.

17. Having established what the fundamental categories of existence are, we might now consider some implications of their acceptance.

Concerning the category of Substance, it is sometimes claimed that the concept of an event or process is more fundamental than that of a substance. Now, we have already considered one reason why such a view is unacceptable — it is impossible to explain the existence of events except in terms of the category of Substance. If an event exists, then this means that existence has some event-like feature. This feature, I have suggested in Section 28 of the previous chapter, is that of a temporal dimension. In agreement with McTaggart, I should say that a substance has a temporal dimension according as it either forms a temporal series or is a member of a temporal series. An event may thus be defined as a substance which has a temporal dimension. By defining an event in this way we do not appeal to any categories other than those which we have already introduced. The concept of an event is analysed in terms of the concept of a series, and the concept of a series in terms of terms and relations.

It follows from our view of substance that there can be no ultimate distinction between occurrences and continuants. An
occurrent is a substance which has a temporal dimension — i.e., it is an event. A continuant, on the other hand, is a substance which is the subject of various successive states or qualities. Now, to say that a substance has a temporal dimension means that existence has a temporal dimension; and this, in turn, means either that there is one part of existence which is a member of a temporal series comprising other parts of existence (which series is generated by the relations earlier than and later than), or that there are two or more parts of existence which form a temporal series. The important point is that in any temporal dimension of existence there is something which remains self-identical and which is the subject of various successive qualities or states — and this is existence itself. Existence might accordingly be said to be a continuant. But insofar as it only one member of a temporal series, it might also be said to be an occurrent.

18. Regarding the categories of Quality and Relation, there are a number of important conclusions which follow from the validity of these two categories. Perhaps the most important is that the occurrence of a relation between two or more terms implies the occurrence of a further quality of those terms — the quality of standing in that relationship. Consider, for example, the fact that John is taller than Paul. We may say that this fact or unity comprises three entities — the terms John and Paul, and the relation taller than. This fact implies two other facts: the fact that John has the quality of being taller than Paul; and the fact that Paul has the quality of being shorter than John. These two facts comprise the original terms, John and Paul, the relational qualities implied by
the relation taller than, and relations of inherence between the original terms and the relational qualities.

Those qualities of terms which are implied by relationships I shall, following McTaggart⁵, call derivative qualities. The occurrence of such qualities, and the fact that every relation implies a unity comprising that relation and its terms, allows us to agree with Ewing that all relations are "internal" in two senses.

To sum up, we must admit that all relations are internal in the first and fourth senses, i.e. they always presuppose terms which have the characteristic of standing in the relation in question, and they involve a genuine, though perhaps very partial and limited, unity between their terms.⁶

Where I should disagree with Ewing is over his apparent assumption that it is the relation itself which, in some sense, unites its terms. Bradley's arguments have, I suggest, conclusively refuted that view. Every relation implies a unity among its terms; but since the relation is, itself, a distinct entity, it cannot constitute the unity which comprises the terms and the relation. What is important is that it is not just the terms, but the relation as well, which are comprised by a unity. If it were only the terms themselves which were comprised by a unity, then we would be faced with Russell's classic objections to the Monistic theory of relations⁷. Our view differs from the Monistic theory insofar as we maintain that the relation itself is a constituent in a unity which comprises the relation and its terms.
There is a further point made by Ewing with which I should agree entirely. This is that the existence of such unities is compatible with a high degree of separateness of the terms. Spatial relations among terms will, for example, imply a unity, namely a spatial unity, which comprises the terms and the relation. But spatial unities, it is generally acknowledged, are consistent with a considerable degree of independence among the terms which they comprise.

When we have said that a relation entails the unity of the related terms we have said very little, for if we are asked what the degree and nature of that unity is we can only answer that it is just the kind of unity which consists in being united by that specific relation. When we have given the relation, we have already defined the unity which it involves. This may be very slight, as when the relation is mere coexistence at the same time, or very close as when it is compresence as a part of the same state of consciousness. To speak of the unity involved in all relation is of little value except as a warning against the more extreme pluralists who sometimes talk as if there were hardly any connection or unity in the universe at all, but, since everything in the physical universe is related in some way (if only by the relation of spatial distance) to everything else, relation is compatible with a high degree of separateness, unless some specific proof can be given to show that the world is really much more of a unity than it appears to be."
19. I have claimed that the kind of relation involved in a relationship determines the kind of unity which comprises the terms and the relation. But in addition to the kind of unity there is also a determinable factor which I shall call the *closeness* of the unity. The closeness of the unity comprising a relation and its terms is dependent upon the extent to which the respective natures of the terms are intrinsically determined by the fact that they are constituents within that unity. The extent to which the natures of spatially related terms are determined by that relationship is apparently very slight. But, as Ewing points out, the extent to which the natures of any two parts of the same state of consciousness are determined by the fact that they are co-existent parts of the same state of consciousness is quite considerable. Thus it is that the natures of terms comprised by an organic unity are, it is generally acknowledged, determined by the fact that they are thus related to a far greater extent than are the natures of terms comprised by a mechanical unity. This principle is, as we shall see, of fundamental importance in Cosmology; and McTaggart's theory of Determining Correspondence will, if sound, allow us to conclude that the Universe is a much *closer* unity than it appears to be.

20. The principle that all relations determine a unity involving their terms should be distinguished from the principle that all unities involve a relation. Broad, for example, seems to accept the first principle, but denies the second. His reason for rejecting the second principle is that there are unities which do not ostensibly involve a relation. The example which he gives of a "non-relational" unity is the form of unity comprising a substantive term
and a quality, and expressed in predicative judgements such as "x is red". Such a non-relational unity is said to differ from the relational unity expressed in the judgement "redness inheres in x", which is admitted to be a relational unity, and to be a different fact from the fact that x is red. The reason which Broad gives for making a distinction between the two facts appears to be this. In the first case we ostensibly have only two constituents, x and redness, comprised by the unity expressed in the judgement "x is red". In the second case we ostensibly have three constituents - viz., x, redness, and a relation of inherence - which form the unity expressed in the judgement "redness inheres in x". Each of these judgements is said to correspond to a different fact.

The argument is, however, unsatisfactory. We may say that x and redness are united. But we cannot follow Broad and describe this as an inherence form of unity unless we know that there is a relation of inherence between x and redness. The relation, itself, cannot, however, be omitted from this unity, since it is the relation which determines the form of unity. Without the relation as a constituent in the unity, we could not distinguish the aggregate of x and redness - which is determined by a relation of co-existence - from the fact that x is red. And this, it seems to me, is a problem which confronts any attempt, such as Armstrong's, to view the connection between a substance and its nature as a non-relational unity or tie. A tie, as such, does not have any intrinsic sense or direction. This can only be supplied by the relation. And as Russell has pointed out, it is the intrinsic sense of a relation which determines the order among its terms, and thus the form of unity or fact which comprises them.
In reply to Broad, then, I should say that the judgement "x is red" corresponds to a different fact than the fact that redness inheres in x. We should also distinguish the fact that x is red from the fact that x has the quality of being inhered in by redness. Each of these facts comprises a relation of inherence. The latter two facts involve derivative qualities which are predicable of redness and of x respectively. And although these facts are determined by the original fact that x is red, they are not equivalent to, or different ways of expressing, that fact. These latter facts are what we might call derivative facts or unities. The first is a unity comprising redness, the quality of inhering in x, and a relation of inherence. The second is a unity comprising x, the quality of being inhered in by redness, and a relation of inherence. Now, since we can differentiate unities according to their constituents, and since each of these unities has different constituents, we have three different unities or facts.

21. The occurrence of derivative qualities, implied by original relationships or unities, implies the occurrence of derivative relationships. For example, the original relationship, x is red, implies, in the nature of x, the derivative quality of being inhered in by redness. This fact, in turn, comprises x, a relation of inherence, and the quality of being inhered in by redness, and is thus a relationship. This latter relationship implies the occurrence of similar derivative qualities in the natures of each term of the relation; which, in turn, determines the occurrence of further inherence relationships comprising these qualities and the terms of
the relations. We will thus have an infinite series of relationships
determined by the original relationship.

22. In addition to the distinction between original and derivative
qualities and relations, McTaggart introduces a distinction between
Primary and Repeating Qualities of a substance. Primary Qualities are
the original qualities of a substance, and qualities which are
directly implied by original relationships. Repeating Qualities are
simply those derivative qualities comprised by the nature of a
substance which are neither original qualities nor qualities directly
determined by original relationships.

I do not think that there is any problem with this distinction. As
McTaggart points out in Section 88 of *The Nature Of Existence* the
existence of Repeating Qualities is, perhaps, of lesser importance in
any metaphysical inquiry than the occurrence of Primary Qualities.
And the fact that there will be an infinite number of Repeating
Qualities comprised by the nature of any substance might make the
fact of their existence seem trivial or uninteresting.

It is true, no doubt, that the occurrence of these qualities
and relations becomes of less interest and importance as we go down the series. It may be very important that *A* is
good. But the additional fact that *A* has the quality of being a
term in the relationship of inherence between himself and
goodness could scarcely be interesting to any sane man, except
as an example of a derivative quality. But a fact does not
cease to be a fact because no sane man would be interested in
it.“
23. The existence of unities, and the fact that all existents are either unities or constituents within unities, has sometimes led philosophers to the belief that such unities are more fundamental, in an ontological sense, than the constituents. This belief is, I think, implicit in Wittgenstein's claim that the world is a totality of facts, not of things. But such a conclusion is, I suggest, unjustified for two reasons.

Firstly, the existence of such unities or facts is ultimately dependent upon the existence of substances - insofar as we have categorised existence as substance. No fact or unity can exist unless it comprises existents. And all existents, we have seen, ultimately derive their existence from substances.

Secondly, since every unity is complex, its complexity is dependent upon a diversity of constituents. This does not imply that the constituents are necessarily more fundamental than the unity. It only implies that the unity cannot be more fundamental than the constituents. Every unity, we may agree with McTaggart, is a unity of Composition as well as a unity of Manifestation. By a unity of composition I mean what is sometimes called a "compound" unity, according to which the unity is made up of the constituents. A unity of manifestation, on the other hand, is understood to be a unity such that the constituents are considered to be differentiations of the unity, rather than the elements out which the unity is constructed. The difference, as McTaggart points out, amounts to a difference of emphasis - in one case the emphasis is placed upon the unity, in the other it is placed upon the diversity. Those unities which display a high degree of closeness will naturally tend to be regarded as unities of manifestation rather than unities of composition. But
this should not blind us to the fact that they are nonetheless unities of composition as well as unities of manifestation.

It might be pointed out that, in describing all unities as being unities of composition and unities of manifestation I have departed somewhat from McTaggart's own use of these descriptions - which he restricts to the kinds of unity implied by part/whole relations. I agree that I have made a significant departure from McTaggart on this point. But I think that his restricted use of the descriptions is somewhat unfortunate. It seems to be based upon the assumption that all genuine unities are ultimately determined by part/whole relations; and I see no reason to accept this assumption. Nor do I see that its rejection is incompatible with any important feature of his general metaphysical theory.

24. There remains one question about qualities and relations which is not, I think, adequately addressed by McTaggart. This is the question whether qualities and relations are particular or universal entities. Despite the claim in Section 100 of The Nature Of Existence that characteristics (i.e. qualities and relations) are universal, McTaggart is, I maintain, committed to the view that existent characteristics are particular *instances* of universals. The principle of Extrinsic Determination, for example, is, as I shall argue in Chapter 4, dependent for its validity upon the assumption that the characteristics of substances are particular. Although he does not explicitly discuss the question of the status of qualities and relations in respect of their particularity or universality, there are a number of important passages where he talks of the "particular occurrence" of this or that quality or relation. In Sections 108 to
109, for example, when introducing the principle of Extrinsic Determination, he talks of this principle as being applicable to particular occurrences of qualities, rather than to qualities per se. And in Section 116, when discussing the concept of Manifestation, he makes the following relevant comment.

Qualities can only occur as qualities of something, and the substance is as essential to its qualities as they are to it. The substance would not be what it is without these qualities, but, on the other hand, this particular occurrence of the quality would not take place unless it were a quality of this substance. [My emphasis]

The evidence for this view is perhaps even more explicit in the following passage from Section 118.

And, further, in the case of some such qualities we know that they cannot apply to more than one substance. We do not, I think, know this of any simple qualities. But it might nevertheless be true of them. I do not see that we can be certain that there is no simple quality which applies to one substance, and to one substance only.

And, in the case of finitely compound and complex qualities, we do know of many which could not apply to more than one substance. We shall see in Chapter XVIII that the quality of being a universe is one which, though not simple, is not infinitely compound or complex; and we shall also see that it does apply to one existent substance, and that it cannot apply
to more than one. Again, "the most virtuous of all dogs" is a quality which is not infinitely compound or complex, and which obviously cannot apply to more than one substance, though it might apply to none, if dogs should not be susceptible of virtue, or if two equally virtuous dogs should excel all other in that quality.

I do not think that there is any intrinsic difficulty in such a view. A similar theory was held by Aquinas, and, more recently, by Ramon Lemos in his *Metaphysical Investigations*. Lemos states the theory thus.

> Particulars, in short, exemplify the universal properties they do in virtue of the fact that they possess properties that are singular cases of the universals exemplified. Just as any property exemplified by any particular is identical with some universal it exemplifies, so also any property possessed by any particular is identical with some singular case of some universal it exemplifies. Although some property possessed by x might exactly resemble some property possessed by y, and although these properties are cases of some universal exemplified by the two particulars, each property, since it is a singular case of the exemplified universal, is uniquely possessed by the particular that possesses it."

Although such a view of the status of qualities and relations is defensible, it is, perhaps, rather more difficult to refute the contrary thesis - that such characteristics are universal. In the
case of qualities, it seems to me that the best case that can be made against their being universals consists in establishing a *prima facie* case for their particularity, and then arguing that there is no genuine difficulty involved in such a view. Now I think that Stout has, in his many writings on the subject, certainly succeeded in establishing a *prima facie* case for regarding the qualities of substances as particular, rather than universal, entities. Whether or not he has shown that such a view is without genuine difficulties is debatable. In any case, the more recent objections to the theory put forward by Armstrong and Grossmann are, as I have argued elsewhere, inconclusive.

25. In the case of relations, on the other hand, it is, I believe, possible to show that Realism (i.e. the view that the relations between particular entities are universal) is false. The argument is as follows:

Let us assume, in the first place, that the qualities *universal* and *particular* are contradictory; so that an entity, any entity, must be either one or the other — if it is not universal, then it must be particular. By refuting the view that relations are universal we shall thereby prove that they are particular. Now, given the assumption, for which we have argued earlier in this chapter, that relations *relate* their terms, we can, by *reductio ad absurdum*, show that the relations between particular entities are, themselves, particular.

Following Russell, I will call any term which has the relation $R$ to some term or other the *referent* of the relation $R$, and any term to which some term has the relation $R$ the *relatum* of $R$. Accordingly,
if John is taller than George, John is referent, and George relatum, of the relation taller than.

Again following Russell I will assume that all relations are either symmetrical, not-symmetrical, or asymmetrical. A relation is symmetrical if it is the same as its converse; it is asymmetrical if it is incompatible with its converse; and it is not-symmetrical if it is compatible with, but not necessarily the same as, its converse. The relation taller than is an example of an asymmetrical relation - if John is taller than George, then George cannot be taller than John. The relations of identity and difference are examples of symmetrical relations - if red is different to blue, then blue is different to red. The relation of implication is an example of a not-symmetrical relation - if \( p \) implies \( q \), then \( q \) may or may not imply \( p \).

If a term has a relation to itself, then that relation is a reflexive relation. It is evident that all reflexive relations must be either symmetrical or not-symmetrical, and that no term can be both referent and relatum of one and the same relation unless that relation is either a symmetrical or a not-symmetrical relation.

The following premiss follows from our definitions.

\[
(1) \text{ No term can be both referent and relatum of an asymmetrical relation — i.e. no term can be related to itself by an asymmetrical relation.}
\]

Let us now assume that Realism is true, and that one and the same relation can be a constituent of two or more distinct facts or states of affairs. Let us also assume that the following propositions, each corresponding to a different fact, are true.
(2) John is taller than Fred.
(3) Bill is taller than John.

John, Fred, and Bill are assumed to be numerically distinct or diverse particular entities. Now the Realist would assert that the relation taller than, which relates John and Fred, is one and the same entity as, i.e. is numerically identical with, the relation which relates Bill and John — that it is, in this sense, a universal entity.

It is, however, impossible that one and the same relation should be a constituent of both facts. According to our definitions, John and Bill are referents, and Fred and John are relata, of the two occurrences of the relation taller than. But if Realism is true, then we must conclude that the ostensibly distinct instances of the relation are identical, and that Fred and John are relata of one and the same relation, the relation taller than. And this fact or state of affairs implies the further fact that John is taller than himself, which is clearly impossible. In other words, given the assumption that the relation taller than is an asymmetrical relation, the realist is committed to the conclusion that one and the same term can be both referent and relatum of that relation. But this contradicts premiss (1). Hence the realist is refuted.

26. I have argued that no asymmetrical relation can be universal. I will now use a similar argument to show that no symmetrical relation can be universal. It should be pointed out, however, that such an argument is not required to disprove Realism. Insofar as it is a theory about the ontological status of all relations, Realism is
refuted by the provision of a single counter-example. And the
previous argument has provided us with a counter-example. But it is
often believed that symmetrical relations in general, and resemblance
relations in particular, are especially amenable to a Realist
interpretation of their ontological status. It will, therefore, be
especially significant if we can show that such an interpretation
cannot be true.

I will begin with the following premisses.

(4) John resembles Fred.

(5) Bill resembles George.

John, Fred, Bill, and George, we will assume, are numerically
distinct particular entities. Resemblance, we will assume, is a
symmetrical relation. Let us also assume the truth of the following
propositions.

(6) John does not resemble George.

(7) Fred does not resemble Bill.

Now, if Realism is true, the John and Bill are referents of one
and the same resemblance relation. It follows that John and George
are respectively referent and relatum of one and the same resemblance
relation - i.e. it follows that John resembles George. This, of
course, contradicts (6). Similarly, Fred and Bill, being respectively
referent and relatum of one and the same resemblance relation, must
resemble one another - which contradicts (7). Again, the Realist is
refuted.
27. The types of arguments presented in the previous two sections can, I believe, be used to show that no other symmetrical or asymmetrical relation can be universal. Furthermore, since any particular occurrence of a not-symmetrical relation must be either symmetrical or asymmetrical, depending upon its terms, it follows that the above arguments are sufficient to show that no relations can be universal; since every relation, we agreed, must be either symmetrical, asymmetrical, or not-symmetrical.

These arguments are not, however, effective against the monadistic view that the relations between particular entities are reducible to qualities of those entities. Nor are they effective against the monistic view that relations are predicates or qualities of the whole which comprises the terms which they relate. But neither of these views postulates the reality of relations as a distinct ontological category. In any case, we have already seen, in this chapter, that neither of these views is an acceptable view of the nature and status of relations.

28. In this and the previous chapter I have argued that there are four fundamental categories of existence: Substance, Quality, Relation, and Unity. I have also considered some of the implications of the validity of these categories. Until now we have not, however, reached any conclusions about the number of substances which make up the Universe. Is the Universe a single substance, or does it comprise a plurality of substances? And if a plurality, upon what basis is substance differentiated? In the next chapter we will attempt to answer these questions.
NOTES

1. The *nature* of a substance is considered here to be a single entity, viz., the compound quality comprising those qualities which are true of the substance.

2. Cf., F.H. Bradley, *Appearance And Reality*, p.25:

   I rest my argument upon this, that if there are no differences, there are no qualities, since all must fall into one. But if there is any difference, then that implies a relation.


10. Cf., Spinoza, *Short Treatise On God, Man, And His Well-Being*, Book 1, Chapter X, §1:

   Some things are in our intellect and not in Nature; so these are only our own work, and they help us to understand things distinctly. Among these we include all relations, which have reference to different things. These we call *beings of reason*.


22. Cf., Bradley, Appearance And Reality, p.125:

Relations, we saw, are a development of and from the felt totality. They inadequately express, and they still imply in the background that unity apart from which the diversity is nothing.

29. This does not mean that they do not imply the existence of characteristics in their terms.
30. Strictly speaking, we are not entitled, at this stage, to conclude that every existent falls under one of these categories, since we have not shown that these are the only valid categories of existence. I would maintain, however, that any further categories are definable in terms of these four.

If we are to look for substance anywhere, I should find it in events which are in some sense the ultimate substance of nature.
34. I am using the terms “occurrent” and “continuant” in Johnson’s sense. See his Logic, Part 1, Chapter 12, §8.
35. I have, for the sake of present discussion, assumed that time is real, and that existence therefore has a temporal dimension.
43. The original text here has "relations". I have modified the text in accordance with McTaggart's own correction. See Keeling, "McTaggart's *Nature Of Existence*, Vol.1, Comments And Amendments", p.548.
49. See, for example, "The Nature Of Universals And Propositions" in his *Studies In Philosophy And Psychology*, Chapter 7; and "Universals Again".
51. Grossmann's criticisms of Particularism can be found, initially, in his *Meinong*, Chapter 1. These criticisms are repeated, in much the same form, in his *The Categorial Structure Of The World*, Chapter 2, §1.

I conclude, then, that the relation between A and B in the proposition "A differs from B" is the general relation of difference, and is precisely and numerically the same as the relation affirmed between C and D in "C differs from D." And this doctrine must be held, for the
same reasons, to be true of all other relations; relations do not have instances, but are strictly the same in all propositions in which they occur.

Russell's views are criticised, on quite different grounds, by H.H. Joachim in *The Nature Of Truth*, Chapter 2.

56. It is to be noted that the terms involved are understood to be referents and relata of the relation, and *not* of the fact or state of affairs of which they are constituents.
1. The question whether the Universe is a plurality of substances, or whether it is a single substance, is the question whether substance is differentiated. This question is treated by McTaggart in two different ways. In Chapter 7 he appeals to perception, which, he maintains, provides us with evidence that there is more than one substance. In Chapter 22, on the other hand, an appeal is made to the premiss that substance is infinitely divisible. In each case, it is maintained, we can be certain that substance is differentiated.

2. Although McTaggart goes to some trouble in Chapter 7 to dispel any doubts we might have about founding the belief that substance is differentiated upon empirical evidence, his arguments are, I suggest, both redundant and of doubtful cogency. They are redundant insofar as the premiss, introduced in Chapter 22, and considered to be self-evident, that substance is infinitely divisible, is sufficient to establish that substance is differentiated. And they are of doubtful cogency insofar as they are based upon certain unargued assumptions about the nature of cognition. In Section 76 of The Nature Of Existence, for example, McTaggart concludes that the existence of a single perception is sufficient to establish that substance is differentiated. But this conclusion is based upon the implicit assumption that perception typically involves a distinction between the perception as such -
which is considered to be either a state of the self, or a relation, one term of which is the self — and what he calls the perception-
datum; and, that this distinction amounts to, or involves, a
distinction between two (or more) substances. This assumption is,
however, controversial. It was rejected by Berkeley and Hume, for
example, and, more recently, by William James and F.H. Bradley.
And even though the reasons which have been given by these philosophers
for denying the ultimate validity of such a distinction might be
unsound, I do not think that McTaggart is entitled, at this stage, to
simply assume, without argument, that the distinction is valid.

A similar difficulty arises if we attempt to found our conclusion
that substance is differentiated upon a consideration of the nature
of discursive cognition. As McTaggart acknowledges, our answer to
the question whether the existence of a thought or judgement implies
that substance is differentiated depends upon our particular theory
of the nature of thought and judgement. If we accept the commonly
held view that thought involves a relation between the self and a
proposition, then we will not be entitled to conclude that the
existence of a thought or judgement implies that substance is
differentiated unless we assume that the proposition itself is a
substance — and this is a view which is not generally accepted.

McTaggart does admit that there is a difficulty with concluding
that substance is differentiated from the premiss that a thought or a
judgement exists. But he maintains that even if the existence of a
thought or judgement is not sufficient to establish that substance is
differentiated, our knowledge of the existence of a thought or a
judgement is sufficient; since that knowledge, he insists, is based
upon the awareness of the thought or judgement, and that awareness
must, he assumes, be a different substance from the original thought or judgement.

The problem with this argument is that it involves the implicit assumption that the awareness of a thought or a judgement must be a different cognition from the original thought or judgement. But this assumption is controversial. It was rejected by Brentano, for example*. And to the extent that it is controversial, the cogency of McTaggart's argument is brought into question.

3. Rather than attempting to establish the conclusion that substance is differentiated upon empirical evidence, I think that McTaggart would have been better served at this stage of the inquiry by simply appealing to the self-evidence of the premiss that substance is infinitely divisible. The truth of this premiss is essential to his general metaphysical theory, and its acceptance, as I mentioned above, renders the arguments in Chapter 7 redundant. I propose, then, to ignore empirical considerations and appeal directly to the self-evidence of the premiss that substance is infinitely divisible to establish that substance is differentiated.

This approach has the advantage of reducing the empirical premisses in our theory to one - the premiss that something exists. It also has the advantage of avoiding a rather unfortunate step in McTaggart's overall argument. In Section 78 of The Nature Of Existence, McTaggart derives the category of Relation from the premiss, which he claims to have established empirically, that substance is differentiated.
We have now a plurality of substances, and it is therefore evident that there will be Relations among substances.

The problem here is that if the category of Relation is to be derived from the premiss that substance is differentiated, and if that premiss is to be established by empirical evidence, then, insofar as the empirical considerations do not, as we saw in the previous section, conclusively establish the truth of that premiss, the validity of the deduction of the category of Relation is brought into question.

We have, however, avoided this problem by deriving the category of Relation from the premiss that a substance is different from its nature. And this premiss was not established by empirical evidence — that is, apart from the initial premiss that something exists. But we might also follow McTaggart and derive the category of Relation from the premiss that substance is differentiated; and this deduction would be valid providing that we establish that premiss by means of the premiss that substance is infinitely divisible. The fact that there might be more than one way of establishing the validity of a particular category does not, of course, conflict with any methodological principle which we have adopted. On this point we can agree with McTaggart when he claims that it is possible to demonstrate the validity of various stages in a system of metaphysics in more than one way.

4. The proposition that substance is infinitely divisible I consider, then, to be self-evident. And, on the basis of this premiss I conclude that substance is differentiated. Insofar as the premiss
is considered to be self-evident it is, of course, pointless to try and demonstrate its truth. If anyone doubts that it is true, then we can only hope to convince him of its truth by removing possible obstacles in the way of his directly intuiting that it is true. We might do this in either of two ways: (i) by clarifying, as far as possible, the meanings of the terms involved in the proposition; (ii) by showing that those arguments which profess to establish the truth of the contrary view are unsound. I will consider each of these approaches in turn.

5. One obstacle in the way of acknowledging the truth of the premiss that substance is infinitely divisible might be the view, which we discussed in Chapter 1, that the concept of Substance is a merely relative or negative concept. Insofar as our concept of substance is without positive content, it might be argued that it is difficult, if not impossible, to decide whether the proposition that substance is infinitely divisible is true or false.

I think that this is a reasonable objection to make against most substance theorists, including McTaggart, for whom the concept of substance remains a merely relative concept. But I do not think that it is a reasonable objection to our own view, according to which existence is categorised as substance. Although we cannot form a positive concept of existence, existence is given in perception or intuitive cognition. And it is, I suggest, given as a continuum - i.e., as infinitely divisible. Furthermore, our awareness of existence, as such, might be said to be an a priori intuition, analogous to Kant's view of the nature of our intuitions of space and time, in the sense that existence is the material condition of all
possible perception. And, in the same way that the recognition of such \textit{a priori} intuitions provided Kant with a novel solution to the question how Arithmetic and Geometry, as \textit{a priori} sciences, are possible, so the recognition of the \textit{a priori} nature of our awareness of existence may provide us with a novel solution to the question how Metaphysics, as an \textit{a priori} science, is possible.

But even if one is unable to directly intuit that existence is a continuum, it is, I think, possible to show, by \textit{reductio ad absurdum}, that it must be a continuum. The argument is this. Let us assume that existence is not a continuum. Then, between any two given parts of existence it must be possible that nothing should exist. But to say that nothing exists between two parts of existence simply means that there is a part of existence, between these two parts, which has no determinate nature. Hence, between any two parts of existence there must be another part of existence. Existence is therefore a continuum.

6. In reply to the above argument, and to the claim that the infinite divisibility of substance is self-evident, some philosophers have argued that substance must be simple – in the sense that it is without parts. I will now consider the most important of these arguments, and argue that they are either unsound, irrelevant to our particular view of substance, or both unsound and irrelevant to our particular view of substance.

The proposition that substance is simple might be understood to mean either (i) that there is only one substance – the Universe or God – which is simple; or (ii) that there is an indefinite, and perhaps infinite, number of substances, each of which is simple. The
first view finds its typical advocate in Spinoza. The second view is typically represented by Leibniz. The reasons given by each philosopher for believing that substance must be simple are, however, quite different; and I will consider them in turn.

7. In the *Ethics* Spinoza argues that the following two propositions are true, and together sufficient to prove that substance must be simple.

P12: *No attribute of a substance can be truly conceived from which it follows that the substance can be divided.*

P13: *A substance which is absolutely infinite is indivisible.*

Let us consider, firstly, Proposition 12. The proof of this proposition is as follows.

Dem: For the parts into which a substance so conceived would be divided either will retain the nature of substance or will not. If the first [NS: viz. they retain the nature of the substance], then (by P8) each part will have to be infinite, and (by P7) its own cause, and (by P5) each part will have to consist of a different attribute. And so many substances will be formed from one, which is absurd (by P6). Furthermore, the parts (by P2) would have nothing in common with their whole, and the whole (by D4 and P10) could both be and be conceived without its parts, which is absurd, as no one will be able to doubt.
But if the second is asserted, viz. that the parts will not retain the nature of substance, then since the whole substance would be divided into equal parts, it would lose the nature of substance, and would cease to be, which (by P7) is absurd.¹

Clearly, the central concept in this proof is that of an attribute of substance. This has proved to be a notoriously difficult concept to understand; and any interpretation of what Spinoza meant by attribute must, unfortunately, to some extent remain conjectural. Perhaps the best way of trying to understand what Spinoza meant is to consider an attribute to be an ultimate or supreme determinable or genus, the determinate forms of which are the modes¹. Spinoza claims that substance has an infinite number of attributes¹; and, that thought and extension are two among these attributes. Any particular thought or any particular (spatially extended) body is a determinate mode of one of the infinite attributes. Now, according to Spinoza, there are two kinds of infinity: an entity might be absolutely infinite — in which case it is not limited by any other kind of entity; or, it might be infinite according to its kind — in which case it is not limited by any other entity of that kind. The attributes are considered to be infinite in the latter sense. Substance is considered to be infinite in the former sense.

If we consider the actual demonstration of Proposition 12 it is clear that the cogency of the first part of the demonstration depends upon the claim that, if substance is divisible, then any part of substance must retain the essential nature of substance. Among the essential properties of substance are the following: (1) it is absolutely infinite; (2) it is self-caused; (3) no two substances can
share the same attribute. Should substance be divisible, then, according to Spinoza, the parts could not retain these essential properties of substance — hence they could not, themselves, be substances. Our reply to Spinoza must, accordingly, show either (a) that the above properties are not essential properties of substance; or (b) that the parts can retain these essential properties; or that both (a) and (b) are true.

8. Let us consider, firstly, whether the three properties mentioned by Spinoza are, in fact, essential properties of substance.

The first problem that confronts us is whether the definitions upon which the axioms are based are intended to be real or merely stipulative definitions. If they are merely stipulative, then it is possible for someone to stipulatively define the concept of substance in such a way that the "essential" properties attributed to substance by Spinoza are not, in fact, essential — i.e., are not included in, or do not follow from, the definition. If, on the other hand, they are meant to be real definitions, then it is possible that they are simply erroneous — in which case, once again, the properties mentioned by Spinoza might not be essential properties of substance. For example, if the definition of substance as "what is in itself and is conceived through itself" is merely stipulative, then it is an open question whether there is anything which satisfies that definition. The same problem arises if the definition is meant to be a real definition. The difficulty with Spinoza's view of substance is that he attempts to argue that, from the definition of substance, it follows that substance must exist. This conclusion is reached by means of Definition 1 — viz., that which is cause of itself is that,
the essence of which involves existence. According to Spinoza, it follows from the definition of substance that substance is causa sui; hence, that its existence is involved in its essence. The crucial question here, however, is whether anything can be causa sui, in Spinoza's sense. He has simply assumed that this is a self-consistent concept. But as I have argued in Chapter 1, and as Kant, and others, have pointed out in reply to the Ontological Argument for the existence of God, there cannot be an entity whose essence or nature involves existence, since existence is not itself a quality, and therefore cannot be involved in the essence or nature of any entity12.

9. If we reject the concept of causa sui as internally inconsistent, then it cannot be an essential property of substance. The first of Spinoza's "essential" properties of substance must therefore be rejected.

What are we to say, then, about the claim that substance is essentially infinite? I think that, when rightly understood, this claim is true. But then the claim that substance is infinite, when rightly understood, rather than being incompatible with the claim that substance is divisible, actually implies that substance is divisible - that it is a continuum. But before introducing what I consider to be the correct view of the infinite, we should attempt to determine exactly what Spinoza means when he says that substance is essentially infinite. The proposition that substance is essentially infinite is Proposition 8 of Part 1 (1P8) and the argument with which it is defended is as follows.
Dem.: A substance of one attribute does not exist unless it is unique (P5), and it pertains to its nature to exist (P7). Of its nature, therefore, it will exist either as finite or infinite. But not as finite. For then (by D2) it would have to be limited by something else of the same nature, which would also have to exist necessarily (by P7), and so there would be two substances of the same attribute, which is absurd (by P5). Therefore, it exists as infinite, q.e.d. 13

The claim that substance is infinite amounts, then, to the claim that substance is unlimited. Now, why does Spinoza claim that substance cannot be limited? The first reason, which is given above, is that if substance were finite it would have to be limited by something of its own kind - namely, by another substance. And, in order for one substance to be limited by another substance they must share the same attribute - i.e., the same ultimate determinable. But according to Proposition 5 (1P5), no two substances can share the same attribute. Hence, no substance can be finite.

The problem with this argument is that it only proves, at best, that no substance with a particular attribute can be finite according to its kind. It does not prove that substance must be absolutely unlimited. To prove that substance must be absolutely unlimited Spinoza would have to prove that it must have an infinite number of attributes. Now he does attempt to prove this with Proposition 11 (1P11) - the proposition that God necessarily exists. But the proof of this proposition involves the fallacious premiss that God is causa sui. And, without this premiss, there is no reason to believe that substance must be absolutely infinite.
But why, we may ask, might there not be a plurality of substances — each finite in the sense that it is limited by another substance with the same attribute? Spinoza gives two reasons for rejecting this possibility — both, I maintain, unsound. The first (I:P5:Dem.), is that if two substances shared the same attribute, they could only be distinguished by their affections or modes. (I will take a liberty here and equate the modes with what we have called "qualities"). And this, according to Spinoza, is impossible, since a substance is claimed to be prior, in its nature, to its affections or qualities.

...if the affections are put to one side and [the substance] is considered in itself, i.e. (by D3 and A6), considered truly, one cannot be conceived to be distinguished from another, i.e. (by P4), there cannot be many, but only one [of the same nature or attribute], q.e.d."

It seems to me that this reply begs the question. Of course, if we ignore the modes or qualities of any two substances, then they will be indistinguishable. But our contention is that what distinguishes one substance from another are the modes or qualities. Let us assume, for example, that we have two spatially extended, and adjoining, squares. One is red, the other blue. Let us also assume that they have no other non-spatial qualities which might differentiate them. If we ignore the redness and blueness of these substances, and consider them simply as spatially extended figures, then it will be impossible to distinguish one from the other. But our claim is that it is the redness and the blueness which differentiate the two substances. It is evident that one and the same substance cannot be
both red and blue in the same respect — i.e., the same part of a spatially extended substance cannot be both red and blue at the same time. These qualities must belong either to different parts of the substance or to different substances. If they belong to different parts of the same substance then we will have shown that substance is divisible. And if they belong to two different substances, then we will have shown that two substances can share the same attribute. In either case Spinoza’s argument is refuted.

The second reason which Spinoza gives for concluding that substance must be infinite is to be found in Scholium 1 to Proposition 8 (1P8:Schol.1).

Schol.1: Since being finite is really, in part, a negation, and being infinite is an absolute affirmation of the existence of some nature, it follows from P7 alone that every substance must be infinite. [NS: For if we assumed a finite substance, we would, in part, deny existence to its nature, which (by P7) is absurd.]

The essential flaw in this argument is that it appeals to Proposition 7, the proposition that substance is causa sui, to establish its conclusion. And proposition 7, we have seen, is false. But the argument also appeals to the principle that finitude involves negation. It is then concluded, on the basis of this principle, that any finite substance would, in some sense, lack existence.

The argument, as it stands, is clearly unsound. The principle that finitude involves negation, when applied to substance, can only mean that a finite substance is not an unlimited substance. But this is
not a contentious claim. The contentious claim is, that by insisting that a substance might be finite, we are thereby denying existence of it. And this claim, it seems to me, is false. Insofar as we have categorised existence as substance we have seen that it is impossible to deny existence of any substance. Now, it is a truism that any proper part of substance cannot contain the whole of existence. But what Spinoza seems to have done is to argue that, since no proper part of substance can contain all of existence, it therefore lacks any existence. And this is an obvious non sequitur. It is analogous to the claim that, since a finite volume does not contain all of space, it therefore lacks any volume.

10. We have shown, then, that none of the three properties mentioned by Spinoza in the Demonstration of Proposition 12 is an essential property of substance. It is possible that substance should be finite and divisible, and that two substances should share the same attribute. It is therefore possible that each part should retain the nature of substance — i.e., that each part is itself a substance. Now, although substance need not be absolutely infinite, there is a sense in which every substance must be infinite; and according to which its infinitude, rather than being incompatible with its divisibility, is a natural consequence thereof.

In order to understand in what way the divisibility of substance is consistent with its infinitude I shall appeal to the classic definition of an infinite system put forward by Richard Dedekind in his "Was sind und was sollen die Zahlen?".
64. Definition. A System $S$ is said to be *infinite* when it is similar to a proper part of itself (32); in the contrary case $S$ is said to be a *finite* system.\(^{11}\)

The important undefined concepts in this definition are those of *similarity* and *proper part*. These concepts are defined by Dedekind in the following ways.

6. Definition. A system $A$ is said to be a *proper* [echter] part of $S$, when $A$ is part of $S$, but different from $S$. According to (5) then $S$ is not a part of $A$, i.e., there is in $S$ an element which is not an element of $A$.\(^{11}\)

32. Definition. The systems $R$, $S$ are said to be *similar* when there exists such a similar transformation $\phi$ of $S$ that $\phi(S)=R$, and therefore $\phi(R)=S$. Obviously by (30) every system is similar to itself.\(^{11}\)

To show how the above definition of an infinite system is applicable to substance we need to introduce the concept of a *set of parts* of a substance. Following McTaggart, we will define a set of parts of a substance thus.

A Set of Parts of any whole is any collection of its parts which together make up the whole, and do not more than make it up, so that the whole would not be made up if any of those parts, or of their parts, should be subtracted.\(^{16}\)
Let us assume, for example, that we have a substance, $A$, represented by the square below [Figure 3.1].

If we divide $A$ by a vertical line we will then have two parts of $A$, which we will call $B$ and $C$ [Figure 3.2].
Let us now divide $A$ by a horizontal line. We will then have two parts of $A$, namely, the top half and the bottom half, which we will call $D$ and $E$ respectively [Figure 3.3].

But we will also have, as a result of our previous divisions, four parts of $A$: the top left-hand quarter; the top right-hand quarter; the bottom left-hand quarter; and the bottom right-hand quarter. We will call these parts $F, G, H$ and $I$ respectively [Figure 3.4].

Each of the collections of parts formed by our successive divisions of $A$ is, in accordance with McTaggart's definition, a set of parts of $A$. $\{B,C\}$, $\{D,E\}$, and $\{F,G,H,I\}$ are therefore distinct sets of parts of $A$. Each of $B,C,D,E,F,G,H,I$ is thus a part of $A$ as well as being a member of a set of parts of $A$. Each of $B,C,D,E,F,G,H,I$ is also, in accordance with Dedekind's definition, a proper part of $A$ - since each is a part of $A$, but different from $A$. 
Let us now assume that substance is a continuum, and that each part of substance is itself a substance. Assuming that $A$ is a substance, it follows (i) that $A$ has a set of parts with an infinite number of members; (ii) that any proper part of $A$ has a set of parts with an infinite number of members. Let us call the set of parts of $A$, $\alpha$, and the set of parts of a proper part $B$, of $A$, $\beta$. $A$ and $B$ might thus be said to be "systems" of substances. Now, the systems $A$ and $B$ are "similar" insofar as there is a one-one correspondence between the members of $\alpha$ and the members of $\beta$. And, since $B$ is a proper part of $A$, $A$ is an infinite system in accordance with Dedekind's definition (at §64). But, *ex hypothesi*, substance is infinitely divisible. Therefore, since every part of substance is, itself, a substance (and therefore infinitely divisible), every part of substance will be an infinite system. In this sense, then, every part of substance will retain the nature of substance and be an infinite system.
11. I have argued that Spinoza has given us no conclusive reasons for believing that substance must be simple, or for believing that the Universe is a single, indivisible substance. We will now consider the reasons given by Leibniz for believing that substance must be simple or indivisible, and that the Universe is an infinite aggregate of simple substances, and not itself a substance.

Ultimately, Leibniz’ reasons for believing that substance must be simple can be summed up by the following opening passages of *The Monadology*.

1. The Monad, of which we shall here speak, is nothing but a *simple* substance, which enters into compounds. By ‘simple’ is meant ‘without parts’.

2. And there must be simple substances, since there are compounds; for a compound is nothing but a collection or *aggregatum* of simple things.21

The suggestion is, I think, that the *existence* of an aggregate or a compound is dependent upon the existence of its constituent elements. A heap of stones, for example, insofar as it exists as a heap, is dependent upon the existence of the individual stones which make it up. If we accept this principle, then, it might be argued, the claim that substance is infinitely divisible would amount to the claim that every substance is a compound - the existence of which is dependent upon its constituents, whose existence is dependent upon their constituents, and so on to infinity. Such a regress would seem to be vicious since no compound could exist unless it comprises
elements which were not themselves compounds, and whose existence did not depend upon the existence of further constituents.

12. There are a number of difficulties with this argument. In the first place, Leibniz, like Bradley, has not, I maintain, clearly distinguished the concepts of unity and simplicity. A tacit premiss in the argument is the principle, which he states elsewhere\textsuperscript{22}, that what is not truly one entity is not truly an entity - where unity is equated with simplicity. But we saw in the previous chapter that unity, rather than being incompatible with complexity, actually implies complexity - so that there is no obvious inconsistency involved in claiming that an aggregate of substances is either a genuine unity or a genuine entity.

Secondly, as Broad has pointed out, when discussing Kant's restatement of Leibniz' argument in the Second Antinomy\textsuperscript{23}, there is no formal contradiction involved in maintaining that substance is infinitely divisible. If a contradiction is involved, then it can only arise as a result of a consideration of substance itself. And this is where our view of substance has a distinct advantage over most, if not all, other views. By categorising existence as substance, it can be demonstrated, firstly, that any aggregate of substances is a substance; and, secondly, that the existence of the aggregate is not dependent upon, in a vicious sense, the existence of its constituents.

To demonstrate that any aggregate of substances is a substance we must first determine in what sense an aggregate is a unity. In accordance with the principle, introduced in the previous chapter, that the kind of relation between two or more entities determines the
kind of unity which comprises them, I should say that the unity of an aggregate is determined by a relation of *co-existence* between its constituents. If \( x \) co-exists with \( y \), then \( x \) and \( y \) form an aggregate, or, rather, they are comprised by a unity of aggregation. To say of two or more qualities, for example, that they co-exist means that they are predicatable of, or inhere in, some existent. And to say of two or more relations that they co-exist means that they relate two or more existents. But to say of two or more substances that they co-exist can only mean that they are parts of existence. Now, any two parts of existence must form either the whole of existence, or a whole within existence; and both existence as a whole, and any whole within existence, are substances. Thus, any aggregate of substances is a substance.

Secondly, it follows that the existence of any aggregate of substances is not dependent upon the existence of its constituents in a vicious sense, since the existence of the aggregate is *identical with* the existence of its constituents. Once again, we may draw a favourable analogy with Kant's views on Space. A spatial whole comprising a number of parts is not dependent upon these parts for its spatiality - it is simply identical with the space of its parts. Analogously, the existence of an aggregate of substances is not dependent upon the existence of its members for its existence, it is simply identical with the existence of these members.

13. On the basis of the previous discussion we are, I believe, entitled to conclude that neither Spinoza nor Leibniz has given any conclusive reasons for believing that substance is simple or indivisible. And, since the arguments put forward by these
philosophers are, in my opinion, the only plausible arguments that have been put forward in defence of the view that substance must be simple, we are, I believe, entitled to accept the principle that substance is infinitely divisible as true.

14. Having established that substance is infinitely divisible, hence that there is a plurality of substances, we may now consider the question of what differentiates one part of substance from another.

McTaggart's answer to this question, and, I believe, the only possible answer, is that substance is differentiated by its nature. The principal argument which McTaggart uses to establish the principle that substances are differentiated by their natures is as follows.

Can there, then, be two things which are exactly similar? I think that the answer must be that there cannot. The connection between diversity and dissimilarity is, no doubt, synthetic. "A and B are two things," and "A and B are dissimilar," are not two ways of stating the same fact. But it seems clear to me that diversity implies dissimilarity — that two things cannot have the same nature. If we make the experiment of removing in thought all difference of nature from two substances, we shall find that, when we have succeeded, we are no longer contemplating two substances, but one. And this does not, as I conceive, come from the impossibility of our distinguishing the two substances — which would not prove there were not two — but from the recognition of the impossibility of diversity without
dissimilarity. The nature of a substance expresses completely what the substance is. And the same complete expression of what a substance is cannot be true of each of two substances. The substance is made this substance by its nature, and, if the nature is the same, the substance is the same.24

Before considering the merits of this argument a number of points should be noted. Firstly, in claiming that the above principle - which McTaggart calls the principle of the Dissimilarity of the Diverse - is a necessary truth, we are not, as he remarks, claiming that it is an analytic truth. When we say, for example, that A and B are diverse, or numerically distinct substances, we do not mean that they are dissimilar. Diversity of substances implies dissimilarity, but the concepts of diversity and dissimilarity are not equivalent.

Secondly, following Armstrong25, we may distinguish a "strong" from a "weak" version of the principle. The strong version amounts to the claim that no two substances can be exactly similar in respect of their Original Qualities. The weak version amounts to the claim that no two substances can be exactly similar in respect of their Primary Qualities. The difference lies in the fact that the Primary Qualities of a substance include those qualities which are directly determined by the Original Relationships into which the substance enters. McTaggart does not claim that the strong version of the principle is a necessary truth - only that the weak version is. This point is important, since many objections to the principle - including some of Armstrong's own - are objections to the strong version. Armstrong, for example, rejects the strong version of the principle and accepts
the weak version—although he denies that the latter is a necessary truth.

Thirdly, we should distinguish the claim that no two substances can have one and the same nature from the claim that no two substances can have natures which resemble each other exactly. Given that the characteristics of substances are, as I have argued in the previous chapter, particular entities, the first claim is self-evident. But it is not equivalent to, nor does it directly imply, the second claim. And it is the second claim which is, I think, generally understood to be what is meant by the principle of the Dissimilarity of the Diverse.

Fourthly, we should distinguish the claim that we cannot distinguish one substance from another unless they are dissimilar from the claim that the diversity of substances is implied by their dissimilarity. The former is an epistemological claim—which may or may not be true. The latter is an ontological claim, and it is what McTaggart means, and what I shall mean, by the principle of the Dissimilarity of the Diverse.

The principle of the Dissimilarity of the Diverse will, then, be understood to be (a) a necessary, but not an analytic, truth; (b) an ontological, rather than an epistemological principle; and (c) equivalent to the claim that no two substances can resemble each other exactly in respect of their Primary Qualities. Having thus clarified the nature of the principle, we may now attempt to determine whether it is true.

15. In agreement with McTaggart, I consider the Dissimilarity of the Diverse to be self-evident. Insofar as it is considered to be
self-evident it is, of course, pointless to try and demonstrate its truth. But we can, and should, attempt to establish its truth indirectly - by showing that objections to it are either unsound or irrelevant.

Let us consider, firstly, the claim that the principle is not a necessary truth. In Chapter 9, Section 1, of his *Universals And Scientific Realism*, David Armstrong puts forward a number of reasons for concluding that the Dissimilarity of the Diverse is not a necessary truth. The first argument, which is to be found on pages 94-95 of Volume 1, is an attempt to show that, if the principle is accepted by someone who endorses a "bundle" theory of substance - i.e., the view that a thing or substance is simply a bundle or aggregate of qualities - then he or she is involved in a vicious circle.

Now we are not, I think, strictly obliged to reply to the argument, since we do not accept a bundle theory of substance. But Armstrong does seem to think that his argument, if sound, is sufficient to refute the claim, which we do endorse, that the weak version of the principle is a necessary truth. So, if we are to defend the weak version we ought to consider Armstrong's argument.

The argument is this. Let us assume that we have two substances which resemble each other exactly in respect of their Original Qualities. Let us also assume, in accordance with the weak version of the Dissimilarity of the Diverse, that the substances are differentiated by their natures. It follows that they must be dissimilar in respect of their Primary Qualities; and the only Primary Qualities which are not Original Qualities are those qualities which are determined by Original Relationships - i.e.,
The relational properties of a particular will be a matter of its having relations to other particulars of a certain sort. But the notion of a particular is the notion to be analysed. So the Bundle theorist must analyse the situation where a particular has a relational property by saying that one bundle of properties has a certain relation to another bundle of properties.

Every relational property that a particular has, then, will be a matter of a bundle of properties standing in a certain relation to other bundles of properties. The bundles of properties themselves will therefore have to be bundles of non-relational properties. Only so can there be bundles to have relations to other bundles. Each of these bundles is a different particular, so no two bundles can contain exactly the same non-relational properties. That is to say, the Bundle theory is forced to appeal to the Strong version of the Identity of Indiscernibles. Relational properties cannot be used to differentiate particulars. But we have seen that the Strong form of the Principle is not a necessary truth, and may not even be true."

There are a number of reasons why this argument fails to affect our position. Firstly, as I remarked earlier, it is only relevant to
a "bundle" theory of substance — a theory which we rejected in Chapter 1.

Secondly, it is based upon the assumption that all qualities and relations are universal, rather than particular, entities. If, on the other hand, all characteristics of substances are particular, then there is no circularity involved in maintaining that the relational qualities of substances are determined by their relationships with other particular entities — since these particular entities may be qualities or relations.

Thirdly, Armstrong has not, I think, clearly distinguished two different senses of the term "particular" — with the result that his argument might be claimed to involve an equivocation. In the first sense, which we might call the "substantive" sense, the quality of particularity is equivalent to the quality of substantiality — i.e., the quality of not being predicable of an entity. In the second sense, which we may call the "predicative" sense, the quality of particularity is equivalent to the quality of uniqueness or non-repeatability. An entity which is particular in the second sense need not be particular in the first sense, and vice versa. It seems to me, however, that Armstrong's argument involves two tacit assumptions arising from the failure to clearly distinguish these two senses of "particular". The first is that the only unique entities are substantial entities. The second is that the only substantial entities are things or "particulars". Now, we have seen that the first assumption is false in the case of existent characteristics; and Armstrong has not given us any reasons for accepting the second. In any case, even if we assume that existent characteristics are universal, it still does not follow that the only unique entities are
substantial entities. And if we do assume that the only unique entities are substantial entities, it still does not follow that the only substantial entities are things or "particulars". All that the defender of the weak version of the principle of the Dissimilarity of the Diverse is committed to, however, in order to avoid Armstrong's criticism, is the claim that the relational quality or qualities in question are determined by a relation between the Original Qualities and some unique entity. A vicious circle only arises if the unique entity in question is claimed to be another "bundle" of Original Qualities.

16. Armstrong's second objection to the Weak version of the Dissimilarity of the Diverse is that, even if it is in fact true, it might not be a necessary truth, since, he claims, there are logically possible cases in which the principle does not hold.

The first of the counterexamples we are asked to consider is attributed to Max Black. Unfortunately, the passage quoted by Armstrong on page 95 of Volume 1 of Universals And Scientific Realism does not make it entirely clear what the actual objection to the principle is. So, I think we ought to turn to Black's original article for the relevant argument. The first of the passages quoted below states the nature of the supposed counterexample. The second, which is the passage quoted by Armstrong, introduces a refinement of the original example, and its relevance to the argument is not obvious when cited in isolation.

Isn't it logically possible that the universe should have contained nothing but two exactly similar spheres? We might
suppose that each was made of chemically pure iron, had a
diameter of one mile, that they had the same temperature,
color, and so on, and that nothing else existed. Then every
quality and relational characteristic of the one would also be
a property of the other. Now if what I am describing is
logically possible, it is not impossible for two things to have
all their properties in common. This seems to me to refute the
principle.27

Let me abandon the original idea of a plane of symmetry and to
suppose instead that we have only a center of symmetry. I mean
that everything that happened at any place would be exactly
duplicated at a place an equal distance on the opposite side of
the center of symmetry. In short, the universe would be what
the mathematicians call "radially symmetrical". And to avoid
complications we could suppose that the center of symmetry
itself was physically inaccessible, so that it would be
impossible for any material body to pass through it.21

The suggestion is this. If we suppose that there are two
substances, viz. the iron spheres, one on either side of the centre
of symmetry, which resemble each other exactly in respect of their
original qualities and relations, then, it is claimed, the substances
could not differ in respect of their Primary Qualities - hence their
diversity cannot be determined by a difference in their natures.

Clearly, the cogency of this example depends upon what we consider
to be logically possible. On the one hand, it might be replied, as
Brand Blanshard did, in fact, reply"", that the example begs the
question by assuming what needs to be proved — namely, that there might be two substances which resemble each other exactly in respect of their Primary qualities.

Now I think we can see on reflection that even this specially devised example begs the question it is supposed to settle. When Mr Black says that each of the spheres has similar characteristics, that the one has all the properties and relations of the other, what does he mean by 'each', and what by 'the one' and by 'the other'? Are these phrases translatable into 'this one' and 'that one', sphere No.1 and sphere No.2? No, because he is maintaining that if the characters are indistinguishable, there can be no ground on which we could call either of them 'this' rather than 'that', 'No.1' rather than 'No.2'. Now we who hold that twoness is based on dissimilarity are maintaining that where you have nothing on which you could base a 'this' and 'that', you cannot have two things; and hence to begin by saying in effect, 'Take a world consisting of two things that do not even differ as this and that', is asking us to do what we are maintaining we cannot do. The directions sound as if they could be fulfilled, but with no 'this' and 'that' they cannot be.

I think that this reply is adequate — so far as it goes. But it does rest upon the assumption that there are no "bare" particulars or substances which might serve to differentiate one instance of a quality from another. Should there be such bare particulars, then we would have an objective basis for distinguishing 'this' sphere from
that' sphere. Blanshard rejected such "bare" particulars for much the same reasons as McTaggart did. And, on this basis, his objection is quite sound. Black does not commit himself to the existence of such bare particulars, but without them I do not think he can overcome Blanshard's objection. Furthermore, he explicitly rejects the one view which might seem to be a genuine alternative to the bare particular theory - namely, the view that spatial and/or temporal position is equivalent to, or determines, the particularity of a substance.

On the other hand, there is, I think, a certain vagueness associated with the notion of a supposal in this context. If we are asked to suppose that there are two substances such as those described by Black, this might be understood to be either a request to image two such substances; or else it might be understood to be a request to contemplate the proposition "there might be two substances which resemble each other exactly in respect of their Primary qualities", and to decide whether it is true or false. If supposing means imaging, then clearly the two imaged spheres will be dissimilar in respect of their positions, hence their relational qualities, within the imaged spatial field which contains them. For example, one sphere might be to the left of, or above, the other. If, on the other hand, supposing means something like making an assumption - in Meinong's sense - then what we will be contemplating, in making such a supposal, is a proposition, rather than two existent substances. And in that case the question-begging becomes explicit; since we will have been asked to assume the truth of a proposition which is claimed to be false by the defender of the principle of the Dissimilarity of the Diverse.
17. The second of Armstrong’s proposed counterexamples consists in the assumption that the Universe, or, rather, the temporal series of events which make up the Universe, might be eternally recurrent—so that there might be two or more distinct time-series which resemble each other exactly.

The cogency of this counterexample is, however, somewhat questionable. At best it shows that there might be two substances which resemble each other exactly in respect of their temporal, relational, qualities. It does not show that the substances must be exactly similar in respect of their other relational qualities. If, on the other hand, we assume that the two substances are exactly similar in respect of all their qualities, then the supposed counterexample again begs the question.

18. The third proposed counterexample mentioned by Armstrong was originally put forward by C.D. Broad in his *Examination Of McTaggart’s Philosophy*. The suggestion is this.

I am inclined to think that the Dissimilarity of the Diverse has seemed plausible because those who tried to envisage the possibility of exceptions, and failed to do so, unwittingly restricted their field of view in two respects. In the first place, they confined their attention to physical events and things, and forgot about sensibilia, experiences, and minds. Secondly, they assumed uncritically that there must be a single spatio-temporal system in which every particular has its place and date. Now, even if this be in fact true, there is, so far as I can see, no kind of necessity about it. It might be, as
Bradley suggested in the chapter on "Nature" in *Appearance and Reality* that, whilst every particular has its place and date in *some* spatio-temporal system, there is a plurality of such systems, and a particular in one has no spatio-temporal relation whatever to a particular in another.31

Again, the cogency of this counterexample is questionable. Let us assume that there are two such spatio-temporal systems, and that each contains a particular or substance which resembles a substance in the other spatio-temporal system in respect of its spatio-temporal, relational qualities. It does not follow that the two substances are exactly similar in respect of their other qualities; and if we assume that they *do* resemble each other exactly in respect of all their qualities, then the example begs the question.

And it begs the question in another way. We are asked to assume that there can be two spatio-temporal systems which are not differentiated by their relations to some other spatio-temporal system, or by their spatio-temporal relations to each other. The question-begging is, I think, again evident. We are asked to assume that there might be two spatio-temporal systems which resemble each other exactly. And this is an assumption which a defender of the principle of the Dissimilarity of the Diverse would reject as impossible.

19. I think that the reason why each of the proposed counterexamples has seemed plausible is that it is implicitly assumed that there is something which differentiates one substance from another other than a difference in their Primary qualities. In
Armstrong’s case, it is the assumption that substantiality is equivalent to particularity or uniqueness - that substances are essentially particular. But there is nothing in the definition of substance which implies that substance is essentially particular in the sense that it is essentially unique. It does follow from our definition that substance is essentially particular in the sense that it is not predicable of anything. But this is not the sense of "particular" which Armstrong uses when he talks of particulars.

If, on the other hand, we accept the view that all existent characteristics are particular, then we can consistently maintain that it is the particularity of the characteristics which determines the particularity of a substance. And this, as I understand it, is the essential truth expressed by the principle of the Dissimilarity of the Diverse. Existence, qua substance, is differentiated by its nature.

20. The conclusion that substance is differentiated by its nature allows us to draw the further conclusion that every substance must have what McTaggart calls an Exclusive Description. An exclusive description of a substance is a description which applies to that substance only, and is such that the substance is absolutely identified by it\(^1\). An exclusive description may, or may not, be a complete description of a substance. It follows from the Dissimilarity of the Diverse that every substance must have an exclusive description; and, since any complete description of a substance will include an exclusive description, any complete description will be an exclusive description. But not every exclusive description is a complete description. An exclusive description might
consist of a single complex quality, such as the quality of being the only son of the supreme deity, or the quality of being the tallest man in Australia – as long as there is no other substance which has that characteristic. And even though the substance is identified by that description, it may, and in most cases will, have more characteristics than that which is included in the description.

21. I do not see that there is any genuine problem with the concept of an exclusive description – once we accept the principle of the Dissimilarity of the Diverse. Problems do arise, however, when we consider the concept of a Sufficient Description. A sufficient description of a substance is an exclusive description which does not introduce an undescribed substance. The distinction between a sufficient and an exclusive description might be illustrated by the following examples. Let us assume the truth of the traditional account of the genealogy of Christ. In that case He might be exclusively described as “the only son of God”; or, as “the only son of the supreme deity”. Both descriptions are exclusive, since they identify Him absolutely. But the second is, and the first is not, a sufficient description since it introduces no undescribed substance. The first description is not sufficient because “God” is understood to be a logically proper name – hence it introduces an undescribed substance.

The controversial part of McTaggart’s views on exclusive and sufficient descriptions is the claim that every substance must have a sufficient, as well as an exclusive description. As we shall see, this principle is an essential premiss of the argument to show that the infinite divisibility of substance involves a contradiction. But
it is a principle which a number of critics have rejected as either unsound or unproven. So, it is essential that we consider the principle itself, and the arguments which McTaggart uses to establish it, in some detail.

22. What reasons, then, does McTaggart give for concluding that every substance must have a sufficient description? The principal argument for this conclusion is to be found in Section 105 of The Nature Of Existence. But before considering it we should note that McTaggart is not simply claiming that, as a matter of fact, every substance has a sufficient description - although he does attempt to show that this is the case in Sections 103 and 104. He is making the stronger, and more controversial claim that every substance must have a sufficient description.

It seems to me that there are at least two different ways in which the principle of Sufficient Descriptions can be established. The first, which is not McTaggart's own argument, but which is similar to it, is as follows. We know, in virtue of our acceptance of the Dissimilarity of the Diverse, that every substance has an exclusive description. Let us assume, then, that we have three substances, A, B, and C; that these three substances make up the Universe; and, that each has an exclusive description. Let us also assume that the exclusive descriptions of B and C each involve a relation to A; and, that B and C cannot be exclusively described except by including the fact that they stand in some relation to A in those descriptions. B, for example, might be exclusively described as "the only daughter of A", and C might be described as "the only son of A". Now, these exclusive descriptions of B and C can be rendered sufficient if we
can give a description of $A$ which does not introduce any undescribed substance. If $A$ is describable as "the only existent parent", then $B$ will be sufficiently described as "the only son of the only existent parent"; and $C$ will be sufficiently described as "the only daughter of the only existent parent". In that case, every substance will have a sufficient description.

If, on the other hand, we assume that $A$ cannot be sufficiently described then it is clear that we will be involved in a vicious circle. If $A$ cannot be sufficiently described, then it must, in accordance with the Dissimilarity of the Diverse, have an exclusive description which introduces some undescribed substance. Now, ex hypothesi, the only other substances in the Universe are $B$ and $C$. So, if $A$ is to have an exclusive description, that description must introduce either $B$ or $C$ as an undescribed substance. Let us assume that the description introduces $B$, so that $A$ is exclusively described as "the parent of $B". This description will, however, only be an exclusive description if there is some description which distinguishes $B$ from $C$ and from $A$. Now, if the only characteristic which distinguishes $B$ from $C$ and from $A$ is the quality "the only son of $A"$, then the dissimilarity of $B$ from all other substances, hence the existence of $B$, will be dependent upon the dissimilarity of $A$ from all other substances. But we have seen that the dissimilarity of $A$ from all other substances is determined by the exclusive description "the father of $B". Hence the dissimilarity of $A$ from all other substances is dependent upon the dissimilarity of $B$ from all other substances, which, in turn, is dependent upon the dissimilarity of $A$ from all other substances. Thus we have a vicious circle. The dissimilarity of $A$ from all other substances, hence the existence of
A, is dependent upon the dissimilarity of B from all other substances. But the dissimilarity of B from all other substances, hence the existence of B, is dependent upon the dissimilarity of A from all other substances. The existence of B is thus dependent upon the existence of A, which, in turn, is dependent upon the existence of B. The circle thus generated is clearly vicious.

23. McTaggart does not use the same kind of argument as the above to establish his conclusion. His own argument depends, instead, upon the generation of a vicious infinite regress. The argument is as follows.

By the results in the last chapter, A must be dissimilar to all other substances. The possibility of this depends on the existence of B, and the existence of B depends on its dissimilarity to all other substances. And this depends on the existence of C, and this on its dissimilarity to all other substances, and so on. If this series is infinite, it is vicious. For, starting from the existence of A, each earlier term requires all the later terms, and therefore requires that the series should be completed, which it cannot be. If, therefore, the series is infinite, A cannot be dissimilar to all other substances - and so cannot exist. Therefore, if A does exist, the series cannot be infinite. And if the series is not infinite, A has a sufficient description. Every substance, therefore, must have a sufficient description.
The relevant difference between my argument and McTaggart's is that my argument assumes only that there is a finite number of substances which make up the Universe. McTaggart's allows for the possibility that the number is infinite.

McTaggart's argument has, however, been criticised by Broad. I will now consider these criticisms and argue that they are not valid.

24. Broad's criticisms occupy pages 181 to 185 of Volume 1 of his *Examination Of McTaggart's Philosophy*. The first part of this critique consists in an attempt to show that it is conceivable that every substance should have an exclusive, without a sufficient, description. In the second part he criticises McTaggart's actual argument, and claims to show that it contains at least three "gross formal fallacies". I will consider each part of Broad's critique in turn, and argue that neither constitutes a conclusive objection to McTaggart's principle that every substance must have a sufficient description.

25. The principle that every substance must have a sufficient description is claimed to be refuted by the following example.

Imagine a universe consisting of just three minds, A, B, and C. We will suppose that none of them has a sufficient description. Now, suppose it were the case that A is jealous of B on account of C, that B is jealous of C on account of A, and that C is jealous of A on account of B. Then I maintain that each of these particulars would have an exclusive description, in spite of the fact that none of them had a sufficient description. A
I think that this argument is surprisingly weak. As Geach has pointed out, the qualities \( \varnothing \), \( \Psi \), and \( \chi \) are exclusive descriptions only if \( A, B, \) and \( C \) are differentiated by some principle or description other than these descriptions. In fact, it is difficult to see that this argument has any relevance at all to McTaggart's view. The important question here is not whether \( A, B, \) and \( C \) can have exclusive descriptions, but whether these descriptions are adequate to differentiate \( A, B, \) and \( C \) in a way which does not presuppose that they are already differentiated. And it is clear that Broad has not shown this to be the case. Furthermore, \( \varnothing, \Psi, \) and \( \chi \) can be readily converted into sufficient descriptions in the following way. If "A", "B", and "C" are logically proper names, then \( \varnothing \) is equivalent to the quality of being jealous of the only substance called "B" on account
of the only substance called "C"; \( \varphi \) is equivalent to the quality of being jealous of the only substance called "C" on account of the only substance called "A"; and \( \chi \) is equivalent to the quality of being jealous of the only substance called "A" on account of the only substance called "B". Each of these qualities applies to one and only one substance; and, since none introduces an undescribed substance, each is a sufficient description of that substance. So, the exclusive descriptions of \( A, B, \) and \( C \) mentioned by Broad are either equivalent to, or directly imply, sufficient descriptions of these substances. Broad's supposed counterexample to the principle of Sufficient Descriptions would seem, therefore, to be self-refuting.

26. The second part of Broad's criticism of the principle of Sufficient Descriptions involves pointing out what he considers to be a number of fallacies in McTaggart's argument. The first of the supposed fallacies is as follows.

McTaggart assumes that, if \( A \) had no sufficient description, any exclusive description of \( A \) would have to describe it by a certain relation to a certain other particular, \( B \). This is not so. The relation might be to \( A \) itself."

He then goes on to give an example in which a reflexive relational quality is adequate to be an exclusive description of a substance.

Suppose, for example, that the universe consisted of two minds, \( A \) and \( B \), each of which respected itself and despised the other. Then the property of respecting \( A \) would belong to \( A \) and to
nothing else. It would therefore be an exclusive description of
A."

There is an obvious reply to this criticism. On the one hand, unless A and B are differentiated by some other descriptions, the descriptions "respecter of A" and "respecter of B" would not be sufficient to differentiate A from B; and, in that case we would be faced with a vicious circle similar to that mentioned in the previous section. If, on the other hand, "A" and "B" are logically proper names of the two minds, then each will have a sufficient description implied by that fact: A will have the quality of being a respecter of the only substance called "A"; and B will have the quality of being a respecter of the only substance called "B". Each is an exclusive description, since it applies to one and only one substance. And each is a sufficient description since it introduces no undescribed substance.

The second fallacy which Broad claims to find in McTaggart's argument is as follows.

McTaggart assumes that, if A has to be described by reference to a particular B which is other than A, and if B has to be described by reference to a particular C which is other than B, then C must be other than A. This is, of course, completely fallacious. "C" might be simply another name for the particular of which "A" is a name."

Again, the reply to this criticism is obvious. The important question is not whether it is possible for two or more substances to
have exclusive descriptions, but whether these descriptions are sufficient to differentiate the substances. And in the example given by Broad it is clear that they are not. The relational qualities of a substance can only be exclusive descriptions of that substance if the terms of the relation which determines those qualities are differentiated independently of the occurrence of that relation. A might be described as the substance which has \( R \) to \( B \). And \( B \) might be described as the substance which has \( R \) to \( C \). But unless \( A, B, \) and \( C \) have exclusive descriptions determined independently of the fact that they are thus related, the qualities of each determined by \( R \) will not be exclusive descriptions of those substances. Furthermore, if "A", "B", and "C" are logically proper names, then the relational qualities of each substance determined by the fact that they have \( R \) to some other substance will imply sufficient descriptions of the substances. \( A \) will have the quality of having \( R \) to the only substance named "B", and \( B \) will have the quality of having \( R \) to the only substance named "C". And the fact that "A" and "C" are both names of one and the same substance does not alter the fact that these qualities are sufficient descriptions of \( A \) and \( B \).

The third fallacy which Broad claims to find in McTaggart's argument is this.

Even if the series had to start, and had then to continue without end and without recurrence, McTaggart's conclusion would not follow. His conclusion is that \( A \) would have no exclusive description. But, so far as I can see, this is a complete non-sequitur. \( A \) has the exclusive description of being the only particular that has \( R \) to \( B \). How could this be altered
by the fact that $B$ has no sufficient description, that its exclusive description must be of the form "having $S$ to $C$", and that the same must be true, *mutatis mutandis*, of $C$ and of every particular in a certain endless and non-recurrent series? Even if we accepted both the false premises which McTaggart tacitly assumes, the only conclusion which could legitimately be drawn is the following. "If every particular has an exclusive description, and there were any particular $A$ which lacked a sufficient description, then there must be an endless and non-recurrent series of particulars starting with $A$ and all lacking sufficient descriptions".40

As with the previous examples, the reply here is, I think, quite straightforward. McTaggart's claim is that every substance must have an exclusive description which is sufficient to differentiate it from every other substance. That is, the existence of a particular substance depends upon the fact that it is dissimilar to every other substance. The important point is that if the exclusive description of $A$, which differentiates it from every other substance, and which thus determines the existence of $A$, introduces an undescribed substance, $B$, then the existence of $A$ is dependent upon the fact that $B$ has an exclusive description. Now, if the exclusive description of $B$ which differentiates it from all other substances, including $A$, and which thus determines the existence of $B$, introduces an undescribed substance, $C$, then the existence of $B$, hence the existence of $A$, is dependent upon the fact that $C$ has an exclusive description. I think that it is quite clear that unless there is some term in the series which has an exclusive description which does not introduce an
undescribed substance - i.e., unless there is some term in the series which has a sufficient description - then no term in the series can have an exclusive description; hence no term can exist. Assuming that the series of terms is endless and non-recurrent, it is clear that the dissimilarity of every earlier term from every other substance is dependent upon the term which succeeds it - i.e. upon its immediate successor. And, since the series is, ex hypothesi, infinite, the existence of the initial term A is dependent upon there being a final term in a series which has no final term. The regress is therefore vicious. Every substance must, therefore, have an exclusive description which, ultimately, involves a relation to a substance which has a sufficient description. Hence, every substance must have a sufficient description.

NOTES

1. This, as we shall see, is a false dichotomy.
2. That is, insofar as we equate perception with experience.
6. It has been pointed out by a number of critics that Kant's concept of the a priori is not without ambiguity. I understand the a priori to be that which is the logical condition of experience, and knowledge of these conditions to be a priori knowledge. Cf., Theodore M. Greene, "The Historical Context And Significance Of Kant's Religion", in Immanuel Kant, Religion Within The Limits Of Reason Alone, p.1iv:

Neither here nor in the first Critique is the concept of the a priori wholly free from ambiguity. It is reasonable, however, to interpret the a priori to mean
that which is the logical (not necessarily the temporally antecedent) condition of experience, its universal and necessary basis, and a priori knowledge as the awareness of such conditions.


8. Spinoza, Ethics, Part 1, Proposition 12, Demonstration.

9. Cf., R.J. Delahunty, Spinoza, p.104:

The attributes themselves do not fall under any higher determinable as determinates; on the contrary, they are the most utterly general features of substance, to which all other properties of substance may be 'reduced'. They are, in effect, the highest genera, of which the 'modes' of thought and extension are species.

10. Spinoza, Ethics, Part 1, Proposition 11.


12. I have relied throughout upon Curley's translation of Spinoza. Elwes' translation of Proposition 7 reads thus: "Existence belongs to the nature of substance". This reading clearly suggests that existence is understood by Spinoza to be a property, albeit an essential property, of substance; whereas Curley's translation is somewhat ambiguous. It is arguable, according to Curley's translation, that existence is not understood to be a property of substance, but is identical with substance itself. This is, of course, the view of existence which we have advocated in Chapter 1. But if we do adopt this interpretation of Proposition 7, we are still faced with the objection that existence cannot be included in the content of a concept; and that we cannot, therefore, argue, as Spinoza seems to do, from the fact that we have a determinate concept to the conclusion that the concept is instantiated. Upon either reading Spinoza is open to Kant's general objection to the Ontological Argument. Our own view of existence supplements Kant's argument by explaining exactly why existence cannot be considered to be a property of an entity.

13. Spinoza, Ethics, Part 1, Proposition 8, Demonstration.


15. By "parts" I also mean "temporal parts".

16. Richard Dedekind, "Was sind und was sollen die Zahlen", in Essays On The Theory Of Numbers.


CHAPTER FOUR

Determination And Determinism

1. In the previous chapter we established two conclusions which will prove to be of fundamental importance in Cosmology. The first is that substance is infinitely divisible. The second is that every substance - hence every part of every substance - has a sufficient description. In the next chapter we will see that, except under one condition, the acceptance of these two propositions leads to a number of contradictions. But before we consider the reasons why these contradictions arise it is, I think, important for us to consider two relations which figure prominently both in McTaggart's attempt to resolve the contradictions and in his subsequent general Cosmological theory. The relations in question are the relations of Intrinsic and Extrinsic Determination. I will consider each of these relations in turn.

2. The relation of Intrinsic Determination is described by McTaggart in the following way.

108. Corresponding to implication between propositions, there is clearly a relation between characteristics. If it is true that, whenever something has the quality $X$, something has the quality $Y$, this involves that, besides the relation between the two propositions "something has the quality $X$", and "something has the quality $Y$", there is a relation between the
qualities $X$ and $Y$. I propose to call this relation Intrinsic Determination.... The quality $X$ will be said to determine intrinsically the quality $Y$ whenever the proposition that something has the quality $X$ implies the proposition that something has the quality $Y$.¹

Concerning this description two things should be noted. The first is that McTaggart is not, at this point, offering a definition of Intrinsic Determination². The second is that when McTaggart talks of a relation of implication between propositions he is not talking about Russell’s relation of material implication. As Broad points out³, McTaggart’s relation of implication is more or less equivalent to Russell’s relation of entailment, and is thus more in keeping with the traditional concept of implication implicit in both philosophical and non-philosophical discourse.

To illustrate the nature of the distinction between McTaggart’s concept of implication and that of material implication, we might appeal to Broad’s distinction between consistent and inconsistent propositions. Two propositions, $p$ and $q$, are mutually consistent if it is possible for the conjunction of the two propositions, i.e. the conjunctive proposition $pq$, to be true. The propositions are mutually inconsistent if it is impossible for the proposition $pq$ to be true. Now, if $p$ implies $q$, in McTaggart’s sense, then $p$ and $q$ are mutually consistent, and $p$ and not-$q$ are mutually inconsistent. On the other hand, if $p$ materially implies $q$ then $p$ and $q$ are mutually consistent: but so are $p$ and not-$q$.

Clearly, the validity of the distinction between the two senses of implication depends upon the assumption that there are mutually
inconsistent propositions. If there are no mutually inconsistent propositions, then there will be no valid distinction between the concept of material implication and McTaggart's concept of implication.

Now it is, I think, clear that there are mutually inconsistent propositions. The proposition "Something exists" is inconsistent with the proposition "Nothing exists" - i.e. the former implies the negation of the latter. And we have accepted the proposition "Something exists" as almost certainly true. We may, then, draw a valid distinction between the two senses of implication; and, as long as we accept the truth of the proposition that something exists, we may conclude that there is at least one instance of McTaggart's relation of implication.

3. Having accepted the fact that there are inconsistent propositions, hence that there is at least one instance of implication, the question of the grounds for these inconsistencies arises. In order to answer this question I shall begin by appealing to Broad's distinction between logically and ontologically inconsistent propositions. To illustrate this distinction let us consider two different sets of propositions. In the first set we have the following two propositions.

(1) Some trees are deciduous.
(2) No trees are deciduous.

In the second set we have the following propositions.
(3) The table in the corner of my room is square.

(4) The table in the corner of my room is circular.

In both sets of propositions we have two mutually inconsistent propositions. In the first set the mutual inconsistency is determined by the respective forms of the propositions. One proposition is of the form "Some S are P", and the other is of the form "No S are P". And we can see that the propositions are inconsistent because they have these forms. If two propositions are inconsistent in virtue of their respective forms, then we shall say that they are formally inconsistent.

In the second set, on the other hand, the mutual inconsistency is determined not by the forms of the propositions, rather by their content. In each case a quality is ascribed to one and the same subject - the table in the corner of my room. This, in itself, is not enough to generate an inconsistency. Were we to say that the table is wooden, and that the table is square, we would not have two inconsistent propositions; since it is possible that the table is both wooden and square. The inconsistency of the two propositions is determined, rather, by the fact that square and circular are considered to be incompatible qualities when ascribed to one and the same subject under the same conditions. This incompatibility is not, however, understood to be merely formal. It is, instead, considered to be a material or ontological incompatibility. If two propositions are mutually inconsistent in virtue of their content, then we may say that they are ontologically inconsistent.
4. Now, if two propositions, \( p \) and \( q \), are formally inconsistent, then we may say that \( p \) logically implies \( \neg q \). And if two propositions, \( r \) and \( s \), are ontologically inconsistent, then we may say that \( r \) ontologically implies \( \neg s \).

Once we accept the validity of the distinction between logical and ontological implication we might then ask what it is that determines that one proposition ontologically implies another. In the previous section we saw that ontological inconsistency among propositions is determined by the incompatibility of their respective contents; so that, where we have two incompatible qualities, we may conclude that any proposition which ascribes one of these qualities to a subject implies the negation of the proposition which ascribes the other quality to that subject. In such a case we have an ontological inconsistency between characteristics; and this inconsistency is not a merely formal inconsistency. If we now ask what determines this ontological inconsistency among characteristics, McTaggart's reply is that the occurrence of one characteristic intrinsically determines the absence of the other; or, alternatively, that the occurrence of one characteristic intrinsically determines the occurrence of the corresponding negative characteristic.

So, given that there are ontologically inconsistent propositions, we are, according to McTaggart, entitled to conclude that intrinsic determination exists between characteristics of existents.

5. At this point two questions arise. The first is whether there are any ontologically inconsistent propositions; hence, whether there are inconsistent or incompatible characteristics of the existent. The
second concerns the nature of the relation of intrinsic determination. I will consider each of these questions in turn.

6. We have previously concluded that there are inconsistent propositions. The propositions "Something exists" and "Nothing exists" are mutually inconsistent. And we can see that these propositions are inconsistent merely by inspection - the inconsistency is self-evident. But it is a formal rather than a material or ontological inconsistency; and the question we wish to answer at this stage is whether there are any ontologically inconsistent propositions.

It would seem that we have already provided an example of two ontologically inconsistent propositions. The propositions "The table in the corner of my room is square" and "The table in the corner of my room is circular", it was suggested above, are ontologically inconsistent. It was also suggested that the basis for this inconsistency is the fact that *square* and *circular* are incompatible qualities. Another example of ontological inconsistency would seem to be provided by the following two propositions.

(5) The surface of my table is red.
(6) The surface of my table is blue.

In fact, it is generally admitted that any two determinate qualities which fall under a single determinable, such as shape or colour, are incompatible. If we accept this principle, and I believe that we ought to accept it, then we are entitled to conclude that any propositions which ascribe different determinates of a single
A more direct way of establishing that there are ontologically inconsistent propositions is to admit the reality of negative qualities. The propositions "The table in the corner of my room is circular" and "The table in the corner of my room is not-circular" are inconsistent. And they are ontologically inconsistent insofar as the latter proposition is understood to involve the ascription of a negative quality, not-circular, to my table. If we accept the reality of negative characteristics, then we may readily conclude that there are ontologically inconsistent propositions, hence that there are incompatible characteristics of the existent. In favour of this conclusion we may argue that, for any characteristic, $X$, and any particular existent, $a$, either $X$ is true of $a$ or $not-X$ is true of $a$. That is to say, the propositions "$a$ is $X$" and "$a$ is not-$X$" are ontologically inconsistent; and yet one or the other must be true. We may conclude, then, that there are incompatible characteristics of the existent.

7. The conclusion that there are incompatible characteristics has, however, been questioned. I will now consider some of the reasons which have been given for believing that there are no incompatible characteristics.

8. The view that there are no incompatible characteristics might be understood in a number of ways. It might be understood to mean either: (a) there are no incompatible qualities; (b) there are no incompatible relations; or (c) there are no incompatible qualities or
relations. Since we have used the generic term "characteristic" to cover both qualities and relations we will understand the claim to mean that there are no incompatible qualities or relations.

Now, the claim that there are no incompatible qualities or relations might be understood in a number of ways. It might be understood to mean either (i) there are no qualities which are incompatible with other qualities; (ii) there are no relations which are incompatible with other relations; or (iii) there are no qualities which are incompatible with any relations. The view that there are no incompatible characteristics is generally understood to mean that there are no incompatible qualities. I will, however, consider each of these interpretations and argue that none of them is true.

9. Let us begin with the claim that there are no qualities which are incompatible with other qualities. In its most plausible version it is the claim that there are no incompatible simple qualities. It is this version which is generally attributed to Leibniz.

Simple qualities should be distinguished from compound and complex qualities. In accordance with our definitions in Chapter 1, we may say that a compound quality is analysable into other qualities (which qualities we may call the "parts" of that quality), and that a complex quality is analysable in terms of other characteristics (which characteristics we may call the "constituents" of that quality). A simple quality, on the other hand, is neither analysable into, nor analysable in terms of, other characteristics. That is to say, it has neither parts nor constituents.
In Chapter 1 we concluded that there are no sound reasons for believing that there are no simple qualities. Let us assume then, that some qualities are simple. Perhaps the most obvious examples of ostensibly simple qualities are the sensible colour qualities, such as red and blue. I think it is evident that such qualities are incompatible, in the sense that they cannot both be true of one and the same substantive in the same respect. And this view has, I believe, been held by most philosophers. To say that they are incompatible does not, however, imply that they are incompossible. Clearly, one and the same entity can be both red and blue — although not in the same respect.

I think that those who deny that such qualities are genuinely incompatible have failed to clearly distinguish the concepts of compatibility and compossibility. I do not believe that Leibniz, for example, would have denied that some simple qualities are incompatible. What he is committed to saying, however, is that all simple qualities are compossible in the sense that they may all be true of one and the same substance or substantive, namely God. The same, I would argue, is true of Spinoza’s attributes. The infinite attributes of God or substance are all compossible, although, like thought and extension, incompatible.

10. Although it might be agreed that some sensible qualities, such as red and blue, are incompatible, it has been argued that this incompatibility can be attributed to the fact that such qualities, although ostensibly simple, are actually complex or compound. The difference between their ostensible and their actual nature may be attributed to the distinction between the way things are, and the way
things seem to be - the distinction between reality and appearance. This type of argument has recently been used by D.M. Armstrong to support the conclusion that there is no genuine incompatibility among the sensible qualities - such as colours. In brief, Armstrong claims that the incompatibilities in question arise from the fact that such qualities are actually, although not ostensibly, extensive quantities. And incompatibilities among extensive quantities, he argues, arise from the attempt to identify a whole with a proper part of that whole.

My suggestion is that this is a model for the logical incompatibilities of properties, or at least for their typical cases. Ranges of determinates falling under a determinable are extensive quantities. These are structural properties, involving parts lying outside parts, that is, involving conjunctions of states of affairs where the individuals involved in the states of affairs are wholly distinct from each other. The attempt to bestow two different determinates of such quantities on the one individual must fail. If the individual has the larger value of the quantity, then the only relevant individuals that have the smaller value are proper parts of the individual.'

This type of approach is used to explain why one and the same entity cannot be said to have a mass of just five kilograms and a mass of just one kilogram.
For something to be just five kilograms in mass is (among other things) for it to be the conjunction of five states of affairs involving five wholly distinct individuals each just one kilogram in mass, where the original something is the mereological sum of these five distinct individuals. Given this it becomes clear why the very same thing cannot be both five and one kilogram in mass. To attempt to combine the two properties in the one thing would involve the thing's being identical with its proper part.

11. I think it is clear that there are a number of problems with this view. Some of these are considered by Armstrong in his subsequent discussion. One of the problems which is discussed is the question of the status of the mereological principle invoked in the proposed solution. The principle in question is that no entity can be identical with a proper part of that entity. Armstrong claims that this principle is analytically true. And if it is analytically true, then, according to Armstrong, it is true in virtue of the meanings which we attach to the terms "whole" and "proper part".

This reply is unsatisfactory for two reasons. The first is that by labelling a truth as "analytic" we do not mean that it is therefore less true than what we might call a "synthetic" truth. The important question here is whether such truths are true by convention or stipulation, or whether they are true because they correspond to some objective feature of the world. I think it is quite clear that Armstrong would not want to deny that such a principle corresponds to some objective feature of the world, and that it is this correspondence which makes it true. It is true that we come to know
that the principle is true by analysing the meanings of the terms involved. But this is not what makes the principle true. To assert otherwise is to confuse the method of ascertaining that a principle is true, with the conditions or fact which make it true. What is disturbing, for Armstrong, about such a principle is that it is, or at least professes to be, a necessary truth about the world. And yet its truth is not ascertained by any empirical means. It is, in this sense, an *a priori* truth about the world. The acknowledgment of the existence of such truths is obviously at odds with Armstrong’s professed philosophical method, and yet the truth of the principle in question is presupposed in almost everything he has to say on certain metaphysical subjects.

The second reason why Armstrong’s reply is unsatisfactory is that the mereological principle in question involves genuinely incompatible relations. The principle states that no entity can be identical with a proper part of that entity. Ostensibly, this involves a relation between an entity and a proper part of that entity. It states that if \( Y \) is a proper part of \( X \), then \( Y \) is not identical with \( X \). And this means that the relations *being a proper part of* and *being identical with* are incompatible. This might not be a problem for someone who accepts the reality of incompatible relations. But in Section III of Chapter 6 of *A Combinatorial Theory Of Possibility* Armstrong claims that all “wholly distinct” relations are compossible. It is quite clear, however, that the relations in question are both wholly distinct and incompossible.

12. A second problem with this view is that it ultimately involves the rejection of the distinction between intensive and extensive
magnitudes or quantities. The suggestion seems to be that those sensible qualities, such as determinate colours, which appear to be incompatible in virtue of their ostensibly non-quantitative nature, are, in fact, incompatible because they are actually extensive magnitudes or quantities. It is also claimed that such qualities do not actually have any irreducibly intensive magnitudes. Any incompatibilities are based upon the mereological principle that no whole is identical with a proper part of that whole.

Although Armstrong does not give explicit definitions of the concepts of Extensive and Intensive Quantity, I think we may assume that what he means by an extensive quantity is more or less equivalent to the traditional concept of an Extensive Magnitude. According to the traditional view an entity has extensive magnitude if it is made up of parts which are homogeneous in kind. McTaggart's definition of an extensive magnitude as a magnitude in which the difference between two magnitudes is another magnitude of the same kind, is in keeping with the traditional concept. We might illustrate the concept of extensive magnitude by considering the line, AB, below [Figure 4.1].
AB has extensive magnitude, namely length, insofar as it is made up of the parts AD, DC, CE and EB, which themselves have length, and the difference between, say, the length of AB and AD is another length, the length of DB - i.e. another extensive magnitude.

It is, however, somewhat more difficult to understand what Armstrong means by an intensive quantity. Traditionally, an intensive magnitude is defined in a negative way - as a magnitude which is not made up of other magnitudes of the same kind. McTaggart accordingly defines an intensive magnitude as a magnitude in which the difference between any two measures is not another measure of that kind. An example of an intensive magnitude is the degree of brightness of colours. Thus, one colour might be brighter than another; or, alternatively, a particular colour might have brightness to a greater or lesser degree.

If we accept that this is what is traditionally meant by the distinction between intensive and extensive magnitudes, then I would maintain that Armstrong has not really provided us with a plausible analysis of the incompatibility of some of the sensible qualities - such as determinate colours. In order to demonstrate that the incompatibility of these sensible qualities is based upon the mereological principle that no proper part of a whole can be identical with that whole, Armstrong would need to show, firstly, that all intensive magnitudes are reducible to extensive magnitudes; and, secondly, that such qualities are, themselves, either intensive or extensive magnitudes. And it seems to me that Armstrong has failed to provide sound arguments to support either of these conclusions.
13. Let us begin with the claim that all intensive magnitudes are reducible to extensive magnitudes. As I mentioned above, I do not think Armstrong has clearly stated what he means by an intensive quantity. The definitive feature of a magnitude is that if an entity has magnitude, then there might be more or less of that entity. In the case of extensive magnitude, we may speak of there being more or less of that entity insofar as the mereological principle that a whole is more than or greater than a proper part of that whole is applicable to that entity. Perhaps the most obvious examples where this mereological principle is valid are certain spatial or temporal wholes. In such cases the mutual externality of the parts - hence the extensive nature of the whole - is evident. But the principle does not apply only to spatially or temporally extended entities; and we may speak of "wholes" and "parts" whenever we have a unity comprising a plurality of co-existent entities of the same ontological kind or category.

In the case of an intensive magnitude, on the other hand, whilst we may speak of there being more or less of any entity which has intensive magnitude, this is not because the mereological principle that a whole is greater than a proper part of that whole is applicable to that entity. Rather, the opposite is the case; and we may say that an entity has intensive magnitude insofar as the mereological principle is not applicable to that entity. Accordingly, we may summarise the distinction between extensive and intensive magnitudes by saying that extensive magnitudes are divisible, and that intensive magnitudes are indivisible.

Now, if we accept that the distinction between extensive and intensive magnitudes consists in the distinction between divisible
and indivisible magnitudes or quantities, then it is clear that intensive magnitudes are not reducible to extensive magnitudes. Any such reduction would imply that the definitive characteristics of these magnitudes are compatible or composable. But divisibility and indivisibility are clearly contradictory, hence incompatible, characteristics; and since indivisibility is understood to be a definitive characteristic of intensive magnitudes, such magnitudes are not, therefore, reducible to extensive magnitudes.

14. Having thus clarified the basis for the distinction between intensive and extensive magnitudes, we are now in a better position to see what is wrong with Armstrong’s proposal for dealing with irreducibly intensive quantities. The suggestion is this.

It may be, however, that whatever quantities natural science sees fit to postulate, there is never any need to treat them as anything but superficially intensive. The problem with an irreducibly intensive quantity is that there would be no way of representing the ‘parts’ of a particular degree of that quantity as numerically different things, as one can where extension and duration are involved in the nature of the quantity. The underlying assumption here is that if \( a \) and \( b \) are numerically different, then they must be in different places, or, perhaps better, different place-times. Now difference of place-time seems to be sufficient (for individuals) to ensure non-identity. But the idea that sameness of place-time ensures identity of individuals is a more controversial notion, and one that has been quite frequently challenged in recent
discussions. So why should we not say that if science sees fit to postulate apparently irreducible intensive quantities, then what is really being postulated is the simultaneous presence of many individuals at the same place? An individual at a certain place has a certain determinate of determinable quantity $Q$. No individual at that place and at that time has any greater value of $Q$. But to have this quantity is, essentially, to be made up of numerically different parts, but where the numerically different parts are individuals all to be found at that place and time.\textsuperscript{11}

Now the problem with an \textit{irreducibly} intensive quantity is not, as Armstrong suggests, that there would be no way of representing the parts of a particular measure of that magnitude as numerically different things; it is, rather, that if there \textit{are} any irreducibly intensive quantities or magnitudes, then they cannot have any parts, since they are, by definition, indivisible. Armstrong's proposal for dealing with such magnitudes seems plausible, I suggest, only because he never clearly states what the distinction between intensive and extensive magnitudes essentially consists in. Once the actual basis for this distinction is clarified, it becomes obvious why Armstrong's proposal is unacceptable. An extensive magnitude does not differ from an intensive magnitude insofar as the parts which make up any determinate measure of that magnitude do or do not have the same spatio-temporal location. They differ insofar as the one is, and the other is not, a genuine whole made up of distinct parts. Whether or not the parts are spatio-temporally distinct from one another is, quite simply, irrelevant to the validity of the distinction.
15. I have argued that intensive magnitudes are not reducible to extensive magnitudes. I will now consider whether there are any cogent reasons for concluding that incompatible sensible qualities — such as determinate colours, sounds, etc. — are either intensive or extensive magnitudes.

I think it is quite clear that some sensible qualities are incompatible because they have different measures or degrees of some magnitude. Two pleasures, for example, insofar as they are comparable, might resemble each other exactly except that one has a greater intensity than the other. Similarly, one shade of blue might resemble another exactly except that it is brighter than the other. In both cases the two qualities being compared are incompatible in virtue of the fact that one has more or less of some given magnitude than the other — in the case of the two pleasures it is the magnitude of intensity, and in the case of the two instances of blue it is the magnitude of brightness. Now, I think it is generally assumed that the magnitudes involved here are intensive rather than extensive; and I believe that this assumption is correct. But even if it could be shown that the magnitudes in question are actually extensive, hence that the incompatibility of the qualities is attributable to the mereological principle that a whole is greater than a proper part of that whole, this does not imply that the qualities themselves are either intensive or extensive magnitudes. Nor does it imply that the incompatibility of all sensible qualities is capable of being explained in this way. Pain and pleasure, for example, are incompatible. And so are red and green. But these qualities are not incompatible because one is more or less of something than the other. We might say that one instance of red is
brighter than another, or even that red is brighter than green; and that they are incompatible in virtue of the fact that they have different degrees or measures of some intensive magnitude - namely brightness. Similarly, we might wish to say that one instance of pain is more intense than some instance of pleasure, and that they are incompatible in respect of their different intensities. But it is one thing to say that colours, pleasures, and pains have intensive magnitudes. It is another thing to say that they are intensive magnitudes; and there is nothing in the manifest nature of these qualities to suggest that they are intensive, or indeed, extensive magnitudes. If they are incompatible, it is because they are simply incompatible, and not because one is more or less of something than another.

16. At this point I think we need to draw a distinction between characteristics which are simply incompatible, and qualities which are incompatible in virtue of some characteristic or magnitude which they possess. The former I shall call directly, and the latter indirectly incompatible characteristics. Now, for Armstrong's analysis to be plausible, he would need to show (a) that there are no irreducibly intensive magnitudes; and (b) that no qualities are directly incompatible. And I do not believe that he has provided us with any sound reasons for believing that either of these propositions is true.

In the first place he has not shown that there cannot be any irreducibly intensive magnitudes. The only argument which he puts forward against the reality of such magnitudes is that if science should need to posit the reality of intensive magnitudes, then they
could be reduced to extensive magnitudes. But we have seen that if there are any intensive magnitudes, then they cannot be reduced to extensive magnitudes; they are irreducibly intensive. Any incompatibility between measures of intensive magnitude must, therefore, be a direct incompatibility. And if we accept Armstrong's view that all such measures or quantities are properties or qualities, then we must conclude that the existence of incompatible measures of intensive magnitude implies the existence of qualities which are directly incompatible.

17. In the second place, he has not shown that there are no qualities which are directly incompatible. Perhaps the most obvious examples of qualities which are, or appear to be, directly incompatible are pleasure and pain, and determinate colours such as red and blue. Armstrong's suggestion for dealing with such examples is as follows.

The correct way to deal with them, I believe, is to say that they are structured properties like volume, duration and mass, but that their structure does not present itself to perception in the relatively perspicuous way that is the case with these primary qualities.

Against the obvious objection that such qualities are not perceived as having structure, Armstrong offers the following reply.

Suppose the identifications of secondary qualities with primary quality structures are correct. We are certainly not
perceptually aware that these qualities are identical with primary qualities. Phenomenologically, this lack of awareness translates into 'awareness' of a lack. The same point holds in the case of lack of awareness of the complexity (a positive factor) of the primary-quality structures. This translates again into 'awareness' of a lack of complexity."

The plausibility of such a response depends upon whether or not it makes sense to say that the sensible qualities in question might be identical with the primary qualities of some entity; and I think that we must conclude that this is not possible. In order for such an identification to be possible we would need to show that there is nothing in the perceived nature of the sensible qualities which is inconsistent with their actually being primary qualities. Unfortunately for Armstrong, there are such qualities. As I remarked previously, the sensible qualities in question are invariably perceived as having certain intensive magnitudes, and as having these magnitudes essentially. And we have seen that such magnitudes are not reducible to extensive magnitudes or quantities. Now, the essential distinction between primary and secondary qualities must, for Armstrong, consist in the fact that the primary qualities have extensive magnitudes only. Were they to have any irreducibly intensive magnitudes then his analysis of the incompatibility of qualities in general would have to be rejected. But if the primary qualities cannot have any irreducibly intensive magnitude, then the sensible qualities, which are cognised as having such magnitudes essentially, cannot be identical with them.
It is, I think, clear why Armstrong's claim that a "lack of awareness" translates into "an awareness of a lack" will not work here. It is not that we do not perceive the sensible qualities as having some of the characteristics which they do have; it is, rather, that we perceive them as having characteristics which they cannot have if, as is maintained, they are identical with certain primary qualities. Every pain, for example, is perceived as having a measure or degree of intensity, and this intensity is an irreducibly intensive magnitude. Furthermore, it is impossible for a pain not to be perceived as having some measure of intensity - i.e. as not having an intensive magnitude. The same principle is true of colours, and other sensible qualities. No colour can be perceived except as having a certain measure of brightness. No sound can be perceived except as having a certain measure of loudness. And so on. Now, if the sensible qualities in question cannot be identical with certain primary qualities, then their incompatibility cannot be explained in the manner proposed by Armstrong. The possibility that they are directly incompatible remains.

It might be pointed out that this reply to Armstrong does not, as such, establish that the sensible qualities themselves, as distinct from the intensive magnitudes which they possess, are directly incompatible. At best it establishes only that they are indirectly incompatible. But they are indirectly incompatible because the measures of intensive magnitude which they possess are directly incompatible. And this is sufficient to undermine Armstrong's thesis, since such measures are themselves, according to his theory of quantities, sensible qualities.
The direct incompatibility of the sensible qualities in question must, I think, be considered to be self-evident. The claim that such qualities, as distinct from the entities which they qualify, might be other than they appear to be is, I maintain, unintelligible. Once we accept this fact that they are transparent to consciousness, the incompatibility of some of these qualities, such as pleasure and pain, is evident.

18. Having argued that the claim that there are no incompatible qualities is false, we may now consider the claim that there are no incompatible relations. This view is, I think, even less plausible than the view that there are no incompatible qualities. But it is a view which has recently been endorsed, once again by Armstrong. I will now consider the arguments offered in its defence.

We might begin by pointing out that, in the case of relations, Armstrong's appeal to the mereological principle that a whole is greater than a proper part of that whole, as a general model for the understanding of the incompatibility of measures of extensive magnitudes, is not acceptable here. Even if we are willing to accept the possibility that some incompatible qualities are measures of extensive magnitudes, and their incompatibility explicable in accordance with this principle, it is impossible for Armstrong to account for the incompatibility of relations in this way. In the first place, as I remarked earlier, relations, unlike qualities or substances, are not generally divisible. If they are magnitudes, they must, therefore, be irreducibly intensive magnitudes - in which case the mereological principle is not applicable. Secondly, if, as Armstrong elsewhere maintains, all quantities are qualities or
properties, then no relations can be extensive magnitudes; hence their incompatibility is not susceptible to analysis in terms of the incompatibility of measures of extensive magnitude.

It seems to me that there are two quite conclusive reasons for believing that there are incompatible relations. The first is that the incompatibility of some relations, such as *identity* and *difference*, is presupposed in the formulation of any sound logical or metaphysical principle. If $A$ is identical with $B$, then it is impossible for $A$ to be different from $B'$. The second is the generally accepted logical and metaphysical principle that if $r$ is an asymmetrical relation, then $r$ is incompatible with the converse of $r$ - i.e., $r'$. If John is taller than Paul, then John cannot be shorter than Paul. Again, the truth of this principle is, I think, presupposed in some of the most fundamental instances of valid logical and metaphysical reasoning. How, then, does Armstrong deal with these arguments?

19. Armstrong does not give any direct reply to the first of these arguments. He does accept the premiss that *identity* is a relation; and if he accepts this premiss, then he ought to accept the premiss that *difference* is a relation. But *identity* is claimed to be an internal relation, and an internal relation, according to Armstrong, is a *supervenient* entity. Now, if something is a supervenient entity, then, according to Armstrong, it is not "wholly distinct" from the entity upon which it supervenes. If we put this in more concrete terms, Armstrong's contention is that if $A$ is identical with itself, then $A$ and the relation of identity are not wholly distinct entities - the relation is supervenient upon $A$. 
Although we have tried to express what Armstrong’s views on the status of the relations of identity and difference are, I don’t see that this sheds any light upon the way in which he would reply to our initial argument. In the first place, the notion of something being “wholly distinct” from something else is not explained. If it means that the two entities are what he refers to elsewhere as being “Hume distinct”, then it means that the entities are logically independent. On the other hand, if two entities are not wholly distinct, then it would seem to follow that they cannot be logically independent. But where does this get us? No-one would deny that if \( A \) is identical with itself, then \( A \) and the relation of identity are not logically independent. The important question is whether they are different entities, and I don’t see how it is possible to consistently deny that they are. But if they are different, why should we not accept (i) that there is a relation of identity; and (ii) that this relation is incompatible with the relation of difference? The fact that identity is an internal relation (i.e. a supervenient entity) is, quite simply, irrelevant to the question whether identity and difference are incompatible. So far as I can see, Armstrong’s response does not assist us in attempting to answer this question.

20. His response to the second argument is, I suggest, equally unsatisfactory. The suggestion is this.

We now turn to asymmetry. If \( a \) is before \( b \), then it is entailed that \( b \) is after \( a \), and apparently excluded that \( b \) is before \( a \). With respect to the first entailment, once again it
seems correct to say that we have the one state of affairs described in two different ways. The inseparability of the 'two' states of affairs seems good evidence for this: Compare $a$ causes $b$ if and only if $b$ is caused by $a$. Fairly obviously, this is just one state of affairs. The fact that if $a$ is before $b$ we do not say 'b is before $a'$ instead of 'b is after $a'$ would appear to be a relative linguistic accident.'" 

It is not clear whether Armstrong wishes to maintain that *all* ostensibly asymmetrical relations can be dealt with in this manner. On the one hand he insists that only those which are "external" to their terms are susceptible to this kind of analysis. On the other hand, in the footnote on page 85, he seems to implicitly endorse the view that all ostensibly asymmetrical relations can be treated in this way. In either case, I would maintain, the position is unacceptable.

In the first place, I think we need to be clear about some of the implications of such a view. Let us begin with the extreme view, that *all* ostensibly asymmetrical relations can be treated in this way. Now, what this view amounts to is the claim that there are no asymmetrical relations - since an asymmetrical relation is, according to the traditional definition ", a relation which is incompatible with its converse. A symmetrical relation, on the other hand, is defined as being a relation which is identical with its converse. In other words, this extreme view amounts to the claim that all relations are symmetrical. One consequence of such a view is that there can be no order among existents, since, as Russell has argued", the presence of transitive asymmetrical relations is
essential to the genesis of order among any terms. And, since the concept of order is, according to Russell, essential to the development of mathematics and geometry, the claim that there are no asymmetrical relations would amount to the claim that there can be no mathematics or geometry as such.

The consequences of such a view go much further than this, however. Not only must we reject what has come to be accepted as the traditional basis of mathematics and geometry, we must also reject some of the most fundamental principles of logic. Arguably the most fundamental relation in any logical theory is that of implication. Now, if we claim that all relations are symmetrical, then it follows that every proposition which implies another proposition is, in turn, implied by that other proposition. In other words, acceptance of the principle that all relations are symmetrical involves the rejection of the assumption that there is any fallacy involved in the principle of the Consequent - i.e., affirming the consequent. The implications of such a view for any traditionally accepted logical theory are obviously disastrous. For these reasons the extreme view is, I think, untenable.

Let us consider, then, the views which Armstrong does explicitly endorse. The first claim which he makes is that ostensibly asymmetrical relations which are "external" to their terms are, in fact, symmetrical. What the distinction between "internal" and "external" relations consists in is not entirely clear, but I think we can safely assume that an "external" relation, for Armstrong, is one which is logically independent of its terms. An "internal" relation, by contrast, is a relation which is not logically independent of its terms. In order to avoid any difficulties about
which relations are, and which relations are not, internal, we will consider the case of a relation which Armstrong himself considers to be external. The example we are asked to consider is a relationship of temporal precedence. If $a$ is before $b$, then, it is generally inferred, $b$ is after $a$. The basis for this inference is generally understood to be the fact that there are two different relations involved, and that the existence of one relation implies the existence of its converse. The two relations are also understood to be incompatible, so that they may not share the same referent and relatum. Now, Armstrong claims that what we have in this case is not two mutually implicative facts or states of affairs, but one fact described in two different ways.

There are, I think, a number of reasons why this proposal is unacceptable. Firstly, it is generally accepted that the relation between a relation and its converse is the relation of implication; so that $aRb$ implies $bRa$. Armstrong's claim that the "inseparability" of the two states of affairs is good evidence for their being two different descriptions of one and the same state of affairs is simply not justified. We might just as well claim that their inseparability consists in the fact that they are two distinct, but mutually implicative facts or states of affairs.

Secondly, there is a definite order involved in the two facts; and this order is given by the fact that the before and after relations have different senses. Without this difference of sense, there could be no order among the terms. And this is what is wrong with Armstrong's proposed analysis - it fails to preserve the intrinsic sense or order in the initial relationships. Insofar as the proposition "$b$ is befored by $a$" does preserve the sense of the
relation *after*, the relation *befored by* cannot be identical with the relation *before*. To be *befored by* something is not the same as being *before* something. It *is* equivalent to being *after* something. But then this is just the point at issue - namely, that *after* and *before* have different intrinsic senses, and that it is this difference of sense which determines their incompatibility.

Thirdly, insofar as Armstrong does not deny the reality of asymmetrical relations altogether, we are still faced with the fact that all such relations are incompatible with their converse relations - whether they are "internal" or "external" does not alter this fact. If *a* is taller than *b* then *a* cannot be shorter than *b* - i.e., the relation *taller than* is incompatible with its converse relation, *shorter than*. Nor does the assumption that internal relations are not "wholly distinct" from their terms. Unless "not wholly distinct from" means "identical with", the relations still exist and retain their incompatibility.

It might be pointed out that, according to Armstrong, internal relations are not wholly distinct from their terms in the sense that they are supervenient upon those terms. But Armstrong's concept of supervenience does not, I suggest, imply that supervenient entities are not different from the entities upon which they supervene. Supervenience is defined by Armstrong in the following way.

... If there exist possible worlds which contain an entity or entities *R*, and if in each such world there exists an entity or entities *S*, then and only then *S* supervenes on *R*.31
To the obvious question whether this implies that such supervenient entities are not really entities, Armstrong’s answer is rather vague. On the one hand, he does not deny outright that these entities exist. On the other hand, he suggests that ostensibly supervenient relations might actually be non-relational structural properties of their terms. For example, if $a$ is taller than $b$, then what is ostensibly an asymmetrical relation, *taller than*, relating $a$ and $b$, is actually, according to Armstrong, a non-relational structural property predicable of both $a$ and $b$.

Again there are a number of difficulties with this latter view. Firstly, it is not clear whether Armstrong intends to apply this type of analysis to *all* “internal” relations, or whether it is intended to apply only to the example mentioned. If it does not apply to all “internal” relations, then we are still faced with our initial difficulty about accounting for the incompatibility of asymmetrical relations. Secondly, and most importantly, by removing the relation as such, and suggesting that it is, in fact, a property of the terms, we thereby remove the intrinsic sense or direction implicit in the original “relational” fact. Without this sense there is no order among the terms. Armstrong’s only example, the relation *having the same shape as*, appears susceptible to this type of analysis only because it is a symmetrical relation, which does not have an intrinsic sense. If, on the other hand, we attempt to analyse asymmetrical relations in this way, we lose the sense, hence the order which is conveyed by the original relationship. For this reason, the proposed analysis must be rejected.
21. We may conclude, then, that Armstrong has not really given us a plausible means of avoiding a commitment to the existence of incompatible relations. We are still faced with the fact that some relations, specifically asymmetrical relations and their converse relations, are incompatible. Whether or not they are "internal" or supervenient does not, as we have seen, materially affect this conclusion.

22. I have argued that there are qualities which are incompatible with other qualities, and that there are relations which are incompatible with other relations. Let us now consider the question whether there are any qualities which are incompatible with certain relations.

I should begin by pointing out that we are not attempting to answer the question whether qualities are compatible with relations per se. That more general question was answered in Chapter 2, where we considered Bradley's contention that the categories of Quality and Relation are incompatible. Our question here pertains to specific instances of the categories - that is, to specific qualities and relations.

Next, I think we need to clearly state what we mean by the claim that some qualities and relations are incompatible. I should say that a quality, Q, is incompatible with a relation, r, if it is impossible for Q to be a term, i.e. a referent or relatum, of that relation. Having stated what we mean by the proposition that some qualities and relations are incompatible, it is, I think, clear that this proposition is true. It is impossible, for example, for the colour blue to be taller than Mt. Kosciusko. It is also impossible for some
particular intensity of sound to be heavier than my desk. In each of these cases we have examples of "external" relations which are incompatible with one or more of their terms. Furthermore, such relations, insofar as they are "external" to their terms, are, in Armstrong's sense, "wholly distinct" from these terms. And yet the terms and the relations are not compossible. The implications of the existence of such ontological incompatibilities for a combinatorial theory of possibility, such as that endorsed by Armstrong, are disturbing, to say the least. The possibility of such incompatibilities is not, however, mentioned in his discussion of *de re* incompatibilities and necessities in Chapter 6 of *A Combinatorial Theory Of Possibility*. The omission of such a discussion does, I think, seriously affect the cogency of Armstrong's overall argument for that theory.

23. I have argued that there are ontological incompatibilities among qualities, among relations, and among particular qualities and relations. I shall now argue that the existence of these incompatibilities provides us with the basis for understanding the nature of the laws of existence, and for the kind of universal determinism propounded by McTaggart.

24. In Section 6 of this chapter we posed two questions. The first was whether there are any incompatible characteristics of the existent. The second concerned the nature of the relation of intrinsic determination. Our affirmative answer to the first question will, I believe, provide us with an answer to the second. And it is
the second question which, in turn, provides us with an insight into the nature of the laws of existence.

In Section 5 I suggested that the incompatibilities which, we concluded, exist among some characteristics of the existent, entitle us to affirm that there are instances of intrinsic determination. I also pointed out that, according to McTaggart, these incompatibilities could be explained by the fact that certain characteristics of the existent intrinsically determine the absence of certain other characteristics; or, alternatively, that certain characteristics of the existent intrinsically determine certain negative characteristics of the existent. The relation of intrinsic determination itself, however, remained undefined. This might be because McTaggart considered it to be, like the relation of implication, indefinable. On the other hand, when discussing the incompatibility of certain relations, I mentioned the fact that the relation between a particular relation, $R$, and its converse, $\tilde{R}$, is traditionally considered to be a relation of implication - i.e., the occurrence of a relation, $R$, between two terms, $a$ and $b$, implies the occurrence of the converse relation, $\tilde{R}$, between $b$ and $a$. And it is this fact which, I suggest, provides us with a definition of intrinsic determination. Intrinsic determination, I suggest, is to be defined as a relation of existent implication.\[32\]

25. This definition allows us to answer a number of criticisms raised by Broad in his discussion of McTaggart's concept of intrinsic determination. The first of these criticisms is to be found on page 197 of the Examination.
When McTaggart begins to give examples he uses phrases which seem inconsistent with his definitions. Thus, at the bottom of p. 111, he says that "the occurrence of blueness intrinsically determines the occurrence of spatiality". (My italics.) And, at the top of p. 112, he says that the quality of one person to be a husband intrinsically determines the occurrence in someone else of the quality of being a wife. (My italics, again.) Here we have a mass of verbal inconsistencies. "Intrinsic determination" was defined at the beginning of §108 as a relation between characteristics. Yet in the very same section it is said, in the first example, to relate two occurrences, and, in the second example, to relate a quality and an occurrence of a quality. Now, for McTaggart, a quality is a characteristic and not a fact, whilst an occurrence of a quality is either a fact or an event, and is certainly not a characteristic.33

In reply to this criticism we may make a number of points. Firstly, as I have already pointed out34, McTaggart does not offer a definition of intrinsic determination in Section 108 of The Nature Of Existence. If we accept that McTaggart's statements about intrinsic determination in that section do not constitute a definition, and if we accept the definition of intrinsic determination as a relation of existent implication, then the inconsistencies which Broad cites can be shown to be merely verbal.

In the first place, we may insist that even though intrinsic determination is a relation between characteristics, it is not
necessarily a relation between characteristics only. It may relate facts, for example.

Secondly, by defining intrinsic determination as a relation of existent implication we may claim that it relates existent characteristics. Now, existent characteristics are not facts—although they are necessarily constituents of facts. An existent quality might therefore be considered to be a constituent of an occurrence of that quality. But it does not follow that the quality itself is an occurrence. It is a constituent of the occurrence; and the occurrence itself may be considered to be either a fact or an event. Insofar as two or more constituent characteristics of these facts or events are related by intrinsic determination, and insofar as these characteristics are constituents of different facts or events, then we may say that one fact or event intrinsically determines another fact or event. In other words, intrinsic determination relates characteristics insofar as these characteristics are themselves existent—i.e., insofar as they are constituents of facts or events. In this sense we may say that intrinsic determination directly relates characteristics, and that it indirectly relates occurrences of these characteristics—i.e., facts or events.

26. Our definition of intrinsic determination also allows us to dispense with the need to appeal to Broad’s relation of conveyance in order to resolve the apparent inconsistencies in McTaggart’s views. Broad argues that McTaggart failed to distinguish intrinsic determination from the relation of conveyance, and that the failure to recognise this distinction is the source of the inconsistencies in
his statements about intrinsic determination. Broad defines conveyance in the following way.

I define the statement that $\emptyset \ "\text{conveys}" \downarrow$ to mean that, if anything has $\emptyset$, it necessarily follows that \textit{that same thing} has $\downarrow$; i.e., conveyance is the relation which $\emptyset$ has to $\downarrow$ if and only if $\emptyset x \rightarrow \downarrow x$. Thus, for example, the characteristic of having shape conveys the characteristic of being extended.\textsuperscript{35}

Having thus defined conveyance, he then argues that this is, in a sense, a more fundamental relation than intrinsic determination.

Now it follows logically from $\emptyset x \rightarrow \downarrow x$ that

$$(\exists x).\emptyset x: \rightarrow: (\exists x).\downarrow x.$$ 

If, for example, nothing could have shape without being extended, then it is impossible that something should have shape whilst nothing had extension. Thus the proposition that $\emptyset$ conveys $\downarrow$ entails the proposition that $\emptyset$ intrinsically determines $\downarrow$. But this entailment is not reversible. It is logically possible that $\emptyset$ should intrinsically determine $\downarrow$, although $\emptyset$ did not convey $\downarrow$. Thus the assertion of conveyance is a stronger and more definite assertion than that of intrinsic determination between the same characteristics. Now every instance of intrinsic determination which McTaggart gives is one in which conveyance also holds, and in which our knowledge that there is intrinsic determination is inferred from our knowledge that there is conveyance. It is not at all easy to think of any instance of intrinsic determination which
is not inferred from conveyance. This being so, McTaggart sometimes tended to ascribe to intrinsic determination properties which belong only to conveyance.\footnote{213}

There are two basic criticisms contained in this passage. The first consists in the claim that conveyance is a "stronger" and "more definite" relation than intrinsic determination. The second consists in the claim that our knowledge of intrinsic determination is generally, if not universally, inferred from our knowledge of conveyance.

27. Let us begin with the claim that conveyance is a stronger and more definite relation than intrinsic determination. Unfortunately, the significance of the adjective "strong" in this context is not entirely clear. The suggestion seems to be that, since the proposition "$\varnothing$ conveys $\heartsuit$" entails the proposition "$\varnothing$ intrinsically determines $\heartsuit$", whilst the proposition "$\varnothing$ intrinsically determines $\heartsuit$" does not entail the proposition "$\varnothing$ conveys $\heartsuit$", conveyance is therefore a \textit{stronger} relation than intrinsic determination. I think that this criticism might have some point if we were to assume that conveyance and intrinsic determination are wholly distinct relations\footnote{213}. But this assumption is not justified. The relation of conveyance is, I suggest, actually a compound relation, analysable into a relation of intrinsic determination and a relation of \textit{extrinsic} determination. The quality $\varnothing$ conveys the quality $\heartsuit$ if:

(1) $\varnothing$ intrinsically determines $\heartsuit$;

(2) $\varnothing$ extrinsically determines $\heartsuit$. 
Extrinsic determination is a relation between two or more qualities in virtue of the fact that they are true of one and the same substantive. It is such that if one quality extrinsically determines another then neither can be true of a particular substantive unless the other is true of that substantive. It differs from conveyance insofar as it is a symmetrical relation, and it differs from intrinsic determination insofar as it relates qualities of a single substantive.

I shall discuss the principle of Extrinsic Determination in more detail later in this chapter. It is mentioned at this point only to show that Broad's contention that conveyance is a stronger and more definite relation than intrinsic determination need not amount to anything more than the fact that conveyance is a compound or complex relation of which intrinsic determination is a part or constituent.

28. Let us now consider the claim that our knowledge of intrinsic determination is inferred from our knowledge of conveyance. At this point I think we need to draw a distinction between epistemic and ontological priority. If, as a matter of fact, our knowledge of some entity is inferred from our knowledge of some other entity, then we may say that our knowledge of the former is epistemically prior to our knowledge of the latter. If, on the other hand, some entity implies, without being implied by, some other entity, then we may say that the former is ontologically prior to the latter. Now, I think that it is clear that epistemic priority does not entail ontological priority. At best, then, Broad's argument would establish only that our knowledge of conveyance is epistemically prior to our knowledge of intrinsic determination. It does not show that conveyance is
ontologically prior to intrinsic determination; and it is this latter claim alone which is of any real significance in this context.

In any case, it is doubtful whether Broad has shown that our knowledge of conveyance is epistemically prior to our knowledge of intrinsic determination. If we accept the analysis of conveyance given in the previous section, then there is no real justification for Broad's contention that our knowledge of conveyance is inferred from our knowledge of intrinsic determination - since every instance of knowledge of conveyance is *ipso facto* an instance of knowledge of intrinsic determination. What is, perhaps, justifiable is the claim that our knowledge of intrinsic determination is not made explicit until the correct analysis of conveyance is provided. But this does not mean that our knowledge of intrinsic determination is inferred from our knowledge of conveyance.

The only other reason we are given for believing that our knowledge of conveyance is epistemically prior to our knowledge of intrinsic determination is the contention that, in the two examples mentioned by McTaggart, our knowledge of intrinsic determination is, in fact, inferred from our knowledge of conveyance. But even this contention is, I think, unjustified. The first example of intrinsic determination we are asked to consider is given by the proposition "the occurrence of blueness intrinsically determines the occurrence of spatiality". Broad argues that, in this case, our only ground for asserting this proposition is our knowledge that if anything were blue, then that same thing would be spatial - i.e., that blueness conveys spatiality. But this conclusion is not justified for the following reason. As I mentioned in Chapter 1, some philosophers have argued that what we call a "thing" is, in fact, simply an aggregate
or "bundle" of distinct quality-instances; and, that the knowledge of a single substantive of which these quality-instances can be predicated is not something which is simply given in experience. The belief that there is a single substantive of which they can be predicated is claimed to be the product of a relatively basic metaphysical theory. Now, if we were to accept such a view, it would follow that our knowledge of intrinsic determination among the quality-instances could not legitimately be inferred from our knowledge of conveyance among them, since the belief that blueness conveys spatiality can only be reached as the result of a process of metaphysical reasoning - i.e., as an inference from the premiss that there are distinct substantives of which these qualities can be predicated. And this premiss, as Bradley and others have argued, is not self-evident. The proposition "the occurrence of blueness intrinsically determines the occurrence of spatiality", on the other hand, is self-evident. And it is clear that we cannot legitimately infer the truth of a proposition which is self-evident from the truth of a proposition which is not self-evident.

We may reply to Broad's criticism of McTaggart's second example along similar lines. McTaggart's second example is that the quality of being a husband intrinsically determines the quality of being a wife. Broad argues that, even though the quality of being a husband does not convey the quality of being a wife, it does convey the quality of having a wife; and, that our knowledge that the quality of being a husband intrinsically determines the quality of being a wife is inferred from our belief that the quality of being a husband conveys the quality of having a wife. Again, I think that this conclusion is unjustified. The quality of having a wife, insofar as
it is distinct from the quality of being a husband, is a relational quality which is intrinsically determined by the relationship $xHy$ - where $H$ is the relation is a husband to. Now, in order for the relationship to exist there must be an instance of the quality of being a wife. That is to say, the quality of having a wife is intrinsically determined by the relationship $xHy$. It cannot, therefore, be ontologically prior to that relationship. In other words, our knowledge that the quality of having a wife is conveyed by the quality of being a husband depends upon our belief that there exists a relationship $xHy$; and this belief, in turn, is inferred from our belief that the quality of being a husband intrinsically determines the quality of being a wife.

29. Having thus defined, and defended, the concept of intrinsic determination, we are now in a better position to appreciate its importance in understanding the nature of the laws of existence.

We may begin by considering McTaggart's own views on the nature of such laws. A summary statement of these views is to be found in Section 258 of The Nature Of Existence.

Any statement that any quality intrinsically determines any other quality is a law.  

As it stands, I think that there are a number of difficulties with this statement. The first is that no clear distinction is drawn between a law as such, and a statement of a law. The statement "the occurrence of blueness intrinsically determines the occurrence of spatiality" is a statement of a law. The law itself consists in the
fact that the occurrence of blueness intrinsically determines the occurrence of spatiality. The second difficulty is that it restricts the range of laws to relationships involving qualities only; whereas I would argue that there are laws which consist in relationships among relations, among qualities and relations, and among qualities, relations and unities. The third difficulty is that the suggestion that laws involve a relation of intrinsic determination would seem to restrict the realm of laws to the realm of existents; and yet, as McTaggart himself admits,

30. In addition to the distinction between a law as such, and a law of existence, we may draw a distinction between singular and general laws. A singular law is a relationship between two or more particular entities (or between a particular entity and itself). A general law, on the other hand, is a kind of law.
To fully appreciate the nature of this distinction between singular and general laws we need to be clear about the nature of the distinction between particular entities and kinds of entities. Let us assume, for example, that we have two particular instances of redness, \( r_1 \) and \( r_2 \). Now these two instances, we will assume, resemble each other exactly; and the occurrence of a relation of exact resemblance between them will, in accordance with the principle which we introduced in Chapter 2, determine a unity which comprises \( r_1 \), \( r_2 \), and the relation of exact resemblance. This unity, I suggest, is the unity of the kind. It is redness as such, as distinct from its particular instances, \( r_1 \) and \( r_2 \), which it comprises. In addition to such kinds of qualities, there may also be kinds of facts or unities. If two or more facts or unities resemble each other exactly, then they will be comprised by a kind of fact or unity. A general law, then, is a kind of law — i.e., a unity determined by relations of exact resemblance between singular laws. Although a general law is distinct from the singular laws which it comprises, it is not independent of these singular laws. Any singular law which is comprised by a general law I shall call an instance of the general law. If there is a general law comprising two or more kinds, then each instance of one kind implies an instance of the other. It is also clear that if each instance of a kind implies an instance of another kind, then there is a general law comprising these two kinds.

A general law should be distinguished from what we might call a general regularity. If each instance of a kind co-exists with an instance of another kind then that is a general regularity. But unless each of these instances implies the other we do not have a general law which comprises them. A general law is a general
regularity, but it is not just a general regularity - as Armstrong has argued\textsuperscript{45}.

An important epistemic consequence of our view of general laws is that, since the general law is a distinct entity from its particular instances, our knowledge of the general law may be epistemically prior to our knowledge of the particular instances. That is to say, our knowledge of the general law need not be inductively inferred from the knowledge of its instances.

\textsuperscript{31} The occurrence of laws among the qualities of the existent allows us to conclude that the existence of some of these qualities is dependent upon the existence of others. If the existence of some quality \( Y \) is dependent upon the existence of some other quality \( X \), then we may say that \( X \) determines \( Y \). The thesis that every quality of the existent is dependent upon the existence of some other quality of the existent I shall call the thesis of \textit{Determinism}. The thesis that every quality of the existent is dependent upon every other quality of the existent I shall call the thesis of \textit{Universal Determinism}. I shall now argue that the thesis of Universal Determinism is true.

In order to establish the thesis of Universal Determinism we need to clarify the distinction between intrinsic and extrinsic determination. If the existence of \( Y \) is dependent upon the existence of \( X \), and \( Y \) is implied by the existence of \( X \), then we may say that \( X \) intrinsically determines \( Y \). If the existence of \( Y \) is dependent upon the existence of \( X \), and if \( X \) does not imply \( Y \), then we may say that \( X \) extrinsically determines \( Y \). The thesis of Determinism might therefore be understood to mean either:
(a) Every quality of the existent is intrinsically determined by some other quality of the existent; or,

(b) Every quality of the existent is extrinsically determined by some other quality of the existent.

The thesis of Universal Determinism, on the other hand, might be understood to mean either:

(c) Every quality of the existent is intrinsically determined by every other quality of the existent; or,

(d) Every quality of the existent is extrinsically determined by every other quality of the existent.

At this point we may reject alternative (c). Some existent qualities, we have argued, are incompatible. And if two qualities are incompatible neither can be implied by the other. Insofar as they are existent, this means that neither quality is intrinsically determined by the other. It is not the case, then, that every quality of the existent is intrinsically determined by every other quality of the existent.

Without knowledge of the relative incidence of laws of existence I do not see that it is possible to eliminate (a). But even though we cannot, at this stage, eliminate (a), we do not have any reason to believe that it is true. Knowledge of the relative incidence of laws of existence is not, I think, attainable by a priori means. And without such knowledge we cannot decide either in favour of, or against, the truth of this principle.
This leaves us with (b) and (d) as the most plausible versions of Determinism. I believe that it is possible to demonstrate the truth of both of these principles. The truth of (b) is, however, implied by the truth of (d) — which is clearly the stronger principle. A demonstration of the truth of (d) is therefore sufficient to establish the truth of (b).

32. In order to establish the truth of (d) the first thing we need to do is to remind ourselves of the distinction which McTaggart drew between the "Primary" and the "Repeating" qualities of a substance. The Primary Qualities include both original qualities and qualities which are implied by original relationships. An original quality is a quality which is directly true of a substance, and which is not implied by a relationship. An original relationship is any relationship involving original qualities. Any original relationship implies a relational quality in each term of the relation — namely, the quality of being a term in that relationship. Such qualities are included among the Primary Qualities of the substance. The repeating qualities of a substance are those qualities which are intrinsically determined by the Primary Qualities of that substance.

It is clear that, in order to establish (d) we need only show that every Primary Quality of the existent is extrinsically determined by some other Primary Quality of the existent, since each of the repeating qualities is intrinsically determined by one or more of the Primary Qualities and cannot, therefore, exist independently of them.

The next step in the argument is to point out, firstly, that every Primary Quality of the existent is a particular entity; and,
secondly, that, in accordance with the principle of the Dissimilarity of the Diverse, substances are differentiated by their natures. From these premisses we may draw two further conclusions:

(1) No particular substance can have a nature other than that which it does, in fact, have; and
(2) No particular substance could have had a nature other than that which it does, in fact, have.

Given these conclusions, the next step in the overall argument is to remind ourselves of the fact that every quality is ultimately dependent upon a substance for its existence. This follows from the categorisation of existence as substance. Now, in view of the fact that the uniqueness or particularity of any substance is dependent upon the uniqueness of its nature, it follows that the existence of any particular substance is determined by the uniqueness of its nature. A substance with a nature made up of the qualities $X,Y$ and $Z$ is a different substance than a substance whose nature is made up of the qualities $P,Q$ and $R$. But it is also a different substance than a substance with a nature made up of the qualities $X$ and $Y$ only, or a substance with a nature made up of the qualities $W,X,Y$ and $Z$. That is to say, if any of the qualities which make up the nature of a particular substance should cease to exist, then that particular substance ceases to exist. Now, if the particular substance ceases to exist, then the remaining qualities - which only exist as the qualities of that particular substance - cease to exist. It is clear, then, that the existence of every quality of every substance is dependent upon the existence of every other quality of that
substance. And this is sufficient to establish the truth of (d) - i.e., the truth of Determinism - in respect of any particular substance.

33. Having established the truth of (d) in respect of any particular substance we need only introduce two further premisses in order to establish the truth of (d) as such. The first of these premisses is that the Universe is a compound substance of which all other substances are proper parts. The second premiss is that if any proper part, $A$, of the Universe, has a quality, $X$, then the Universe has the quality of containing a part with the nature of $A$. If we call this latter quality $X'$, then, as McTaggart points out, the fact that $A$ has $X$, and the fact that the Universe has $X'$, intrinsically determine one another. It follows that if $X$, which, we will assume, is a Primary Quality of $A$, did not exist, then $X'$ would not exist, since the existence of $X'$ is intrinsically determined by the existence of $X$. But if $X'$ did not exist, then the Universe would not exist, and with it would go the remaining qualities comprised by its nature. The existence of each quality of the existent is therefore dependent upon the existence of every other quality of the existent.

34. It follows from the truth of the principle of Universal Determinism that we are not justified in drawing any conclusions about what might have been the case should any particular substance have had a different nature than that which it does, in fact, have. That is to say, contrary-to-fact or counterfactual conditionals involving particular substances are, strictly speaking, illegitimate. This does not necessarily mean that other types of conditional
judgements are illegitimate. A conditional judgement of the form "If anything is $X$ then it is $Y$", as well as a subjunctive conditional of the form "If anything were $X$ then it would be $Y$", may both be understood to be expressions of a general law comprising $X$-ness and $Y$-ness. A counterfactual conditional, on the other hand, involves an illegitimate assumption about a particular substance - namely, that the substance in question might have had a nature other than that which it does, in fact, have.

This conclusion has recently been argued for on quite different grounds. Although we may not necessarily accept the premisses of that author's argument we can, I think, agree with his reply to those who would simply dismiss such a view outright, on the grounds that it leads to a "block" Universe.

I believe that Leibniz would have diagnosed his opponents' disagreement with this as resulting from a failure to think through the consequences of our most fundamental assumptions about what it is to be an individual. And the least that can be said for his own point of view, I think, is that it may have a salutary effect in warning us against being too casual in assuming that this or that feature of our world could be changed while everything else is left the same. One might even imagine that an increasing awareness of the dangers of such assumptions, rather than some shift in economic status or some regrettable effect of the aging process, is what explains why people tend to become more and more conservative as they grow older."
To this I think we need only add McTaggart's own comment, that if the absence of contingency in the Universe is an evil, it is an evil which is inevitable and universal50.

NOTES


2. Broad mistakenly considers the description in Section 108 to constitute a definition of Intrinsic Determination [Examination Of McTaggart's Philosophy, Volume 1, pp.196-7]. Much of the subsequent discussion in that chapter of the Examination is, as I shall argue below, compromised by this mistake. McTaggart nowhere offers a definition of Intrinsic Determination. The description in Section 108 simply provides us with the denotation of the concept of intrinsic determination. A definition would have provided us with a partial or complete analysis of the relation itself [cf., The Nature Of Existence, §63].


5. Armstrong talks of them as structural properties. But the distinction is not, I think, relevant to the points which I wish to make in the following discussion.


The measurement of the qualitative or intensive attributes of sensation or feeling is attended by peculiar difficulties, due to the intrinsic nature of what is measured. The degree of loudness of a sound
cannot be broken up into fractional parts which can be marked off from each other. We cannot say by direct comparison of two sounds that one is half, or a quarter, or a third, or twice as loud as the other. The two sounds cannot be superposed so as to make the fainter coincide with part of the louder, leaving a remainder which can be regarded as the quantitative difference between them. In this respect intensive differs from extensive quantity. The difference between two extensive quantities is itself an extensive quantity. The difference between two lines, one a foot long and the other ten inches long, is itself a line two inches long. But the difference between the loudness of two sounds is not itself a sound having a certain assignable loudness.

11. Wholes are a species of unity, but not all unities are wholes. I should distinguish an aggregate, which is a unity, from a whole insofar as the entities comprised by an aggregate, although co-existent, need not belong to the same ontological category.


13. A magnitude of intensity should be distinguished from an intensive magnitude. The former is an instance of the latter.

14. It might be suggested that pleasure is identical with a zero degree of pain, or vice versa. But it is not clear to me that, in that case, they could be said to share a common magnitude. In what way, for example, could we distinguish a zero degree of pleasure from a zero degree of brightness? Cf., W.E. Johnson, Logic, Part II, Chapter 7, §10:

   It is impossible, however, to compare two kinds of intensive magnitude such as the brightness of a light sensation with the loudness of a sound sensation; all we can say is that a colour of zero brightness would be non-existent, and a sound of zero loudness would be non-existent. The subtle point then arises whether the notion of zero-intensity of sound is distinguishable from the notion of zero-intensity of light. In popular language we might ask: Is there anything to distinguish absolute silence from absolute darkness? I think that apart from an organ of sensation having potentialities as a medium for receiving sensations we must say that zero intensities are indistinguishable; it is only through the capacity of visual and auditory imagery, and indirectly through the possession of organs for conveying these two corresponding kinds of sensation, that distinctions between zeros can have for us any import.

15. D.M. Armstrong, "Are Quantities Relations? A Reply To Bigelow And Pargetter". If, on the other hand, we accept the view put forward by Bigelow and Pargetter, that quantities are relations, then, since, as Russell has pointed out [The Principles Of Mathematics, §153], relations are not generally
divisible, most, if not all, magnitudes must be intensive, rather than extensive.


18. Kant, of course, has argued that all sensible qualities or representations have intensive magnitude, and that these intensive magnitudes are essential characteristics of those qualities. See *Critique Of Pure Reason*, *Anticipations Of Perception*, B207-218.


22. "A" and "B" may, of course, be names of one and the same entity.


31. Examples of "internal" relations which are incompatible with certain qualities would be even easier to cite.

32. That this definition is in accordance with McTaggart's own views is, I believe, supported by the following passage from "An Ontological Idealism" in his *Philosophical Studies*.

Some characteristics clearly imply others, since it is sometimes true that, if one substance has the characteristic X, that substance, or another which stands to it in some definite relation, will have the characteristic Y. This may be called Intrinsic Determination. [p.276]
I think we are entitled to draw two conclusions from these statements. The first is that Intrinsic Determination is a relation of implication. The second is that it relates characteristics of substances - i.e., existent characteristics. Hence our definition of intrinsic determination as a relation of existent implication.

34. See Note 2 of this chapter.
37. Two relations are wholly distinct if they are neither analysable into, nor analysable in terms of, the other.
38. This description differs slightly from McTaggart's own description in Section 109 of *The Nature Of Existence*. But the difference does not, I think, affect the metaphysical significance of the principle.
39. The view that our knowledge of such sensible qualities is epistemically prior to our knowledge of a single substance or substantive in which they inhere can be found in Locke, for example. Cf., Ayers, *Locke*, Vol.1, p. 162:

   Just as we can perceive particular identities and differences without the aid of an explicit idea of identity or diversity, so, Locke seems to have thought, we can perceive particular coexistences of qualities (and, *a fortiori*, particular qualities on their own) before forming the explicit idea of a 'substance' to which the qualities belong.
43. There cannot, however, be kinds of substances. The unity of a kind is determined by relations of exact resemblance between two or more entities. But according to the principle of the Dissimilarity of the Diverse no two substances can resemble each other exactly.
44. A general law, which is a kind of law, should be distinguished from a law between kinds. A law between kinds is a singular law - although it is, itself, implied by a general law.
If we understand the Principle of Sufficient Reason to mean that no quality can exist without a sufficient reason for its existence, then, insofar as the intrinsic determination of one quality by another is a sufficient reason for the existence of the latter, it might be argued that the truth of this principle is sufficient to establish the truth of (a). Although the principle has been considered to be self-evident by some philosophers, it is generally considered to apply to particular substances rather than to the qualities of those substances. Insofar as it is applied to the qualities of particular substances I do not consider the principle to be self-evident. In any case, the truth or falsity of the principle does not affect the overall soundness of the following argument.

McTaggart, The Nature Of Existence, §89. McTaggart's use of the adjective "primary" to describe such qualities is, perhaps, somewhat unfortunate in view of the traditional distinction between primary and secondary qualities. To avoid confusion I will use upper and lower case letters to distinguish the two senses of the term. Thus a Primary Quality is distinguished from a Repeating Quality, and a primary quality from a secondary quality.


1. In Chapter 3 we concluded that there are no simple substances - i.e., that substance is infinitely divisible. Given the assumption that substance is infinitely divisible, McTaggart has argued that, except under one condition, this assumption involves a contradiction. The contradiction arises in the following way.

There is, according to McTaggart, a relation of presupposition between a substance and its parts. In general, this relation holds between the occurrence of one quality, and the occurrence of one or more other qualities - i.e., between quality-instances - whether they be true of the same or of different substances. McTaggart's definition of this relation is as follows.

When the occurrence of the quality X determines intrinsically the occurrence of either the quality Y or the quality Z, but does not intrinsically determine whether it shall be Y or Z which does occur, let us say that X Presupposes the one of the two, Y or Z, which does actually occur.¹

McTaggart gives two examples of this relation. The first is the case where the occurrence in a substance of the quality of being human presupposes, in that same substance, the occurrence of the quality of being male, or the quality of being female - whichever of
the two it in fact has. The second is the case where the occurrence in a substance of the quality of being a parent presupposes, in some other substance, the quality of being a son, or the quality of being a daughter — whichever of the two qualities that other substance in fact has.

Two points should be noted here. The first is that the relation of presupposition does not necessarily relate qualities of one and the same substance. It may, as McTaggart’s examples clearly show, relate qualities of two or more substances. The second point is that presupposition is not a relation which relates the occurrence of one quality and the occurrence of any disjunctive quality which is intrinsically determined by the occurrence of that quality. And it does not hold between the occurrence of one quality and those elements of a disjunctive quality, intrinsically determined by that quality, which do not occur. If the occurrence of $X$, for example, intrinsically determines, whether in the same or in a different substance, the occurrence of the disjunctive quality $A$-or-$B$-or-$C$, and if the substance is in fact $A$, then although the occurrence of $X$ presupposes the occurrence of $A$, it does not presuppose $B$ or $C$.

2. McTaggart claims that whatever has a presupposition also has a Total Ultimate Presupposition. A Total Ultimate Presupposition is defined in the following way.

I should define the Total Ultimate Presupposition of $X$ as being the aggregate of all the presuppositions of $X$ after all those have been removed, the fixing of which is implied in the fixing of any of those which remain.
A presupposition is fixed when, if a quality $X$ intrinsically determines some determinable quality $W$, and presupposes some determinate form of that determinable quality, the particular determinate form, $w$, is intrinsically determined by the occurrence of some further quality $R$. For example, the fact that a substance has the quality of triangularity intrinsically determines that it has the disjunctive quality of being scalene-or-isosceles-or-equilateral; and the occurrence of the quality of triangularity presupposes the occurrence of whichever of these qualities the substance in fact has. But the fact that it is triangular also presupposes that the internal angles of that figure have a determinate relative magnitude. If we call the first presupposition $\alpha$, and the second presupposition $\beta$, then if $\alpha$ is determined, so is $\beta$. For example, the quality of being equilateral determines that the internal angles of a triangle be equal. The presupposition $\beta$ is thereby fixed by the determination of $\alpha$. It is clear from this example that this relation between presuppositions may be reciprocal - the fixing of $\alpha$ involves the fixing of $\beta$, and vice versa. And if it is the case that the relation between any two presuppositions is reciprocal, then either, but not both, may be removed from the total ultimate presupposition of $X$.

3. McTaggart's next step is to point out that every substance must have, in virtue of the fact that it is infinitely divisible, (a) an infinite number of sets of parts; (b) sufficient descriptions of each member of each of these sets of parts. That is to say, the nature of every substance requires sufficient descriptions of each member of each of its infinite number of sets of parts. Now, these sufficient descriptions can be either supplied by the nature of that substance.
of which they are parts, or presupposed by that nature. But according to McTaggart, if the descriptions are presupposed by the nature of the substance we are faced with a contradiction. He therefore concludes that the nature of the substance must supply these descriptions; and his theory of Determining Correspondence is an attempt to explain how these descriptions can be supplied.

4. The obvious question to be asked at this stage is, Why should the assumption that the nature of a substance presupposes sufficient descriptions of each member of its infinite number of sets of parts involve a contradiction?

In order to answer this question we must first of all introduce a distinction which McTaggart had made in a previous chapter between precedent and sequent sets of parts of a substance. The distinction is important, and the failure to fully appreciate its nature and significance has led at least one critic, or so I shall argue in the next chapter, to misunderstand the precise nature of the problem which the theory of Determining Correspondence was intended to solve. A set of parts of a substance is said to be sequent to some other set of parts if none of its members falls within more than one member of the other, while at least one member of the other contains more than one of its members. The distinction may be illustrated by a square divided in the following way [Figure 5.1].

The set of parts \{A,B\} is precedent to the set of parts \{A,C,D\} since none of the members of \{A,C,D\} falls within more than one member of \{A,B\}, while one member of \{A,B\}, viz. B, contains more than one member of \{A,C,D\}, viz. C and D.
Figure 5.1

With this distinction in mind it is then argued that if the nature of a substance presupposes sufficient descriptions of each member of its infinite number of sets of parts, then the substance has an infinite number of presuppositions.

If the nature of A presupposes sufficient descriptions of the members of any set, \( M \), of its parts, it will presuppose sufficient descriptions of the members of any set of its parts, \( N \), which is sequent to \( M \). For if it does not presuppose them, it must supply them, since it requires them and can only escape presupposing them by supplying them. But sufficient descriptions of the members of \( N \) will imply sufficient descriptions of the members of \( M \), since each member of \( M \) is either itself a member of \( N \), or is a whole made up of members of \( N \), and, as we have seen, sufficient descriptions of the parts give a sufficient description of the whole. And so, if
the nature of $A$ presupposes sufficient descriptions of the members of $M$, and therefore does not supply them, it cannot supply sufficient descriptions of the members of $N$, since, by supplying the latter, it would supply what they imply - namely sufficient descriptions of the members of $M$.

Since $A$ has no simple parts, it will have an infinite number of sets of parts which are sequent to any given set. And, therefore, if its nature presupposes sufficient descriptions of the members of any set of its parts, it will have an infinite number of presuppositions.¹

Now, if the only way in which a sufficient description of a substance can be given is by giving sufficient descriptions of the members of a set of its parts then the above conclusion leads to a contradiction.

The fact that $A$ is a substance presupposes the sufficient descriptions of the members of a set, $M$, of its parts. And these sufficient descriptions of the members of $M$ could only be given, on our present hypothesis, by giving sufficient descriptions of the members of sets of their parts. These members of the sets of parts of $M$ will also form a set of parts of $A$ - the set $N$. And, in the same way, sufficient descriptions of the members of $N$ could only be given by giving sufficient descriptions of the members of sets of their parts, which members will form another set of parts of $A$ - the set $P$. And this process will continue to infinity.
Such an infinite series will be vicious. For the sufficient descriptions of the members of \( M \) can only be made sufficient by means of sufficient descriptions of the members of \( N \), and these by means of sufficient descriptions of the members of \( P \), and so on infinitely. Therefore the sufficient descriptions of the members of \( M \) can only be made sufficient by means of the last stage of an unending series — that is, they cannot be made sufficient at all. But the existence of \( A \), which presupposes sufficient descriptions of the members of \( M \), implies that there are such sufficient descriptions. And therefore the fact that there can be no such sufficient descriptions implies a contradiction.

With this conclusion the most important stage of McTaggart's argument is completed. The remaining sections of the chapter deal primarily with possible objections to this argument. I will now consider some of these objections.

5. Perhaps the most obvious objection to the argument, as stated, is that it includes an unjustified assumption — namely, that the only way in which a sufficient description of a substance can be given is by means of sufficient descriptions of all the members of a set of its parts. Once we abandon this assumption then, it might be suggested, the above-mentioned contradiction can be avoided.

McTaggart did anticipate this objection; and he gives two replies to it. The first does not profess to be conclusive, and consists in pointing out the extreme implausibility of the alternative hypothesis. The alternative hypothesis is that every substance can be
sufficiently described without sufficiently describing each member of a set of its parts. This hypothesis, in itself, would not seem to be implausible, as the following example, provided by McTaggart, shows.

"The United Kingdom, for example, might be described as a Great Power, a monarchy, a nation which possessed two established churches, and so on, till the description became sufficient, without introducing sufficient descriptions of any of its parts."

The hypothesis becomes implausible, according to McTaggart, when we consider each member of the infinite number of precedent and sequent sets of parts of a substance. The hypothesis is that each of these members has a sufficient description which is supplied independently of the fact that it occupies the particular position which it does in the series of sets of parts. The description cannot be determined by the position of the substance with respect to sequent terms in the series, since in that case the precedent terms would not presuppose sufficient descriptions of a sequent term - which is contrary to the earlier assumption that they do.

Although this consideration does not refute the hypothesis, I think that McTaggart is correct in believing that it renders it implausible. Broad, however, thought otherwise. On pages 368 to 369 of Volume 1 of his *Examination* he makes two comments which are relevant to McTaggart's claim. The first is that it is not reasonable to believe that the hypothesis is implausible unless we can assign to it some antecedent probability which is less than some assigned finite number; and it is not obvious, according to Broad, how such a
probability could be calculated. The second comment is that "We are moving in such very unfamiliar regions, and the atmosphere is so highly rarefied, that we may reasonably hesitate to say what is incredible and what is not."

My response to these comments is this. In the first place it should be noted that McTaggart's argument is not, as Broad seems to assume in this part of his criticism, an attempt to undermine the plausibility of the more general claim that sufficient descriptions of the parts cannot be supplied otherwise than by inclusion or implication. It is, rather, an attempt to show the implausibility of the claim that these descriptions can be supplied independently of the exclusive descriptions of the substances which are supplied by the fact that the substances occupy the positions which they do in the infinite series of sequent and precedent sets of parts of some substance.

Secondly, it seems to me to be unreasonable to claim that, in order to rule out a proposition as implausible, we must be able to assign it some antecedent probability which is less than some given finite number. Broad seems to be suggesting that the notions of implausibility and improbability are equivalent. But such an equation is of doubtful validity. The proposition that the world was created thirty seconds ago is, I should say, highly implausible; and it is reasonable to believe that it is not true. But I do not see how, apart from metaphysical considerations which cannot obviously be used to confer any quantifiable probability upon the falsity of that proposition (unless, of course, it is demonstrably false), such a proposition can be said to be improbable - where "improbable" means "having a probability less than some assigned finite number".
Thirdly, in reply to the second of Broad's comments, I should say that although the argument is rather abstract, the type of considerations which McTaggart has in mind in determining the implausibility of the proposition can be illustrated by a more concrete example. Consider a square drawn upon a uniformly white piece of paper. Let this square be divided, like a chess board, into sixty-four smaller squares of equal area. Now, attempt to provide a sufficient description of any one of the squares which does not include the characteristic of being, for example, the $m$th square from the top in the $n$th column from the right. In other words, we are asked to believe that the squares which make up the original square have each a sufficient, and therefore an exclusive, description which does not essentially include any serial or ordinal characteristics. The situation we are considering here is, I suggest, analogous to that discussed by McTaggart; and the same kind of implausibility which we would assign to the assumption that sufficient descriptions of the squares can be provided, which do not essentially include their ordinal characteristics, is, I would argue, to be ascribed to the assumption that sufficient descriptions of each member of the infinite series of sequent and precedent sets of parts of a substance can be provided which do not essentially involve the ordinal characteristics of the substance implied by its occupying the position which it does in that series.

6. The assumption that sufficient descriptions of a substance can be given otherwise than by means of sufficient descriptions of each member of a set of its parts is equivalent to the assumption that the presuppositions by that substance of these descriptions are
independently fixed. We have considered McTaggart's initial reply to this objection, and I have argued that, although it might not be conclusive, it does succeed in making this assumption seem plausible.

His second reply does, on the other hand, profess to be a conclusive rebuttal. It is stated, briefly, as follows.

We saw in Section 189 that, if no presupposition in the series is independently fixed, a contradiction arises. It is therefore necessary - since they must be fixed somehow - that at least one of the presuppositions must be independently fixed. But, as we have seen, it is not necessary for any of the presuppositions which are precedent to any presupposition to be independently fixed, since it will be fixed by the fixing of any sequent presupposition. And every presupposition is precedent to some presupposition. Therefore it is not necessary for any presupposition to be independently fixed. And thus we have a contradiction.

Broad has claimed that this particular argument involves a "gross logical fallacy". I will argue later that the argument does not, in fact, involve any such fallacy. But for the moment it is sufficient to note that the above-quoted passage is a restatement of the original argument; and, even if it should, thus stated, involve a fallacy, this does not imply that the original argument involves such a fallacy. It is possible that McTaggart's restatement of the argument is clumsy or ambiguous.

The original argument is as follows. Let us suppose that every member of a set of parts of a substance can be described sufficiently
without mentioning sufficient descriptions of the parts which make it up. Would we then avoid a contradiction? According to McTaggart we would not. The fact that every member of a set of parts of a substance can be sufficiently described without mentioning sufficient descriptions of its parts does not alter the fact that it can also be described by means of sufficient descriptions of all the members of any set of its parts—namely, as the whole which is made up of the set of parts whose members have the descriptions in question. Now, let us assume that $M$ is a set of parts of a substance $A$, and that $N$ is a set of parts which is sequent to $M$. We have assumed that $A$ presupposes sufficient descriptions of all the members of all its sets of parts. So we know that the nature of $A$ presupposes sufficient descriptions of the members of $M$ and of $N$. Let us call the presupposition by the nature of $A$ of sufficient descriptions of the members of the members of $M$ the presupposition $\mu$; and the presupposition by the nature of $A$ of sufficient descriptions of the members of $N$ the presupposition $\upsilon$. We also know that if the presupposition of sufficient descriptions of the members of a set of parts is fixed, then the presupposition of sufficient descriptions of the members of any precedent set is thereby fixed; so that if $\upsilon$ is fixed, then $\mu$ is fixed. If we now consider the total ultimate presupposition of $A$ it is clear that, since $\mu$ is fixed by the fixing of $\upsilon$, $\mu$ does not form part of the total ultimate presupposition of $A$. On the other hand, the presupposition, $\upsilon$, of sufficient descriptions of the members of $N$ will be fixed by the fixing of the presupposition $\pi$ of sufficient descriptions of the members of a set of parts, $P$, which is sequent to $N$. So $\upsilon$ will not form part of the total ultimate presupposition of $A$. It is clear that no presupposition can form part
of the total ultimate presupposition of $A$ unless the set of parts to which it refers has no set of parts which is sequent to it. But since every set of parts of a substance is precedent to some other set of parts, the total ultimate presupposition of $A$ will not include $\mu$, nor any presupposition the fixing of which implies the fixing of $\mu$. And this, according to McTaggart, is impossible.

For the total ultimate presupposition was defined as the aggregate of all the presuppositions, after those had been removed, the fixing of which was implied by the fixing of any of those which remained. It is therefore impossible that the total ultimate presupposition presupposed by $A$ should contain neither $\mu$, nor any presupposition whose fixing implies the fixing of $\mu$.

I suggest that there is no fallacy involved in this statement of McTaggart's original argument. If there is any fallacy involved it must, then, lie either in McTaggart's restatement of the argument in Section 191, or else in Broad's interpretation of the argument. Let us return, then, to Broad's criticism of this restatement.

According to Broad, McTaggart's statement of the argument to show that the assumption that there sufficient descriptions of each member of each of the infinite number of sets of parts of a substance can be given otherwise than by means of sufficient descriptions of each member of a set of its parts involves a contradiction, contains a logical fallacy. The fallacy arises, according to Broad, through the confusion of two quite different propositions which are often expressed in English by similar sentences.
The two kinds of proposition are: (a) "There must be an S which is in fact P"; and (b) "There is in fact an S which must be P". These two quite different kinds of propositions are often both expressed by the ambiguous sentence "Some S must be P". The contradictory of the second is, of course, the proposition "There is in fact no S which is necessarily P". This is perfectly compatible with the assertion of the first, viz., "There must be an S which is in fact P".

I will not, for the moment, question whether this is an accurate restatement of McTaggart's argument. What is more important is to determine whether the type of inference which Broad has cited is always invalid. And I don't believe that it is always invalid for the following reason.

Consider the series of integers between 1 and 10. Of this series the following statements are true:

(1) There must be an integer which is in fact greater than 5.
(2) There is in fact an integer which must be greater than 5.

Now, according to Broad, the contradictory of (2) is:

(2') There is in fact no integer which must be greater than 5.

And this statement, although the contradictory of (2), is quite compatible, according to Broad's reasoning, with (1). But it seems clear to me that (2') and (1) are incompatible; and their
incompatibility is determined by the nature of the series of terms we are asked to consider. In general, if the characteristics of the terms in the series are all essential characteristics of those terms, then the type of inference which Broad has condemned is, in fact, valid.

Let us now consider how this point is relevant to McTaggart's argument. According to McTaggart, the following two propositions have been established by previous argument:

(A) There must be a presupposition which is, in fact, independently fixed.

(B) There is in fact no presupposition which must be independently fixed.

McTaggart claims that these two propositions are incompatible. In general, these types of propositions would not be considered to be contradictories. They can, however, be shown to be incompatible, in this case, with the help of two principles. The first is a logical principle.

(C) If P is incompatible with Q, then P is incompatible with whatever implies Q.

Proposition (B) is obviously incompatible with its contradictory (B').

(B') There is in fact some presupposition which must be independently fixed.
So, if we can show that (A) implies (B'), we can show that (A) is incompatible with (B). And we can do this by appealing to the principle of Extrinsic Determination. Once we accept this principle, we can infer, from the premiss that there must be a presupposition which is in fact independently fixed, the conclusion that whichever presupposition has the characteristic of being independently fixed has that characteristic essentially. That is to say, we can infer that there is in fact some presupposition which must have the characteristic of being independently fixed - which is equivalent to (B').

On this basis I suggest that McTaggart's argument is, in fact, valid; and, that propositions (A) and (B), though not formal contradictories, are in fact incompatible.

7. I have argued that Broad's criticism of McTaggart's restatement of the argument in Section 191 of *The Nature Of Existence* is inconclusive. His criticism is not, however, confined to this restatement. He does, in fact, offer independent criticisms of the original argument. There are, however, two obstacles in the way of a succinct treatment of these criticisms. The first is that Broad has characteristically chosen to express McTaggart's argument in his own terms. The second is that Broad's restatement of the argument does not involve the central concepts of presupposition and requirement - which are independently criticised and rejected in an earlier chapter14. An adequate assessment of the soundness of McTaggart's arguments must, however, take both strands of Broad's criticism into consideration. In order to preserve continuity I will begin with his comments upon the concepts of presupposition and requirement.
8. Concerning the relation of presupposition Broad makes a number of points. The first is that, in his discussion of this relation, McTaggart has, according to Broad, tended to confuse or conflate two distinct relations, with the result that he has committed at least one logical fallacy.¹⁵

McTaggart, as I have said, failed to distinguish these two relations, and used the single name "Presupposition" for both of them. He also failed to notice that presupposition, in one of the senses he has in mind, is a triadic relation, relating two characteristics and a particular.¹⁶

According to Broad, McTaggart failed to distinguish the relation of partial conveyance from the relation of presupposition. The former is a dyadic or two-termed relation relating two characteristics. The latter is a triadic or three-termed relation relating two characteristics and a particular or substance. Partial conveyance is defined in terms of the relation of conveyance, which was defined previously by Broad in the following way.

I define the statement that $\varphi$ "conveys" $\psi$ to mean that, if anything has $\varphi$, it necessarily follows that that same thing has $\psi$.¹⁷

A characteristic $\varphi$ is said to "partially convey" another characteristic $\psi$ if and only if the following four conditions are satisfied.
(a) a is a class of mutually exclusive characteristics.
(b) \( \varphi \) is a member of \( a \).
(c) If anything has \( \emptyset \), then it is necessary that this same thing has some member of \( a \).
(d) There is no member of the class \( a \) such that, if a thing has \( \emptyset \), it necessarily has that particular member.\(^{11}\)

Broad's relation of presupposition — which I will distinguish from McTaggart's by the suffix "\(^{h}\)" as in "presupposition\(^{h}\)" — is defined in the following way. The statement "\( \emptyset \) presupposes \( \psi \) in the instance \( x \)" means that a substance \( x \) is characterised by \( \emptyset \) and \( \psi \), and \( \emptyset \) partially conveys \( \psi \).\(^{12}\)

There are, I suggest, two serious problems with Broad's criticism and interpretation of the relation of presupposition. The first is that the claim that McTaggart had either confused or conflated the relations of partial conveyance and presupposition\(^{h}\) is unjustified. It is quite clear from Sections 183-184 of the text that McTaggart understood the relation of presupposition to be a relation between occurrences or instances of characteristics, and not between characteristics per se. Where this condition is not explicitly stated, it is always implied. A related point is that although instances of the relation are generally dyadic, it is possible that there may be instances which relate more than two terms. For example, the occurrence of the quality of triangularity in a substance which is equilateral and, therefore, equiangular presupposes both the occurrence of the quality of equilaterality and the occurrence of the quality of equiangularity in that substance. The instance of the
relation of presupposition in this case is thus triadic or three-termed.

The second problem is that presupposition is defined as being a relation between characteristics of one and the same substance. Both in his definition of conveyance, and in his definition of presupposition, Broad explicitly emphasises this point. But this qualification is clearly at odds with McTaggart’s definition of presupposition – a relation which may be, but is not necessarily, a relation between occurrences of characteristics of one and the same substance or substantive. This point is clearly made by McTaggart in Section 183.

When the occurrence of the quality \( X \) determines intrinsically the occurrence of either the quality \( Y \) or the quality \( Z \) (whether as belonging to the same subject as \( X \), or to some other), but does not intrinsically determine whether it shall be \( Y \) or \( Z \) which does occur, then \( X \) is said to presuppose \( Y \) or \( Z \).” [My emphasis]

These two problems should lead us to doubt the accuracy and conclusiveness of Broad’s subsequent criticism and restatement of McTaggart’s argument. This doubt may be strengthened if we consider Broad’s attempt, on page 204, to convict McTaggart of committing another logical fallacy.

He says in §184 that, if \( X \) presupposes \( Y \) or \( Z \), and \( Y \) presupposes \( S \) or \( T \), and \( Z \) presupposes \( U \) or \( V \), then \( X \) will presuppose \( S \) or \( T \) or \( U \) or \( V \). There are two comments to be made
on this. (a) We must substitute for "X presupposes Y or Z" that "Y and Z are a set of partial consequents of X", and similarly throughout the proposition. (b) Even so the statement is false. We can infer from the premises that anything that had X would have S or T or U or V. And this is part of what is asserted in the conclusion. But we cannot infer, from the fact that what has X need not have Y and that what has Y need not have S, that what has X need not have S. And this is equally part of the conclusion. So McTaggart has simply committed a logical fallacy here.21

We have here an example of something which Broad repeatedly does in his criticism of McTaggart. Having simply asserted that McTaggart's actual expression of some argument is ambiguous or confused, he then restates the argument in his own words. Having done this he subsequently finds some sort of logical fallacy in the argument and promptly dismisses it. In this case, as in a number of others, the problem lies in Broad's interpretation of the argument, and not in the argument itself. Broad asserts here that, from the conclusion that X presupposes S or T or U or V, McTaggart has tacitly inferred that X need not have S; and such an inference, according to Broad, is unsound.

It may be true that such an inference is tacitly implied in Broad's interpretation of the argument, but there is no evidence to suggest that McTaggart did, in fact, make such an inference. Nor is there any evidence, apart from Broad's interpretation, to suggest that such an inference is implicit in McTaggart's argument. McTaggart's actual argument - which is, in fact, merely an attempt to
draw the reader's attention to some of the implications of the view that the relation of presupposition is a transitive relation - is, I suggest, more like this. If \( X \) presupposes \( Y \) or \( Z \), and \( Y \) presupposes \( S \) or \( T \), and \( Z \) presupposes \( U \) or \( V \), then \( X \) presupposes \( S \) or \( T \) or \( U \) or \( V \) - whichever of these disjuncts does in fact occur. But to say that \( X \) presupposes \( S \) or \( T \) or \( U \) or \( V \) implies that \( X \) does not intrinsically determine \( S \) or \( T \) or \( U \) or \( V \). And this may be what Broad has in mind when he says that McTaggart has inferred that what has \( X \) need not have \( S \). Broad has asked us to consider the possibility that, although \( X \) presupposes \( Y \), and \( Y \) presupposes \( S \), \( X \) does not presuppose \( S \), since it intrinsically determines it - in which case the claim that presupposition is a transitive relation would be shown to be false.

Although this objection might seem plausible, its plausibility rests upon the failure to fully appreciate the nature of the relation of presupposition. There are two important points to bear in mind when discussing this relation. The first is that presupposition is a relation between quality-instances. The second is that a quality-instance can only presuppose what it does not supply; and if a quality-instance directly or indirectly determines some other quality-instance, it cannot presuppose it, since it supplies it. Let us now reconsider our example.

Broad has asked us to assume that the occurrence of \( X \) intrinsically determines the occurrence of \( S \). Now, we have assumed that the occurrence of \( S \) intrinsically determines the occurrence of \( Y \) since, \textit{ex hypothesi}, the occurrence of \( Y \) presupposes the occurrence of \( S \). In other words, the occurrence of \( X \) indirectly determines the occurrence of \( Y \), and if the occurrence of \( X \) indirectly determines the occurrence of \( Y \) it cannot presuppose it, since it supplies it.
Broad's objection is therefore based upon an assumption which, given the circumstances, cannot possibly be true. Any initial plausibility it may have is derived from his tendency to consider the relation of presupposition in abstraction - i.e., independently of any characteristics which it may have as a constituent of a concrete fact.

I suggest, then, that Broad has not shown that the relation of presupposition, as distinct from the relation of presupposition', is not a transitive relation. Nor has he uncovered any logical fallacy in McTaggart's statement of this principle.

9. Having discussed the nature of the relation of presupposition, Broad turns his attention to the principle of Total Ultimate Presuppositions - a principle which, we have seen, is crucial to McTaggart's argument. The principle of Total Ultimate Presuppositions is understood to be equivalent to the proposition that, if anything has a presupposition it has a total ultimate presupposition. Broad's objection to this principle is that it is conceivable that something should have a presupposition without having a total ultimate presupposition; so that, even if the principle is in fact true, it is not a logical truth, or, rather, not a necessary truth. We are firstly asked to consider what would be involved in a case where the principle was not true.

Suppose, if possible, that, in a certain instance \( x \), \( \emptyset \) had presuppositions but had no Total Ultimate Presupposition. This would mean that there is an unending series of characteristics, \( \psi_1, \psi_2, \ldots \), such that (i) all of them, and also \( \emptyset \), characterise
x, (ii) $\varnothing$ partially conveys each of them, (iii) each conveys the ones that precede it in the series, and (iv) none of them conveys any one that follows it in the series. In this case, if it were possible, $\varnothing$ would have presuppositions, but no Total Ultimate Presupposition, in the instance x."

Broad accepts, and illustrates, the *prima facie* plausibility of the principle in some cases. The occurrence of the determinable quality of being coloured, for example, presupposes a series of more and more determinate colour qualities in the substance until an absolutely determinate shade of some specific colour is reached. Let us assume that the substance is, in fact, an absolutely determinate shade of scarlet. The occurrence of the quality of being coloured presupposes the occurrence of the specific quality of being red; and the occurrence of the quality of being red presupposes the occurrence of the quality of being scarlet which, in turn, presupposes the occurrence of some absolutely determinate shade of scarlet. Now, since the occurrence of this absolutely determinate shade of scarlet implies the fixing of each of the other presuppositions mentioned, we may say that it is the total ultimate presupposition of the occurrence of the determinable quality of being coloured in that substance. In such cases, according to Broad, the principle of Total Ultimate Presuppositions is obviously valid. But it is not so obviously valid, he suggests, in some other cases.

Let us assume that a substance, $x$, has the property of having a certain characteristic $\varnothing$ at some time within a certain period $\tau$. 
Now consider the series of characteristics "having $\varnothing$ for less than $\tau$", "having $\varnothing$ for not more than $\tau/2$", "having $\varnothing$ for not more than $\tau/4$", and so on without end. Each of them conveys all its predecessors and none of its successors. Each of them is partially conveyed by the property of "having $\varnothing$ at some time within the period $\tau$". So, if all of them could belong to a particular $x$, the property of "having $\varnothing$ at some time within the period $\tau$" would, in the instance $x$, presuppose all these other characteristics, and yet would have no Total Ultimate Presupposition, since the series is plainly endless.

There are two replies to this objection to McTaggart's principle. The first is to suggest that it is impossible for any substance to have a characteristic within a period of time without its having that characteristic for a finite duration within that period. In this case, the series of characteristics mentioned by Broad must have some final term, $\tau/n$, equal to the actual duration for which $x$ has $\varnothing$, such that for any finite value greater than $n$ the series of characteristics generated by these values will not be true of $x$. Broad did, in fact, anticipate this response and he replies by saying that, in such a case, the possibility of any continuous change with respect to a characteristic would be eliminated. Unfortunately, Broad does not elaborate upon this point, and his notion of continuous change of a substance with respect to a characteristic remains unanalysed. I presume that he has in mind the kind of analysis of continuous change proposed by Bertrand Russell in *The Principles Of Mathematics.*
Change is the difference, in respect of truth or falsehood, between a proposition concerning an entity and a time $T$ and a proposition concerning the same entity and another time $T'$, provided that the two propositions differ only by the fact that $T$ occurs in the one where $T'$ occurs in the other. Change is continuous when the propositions of the above kind form a continuous series correlated with a continuous series of moments."

It is, however, difficult to see how such an analysis, according to which continuous change involves a one-to-one correlation between the members of a compact series of propositions and a compact series of moments of time, can provide us with an analysis of the notion of continuous change with respect to a characteristic. In fact, some philosophers have raised doubts as to whether Russell's account can provide us with a satisfactory analysis of change in any sense. Fortunately, it is not necessary to enter into a discussion about the nature of continuous change to show that Broad's objection is unsatisfactory, since it can be dismissed on quite different grounds.

Let us assume, with Broad, that it is possible for a substance to have a characteristic at some time within a certain period of time, without this fact implying that the substance must have the characteristic for a finite duration within this period. How would this affect the principle of Total Ultimate Presuppositions? I suggest that it would not affect the validity of this principle at all, since the occurrence of the characteristic of "having $\phi$ at some time within the period $t$" would, in that case, imply the occurrence of the series of characteristics "having $\phi$ for not more than $t/2$",
"having \( \emptyset \) for not more than \( \frac{x}{4} \)"}, and so on without end. And since it supplies these characteristics by implication it cannot presuppose them. Such an example does not, then, provide us with a counter-example to the principle of Total Ultimate Presuppositions. The fact that Broad did believe it to be a counter-example to this principle suggests that, once again, he has failed to fully appreciate the nature of the relation of presupposition.

10. Broad provides one further example of a case where something has a presupposition, without, apparently, having a total ultimate presupposition. It is not intended to be a counter-example to McTaggart's principle, since it rests upon an assumption which, Broad admits, may, in fact, be false. We are asked to consider the possibility of a red band, of a determinate length, which varies continuously in shade from one end to the other.

For let the band be of length \( x \), and let \( s \) be a perfectly determinate shade of red which occurs somewhere within this band. Then the band will have a series of properties of the following kind, viz., "having the shade \( s \) throughout a length less than \( x \)\," "having the shade \( s \) throughout a length not greater then \( x/2 \)\," "having the shade \( s \) throughout a length not greater than \( x/4 \)\", and so on.\(^{25}\)

Again there are two replies to this objection. The first relies upon the evident truth of the principle that nothing can be coloured without that colour occupying a finite area of that thing. If this principle is accepted - and it is almost universally accepted - then
the fact that the band has the colour s implies that it has s throughout a finite length. Let us assume that this length is equal to $x/10$. Then the series of characteristics "having the shade s throughout a length not greater than $x/n$" ceases to be true of the band for all values of $n$ greater than 10. The series, in this case, is not endless, and the property of having the shade s, in this case, will not have an infinite number of presuppositions. It can, therefore, in principle be said to have a total ultimate presupposition.

Even if we do not accept the principle that nothing can be coloured without that colour occupying a finite area of that thing, there is still another reason for rejecting Broad's example. If we assume that it is possible for the band to have s at some point within its length, without s occupying some finite part of that length, then it is clear that the property of having s somewhere within $x$ implies the series of properties in question. And if it implies these characteristics it cannot presuppose them. The occurrence of the property of having s somewhere within $x$ does not, therefore, have an endless series of presuppositions without having a total ultimate presupposition. This reply is analogous to that which we gave to Broad's previous putative counterexample, and it points to the same failure to fully appreciate the nature of the relation of presupposition.

11. In the second part of Chapter 12 of the *Examination* Broad briefly discusses the concept of Requirement; and, with one qualification, he seems to be prepared to accept its validity. But before we consider this proposed qualification two points should be
made. The first is that mention of Requirement initially occurs in Section 184 of *The Nature Of Existence*. No attempt is made there, or elsewhere, to define this concept. In view of McTaggart's conscientiousness in regard to the provision of definitions of concepts which he is using in a technical sense, and in view of the fact that it first occurs as an element in the definition of the technical concept of Presupposition, we may conclude either that he believed that the concept of Requirement is indefinable; that he believed that its meaning was generally understood; or both that it was indefinable and that its meaning was generally understood. In any case I think we ought to be cautious about Broad's apparent attempt to bestow upon it the status of a technical term in need of explanation.

The second point is that nothing which Broad says about Requirement materially affects the validity of the concept of Presupposition or of the arguments which McTaggart uses to show that the nature of a substance cannot presuppose sufficient descriptions of each member of an infinite series of precedent and sequent sets of its parts. I have included a discussion of Broad's comments on this concept more for the sake of completeness than because of any belief that what he has to say may undermine the soundness of McTaggart's position.

McTaggart introduces the concept of Requirement in the context of his discussion of the relation of presupposition.

The nature of presupposition may be expressed not unfairly by saying that $X$ presupposes whatever it requires but does not supply. $X$ requires $Y$-or-$Z$, for if it occurs, something must
occur which is $Y$ or $Z$. But it does not presuppose $Y$-or-$Z$, for it supplies it, since it intrinsically determines it, and so, if we know that $X$ occurs, we know that $Y$-or-$Z$ occurs. But in addition to this, it either requires $Y$ or requires $Z$, and this it does not supply. For the fact that $X$ occurs does not determine whether it is $Y$ or $Z$ which occurs. 26

As I pointed out above, the concept of Requirement remains undefined by McTaggart. Now, although Broad does not attempt to define the concept, he does attempt to explain it by asking us to consider an example. There is, however, one important point which we need to keep in mind when considering this example. This is that, according to McTaggart, if an entity $X$ implies the disjunctive quality $Y$-or-$Z$, and presupposes either $Y$ or $Z$, then, since something must have the disjunctive quality $Y$-or-$Z$, and since something must have $Y$, or something must have $Z$, $X$ therefore requires $Y$-or-$Z$, as well as either $Y$ or $Z$ - depending upon which of these two does, in fact, occur. The example we are asked to consider is as follows.

Suppose that a certain particular has the property of being a conic section. Then this conveys the disjunctive property of being either a circle or an ellipse or an hyperbola or a parabola or a pair of intersecting straight lines. It may be said then that the characteristic of being a conic section "supplies" this disjunctive property. Now suppose that the particular in question is in fact a circle. Since the property of being a conic section only partially conveys that of being a circle, we say that it "presupposes" circularity in this
instance. Now, it seems to me, what the property of being a conic section has here failed to "supply" is the differentia between the generic characteristic of being a conic section and the specific characteristic of being a circle. This differentia is the characteristic of being a section perpendicular to the axis of the cone. Thus, it seems to me, the correct statement would be, not that being a conic section in this instance requires being circular, but that in this instance it requires being perpendicular to the axis of the cone. It supplies the property of being a conic section in some direction or other; it fails to supply the determinate direction; and yet in any particular instance the direction must be determinate. Thus what it requires in any particular instance is surely the determinate direction of the section. So I should say that being a conic section supplies being either a circle or an ellipse or an hyperbola or a parabola or two intersecting straight lines, that in this instance it presupposes being circular, and that in this instance it requires being a section perpendicular to the axis of the cone.

On this interpretation the notion of requirement would cease to apply where there is no question of a differentia, as, for example, in the case of the determinable "being coloured" and the determinate "being red". Suppose that a certain particular is extended. I should say that this supplies being red or blue or green or yellow or white or black. Suppose that this particular is in fact red. Then I should say that being extended in this instance presupposes being red. But there is
nothing of which I could say that it was required in this instance by being extended."

It is difficult, when considering these comments, not to conclude that Broad has simply misunderstood what is involved in the concepts of Presupposition, Requirement, and Supply. I can see no reason why this occurrence of the property of being a conic section should not require an occurrence of the disjunctive quality of "being-either-a-circle-or-an-ellipse-or-an-hyperbola-or-a-parabola-or-two intersecting straight lines", an occurrence of the quality of "being a section perpendicular to the axis of the cone", and an occurrence of the property of "being a circle". It requires each of these characteristics; it supplies the first by implication, and it presupposes the last two. The point is that although an occurrence of some characteristic cannot both presuppose and supply an occurrence of some other characteristic or set of characteristics, this does not mean that it cannot require both what it supplies and what it presupposes. The failure to appreciate this point has, I believe, rendered Broad’s comments largely irrelevant to McTaggart’s actual views. This belief is supported by his remarks in the second paragraph of the above quotation. Let us suppose that a substance, $x$, is extended - i.e., that it has an instance of the quality of extension. Now, an occurrence of this quality in $x$ does not imply an occurrence of the determinable quality of being coloured. Nor does it imply an occurrence of the disjunctive quality red-or-blue-or-green-or-yellow-or-black-or-white. And even if $x$ is, in fact, red, it does not imply an occurrence of being red. In this instance, then, the quality of being extended does not require any of these other
qualities. But I do not see how this can be interpreted as a criticism of McTaggart's views. McTaggart does not argue that an occurrence of every characteristic requires the occurrence of some other characteristic or characteristics. He is committed to the view that an occurrence of the quality of extension in x extrinsically determines every other quality of x, including the quality of redness. But the concepts of Requirement and Extrinsic Determination are not equivalent. An occurrence of the determinable quality of being coloured, on the other hand, does imply an occurrence of the quality of being extended. And it does imply an occurrence of the disjunctive quality of being red-or-blue-or-green-or-yellow-or-black-or-white. But it does not imply an occurrence of the quality of being red, even if x is, in fact, red - it presupposes it. In other words, the occurrence of being coloured in x requires an occurrence of the quality of being extended, an occurrence of the disjunctive quality of being red-or-blue-or-green-or-yellow-or-black-or-white, and an occurrence of being red. It supplies the first two by implication, and presupposes the last.

In general, then, we may conclude that the concepts of Presupposition, Requirement and Supply apply to quality-instances, rather than to qualities per se.

12. We have considered McTaggart's arguments to show that the nature of a substance cannot, without involving a contradiction, presuppose sufficient descriptions of each member of an infinite series of precedent and sequent sets of its parts. But it nonetheless requires these descriptions; and, as we have seen, if it does not presuppose them it must supply them. Now there are, according to
McTaggart, only two ways in which the nature of a substance can supply sufficient descriptions of the members of a set of its parts — it can include them, or it can imply them. To establish that the nature of a substance must imply these descriptions he argues that it cannot include, without also implying, these descriptions; and he offers two arguments to show that it cannot simply include these descriptions.

The first argument consists in an appeal to the implausibility of the assumption that there could be an infinite number of ultimate concurrences between the exclusive descriptions of the substances which are implied by their occupying the positions which they do in the infinite series of sets of parts, and the additional qualities which are required by those substances if they are to have sufficient descriptions which do not include, and which are not implied by, their ordinal characteristics. This is essentially the same argument he used in Section 190 when discussing the assumption that the infinite number of sufficient descriptions of the members of the sets of parts of a substance are presupposed by the nature of that substance. Although not conclusive, the argument does succeed, as I suggested in Section 7, in making the assumption seem plausible.

The second argument does profess to be conclusive. McTaggart begins by assuming that the nature of a substance can include sufficient descriptions of all its parts. He then argues that unless it also implies them a contradiction arises. The reason why a contradiction arises has to do with the concept of a Minimum Adequate Description. A description may, in general, be adequate or more than adequate, for some given purpose. For example, the description "The only Australian state which is surrounded by water" is adequate for
the purpose of providing an exclusive description of Tasmania. A minimum adequate description is a description which is adequate for a given purpose, but no more than adequate for that purpose - i.e., it does not contain any characteristics which are superfluous for the purpose in question. The description "The only Australian state surrounded by water, and the only Australian state which lies to the south of Victoria" is more than adequate for the purpose of exclusively describing Tasmania; and we can obtain a minimum adequate description for that purpose by omitting either of the conjuncts which make up that description.

13. The next step in the argument is to point out that, for every description which is adequate for a given purpose, there must be at least one minimum adequate description for that purpose. The latter will either be identical with the former, or else it will differ from it by the omission of those elements which are superfluous for the given purpose.

We are then asked to consider what could serve as a minimum adequate description for the purpose of providing sufficient descriptions of each member of the infinite number of precedent and sequent sets of parts of a substance. McTaggart argues that it cannot consist of sufficient descriptions of the members of any set of parts which is precedent to some other set of parts, since sufficient descriptions of the latter will imply sufficient descriptions of the former. Hence, sufficient descriptions of the precedent set of parts are superfluous for the given purpose and therefore cannot form part of the minimum adequate description for that purpose. However, since we know that every set of parts is precedent to some other set,
sufficient descriptions of the former will always be superfluous for the purpose, and cannot, for this reason, be included in the minimum adequate description. And this implies that there cannot be a minimum adequate description for the purpose of providing sufficient descriptions of each member of the infinite number of sets of parts of a substance. But according to the assumption that the nature of a substance can include, without implying, these sufficient descriptions, there must be a description which is adequate for the purpose of providing such descriptions; hence there must be a minimum adequate description for this purpose.

And thus there is a contradiction. There must be a minimum adequate description for the description in question, and yet there cannot be one. There is only one way in which this can be avoided. A chain of implications must run downwards from precedent sets to sequent sets, such that sufficient descriptions of the members of the precedent set imply sufficient descriptions of the members of the sequent sets. In this case the inclusion of the description of the precedent set will render inclusion of the descriptions of the sequent sets unnecessary, since they can be deduced from it. And thus the minimum description of A which is adequate for providing sufficient descriptions of all its parts will be the description of the parts of the precedent set, from which the chain of implications starts.

Of the two ways in which the nature of A could supply the sufficient descriptions of its parts, we have now seen that inclusion without implication would involve a contradiction. We
have therefore no hope left but in implication. We must find a
description of $A$ which, while it may include sufficient
descriptions of the members of one or more sets of its parts,
implies sufficient descriptions of the members of the infinite
number of sets of parts which are sequent to the last of
these."

The theory of the Determining Correspondence of Substance is an
attempt to provide a description of $A$ which will satisfy this last
condition.

NOTES

4. See also Appendix I, "McTaggart's Immaterialism - A Reply To Nathan".


CHARTER SIX

Determining Correspondence

1. In the previous chapter we considered McTaggart's attempt to prove that, except under one condition, the assumption that all substances are infinitely divisible leads to a contradiction. The arguments used to establish this conclusion are, we concluded, fundamentally sound. In order to avoid a contradiction we must, therefore, agree with McTaggart that the stipulated condition is satisfied, and that there is a description of every substance which implies sufficient descriptions of each member of an infinite series of sequent sets of its parts.

In this chapter we will consider McTaggart's proposed solution to the problem of finding such a description - the theory of the Determining Correspondence of Substance. I will begin by stating what the theory in question is, and explain how it avoids the contradiction of infinite divisibility. I will then consider the criticisms of this theory which have been put forward by various philosophers, and argue that they are basically unsound.

2. Perhaps the best approach to an understanding of McTaggart's solution to the contradiction of infinite divisibility is to begin with his summary statement at the end of Chapter 24 of The Nature Of Existence.
To sum up the results of this chapter - the absence of simple substances does not involve a contradiction if the universe has a set of parts which answer to our definition of primary parts. (These primary parts may form one primary whole, or may be divided into any number of primary wholes.) The theory that the universe has such a set of parts I shall call the theory of the determining correspondence of substance.

Clearly, the central concepts involved in the solution are those of a Primary Part and a Primary Whole. Once we have grasped the full significance of these concepts we will, I believe, have understood the essential nature of the proposed solution. What, then, is a Primary Part of a substance? McTaggart defines a Primary Part in the following way.

When a set of parts of a substance is such that none of its members are determined by determining correspondence, and that, from sufficient descriptions of all its members, there follow, by determining correspondence, sufficient descriptions of the members of an infinite series of sequent sets, then the members of that set are called Primary Parts.

We have discussed most of the concepts involved in this definition in previous chapters. The concepts of a Set of Parts, of a Sufficient Description, and of a sequent set of parts are, I trust, clearly understood. Unfortunately, unless we understand what determining correspondence is, the definition is of little benefit in helping us to understand what a Primary Part is.
3. If we turn, then, to McTaggart’s initial discussion of determining correspondence in Section 197 of The Nature Of Existence, we find it stated there that determining correspondence has three typical features. Let us assume that a substance, $A$, has a set of parts $\{B, C\}$. Then, according to McTaggart, the parts of $A$ will form a determining correspondence system if the following three conditions are satisfied.

(1) Each of $B$ and $C$ has a set of parts corresponding to each set of parts of $A$.

(2) The correspondence between the parts is of the same sort throughout the system; it involves a one-to-one relation between the members of the various sets of parts; and is such that a certain sufficient description of $C$, which includes the fact that it is in this relation to some part of $B$, will determine a sufficient description of the part of $B$ in question.

(3) The correspondence is such that when one determinant is a part of another determinant, then any part determined by the first part will be part of a part determined by the second.

Such a system is called a “determining correspondence” system since certain sufficient descriptions of $B$ and $C$ will intrinsically determine sufficient descriptions of each member of an infinite series of sets of parts of $A$. Given that such a system of correspondence holds among the parts of $A$, then $B$ and $C$, in virtue of their unique position in the series of sequent sets of parts of $A$,
are said to be Primary Parts of A; and A itself, being a whole made up of a set of Primary Parts, is said to be a Primary Whole.

Although the above set of conditions is sufficient for a determining correspondence system, it does not constitute a definition of determining correspondence since, as it turns out, it is more than sufficient for such a system. The definition of determining correspondence is given in Section 202 of *The Nature Of Existence*. For the moment, however, we will focus our attention upon these initial three conditions.

4. The first condition is sufficient to generate an infinite series of sets of parts of A, since B will have a set of parts comprising a part which corresponds to C (which part, in accordance with McTaggart's system of notation, we shall call "B/C" - i.e., "that part of B which corresponds to C"), and a part which corresponds to B itself (which part we shall call "B!B"). C, in turn, will have a set of parts comprising a part, C!B, which corresponds to B, and a part, C!C, which corresponds to C itself. Now, since the parts B!B, B!C, C!C and C!B together make up a set of parts of A (which we will call a set of Secondary Parts of the First Grade), B and C will each have a further set of parts, the members of which will correspond to the members of this last set of parts of A. Thus we will have, in B, a part B!B!B which corresponds to B!B, a part B!B!C which corresponds to B!C, a part B!C!C which corresponds to C!C, and a part B!C!B which corresponds to C!B; and these parts together will make up a set of parts of B. Similarly, we will have, in C, a part C!C!C which corresponds to C!C, a part C!C!B which corresponds to C!B, a part C!B!B which corresponds to B!B, and a part
C!B!C which corresponds to B!C; and these parts together will form a set of parts of C. Again, these latter two sets of parts of B and C will, when taken together, form a set of parts of A - which set we shall call a set of Secondary Parts of the Second Grade. B and C will each have a further set of parts corresponding to this last set of parts of A; and so on to infinity.

It is clear, then, that, by applying the principle embodied in condition (1), an infinite series of sets of parts of A is generated. But it is not clear that an infinite series of sequent sets of parts is thus generated. And it is an infinite series of sequent sets of parts of A that is required if the theory of Determining Correspondence is to solve the contradiction of infinite divisibility. It is true that the set of Secondary Parts of the First Grade, {B!B,B!C,C!B,C!C}, is sequent to the set of Primary Parts {B,C}, since, in accordance with the definition of sequent sets of parts given in Section 181 of The Nature Of Existence, no part in the former set contains more than one part in the latter, while at least one part in the latter set contains more than one part in the former. But the same relation does not obviously hold between the set of Secondary Parts of the Second Grade and the set of Secondary Parts of the First Grade. It would seem to be possible, for example, that B!B!C should fall within both B!B and B!C - hence that the set of parts of A comprising the Secondary Parts of the Second Grade should be neither precedent nor sequent to the set of parts comprising the Secondary Parts of the First Grade. Furthermore, in Section 198 of The Nature Of Existence, McTaggart describes the sets of parts generated by the principle of correspondence as being "higher" or "lower" than each other, rather than as being precedent or sequent to
each other; and this is the only place where he does use the former pair of terms to describe the order among the sets of parts. Now we may speak of the set of Secondary Parts of the First Grade as being "higher" than the set of Secondary Parts of the Second Grade in the sense that there are more parts of $A$ contained in the latter set than are contained in the former set. But, as we have seen, this does not imply that the latter set is sequent to the former set.

5. Fortunately, the soundness of the principle is saved by the introduction of the third condition. This condition ensures that each "lower" set of parts generated by the principle of correspondence is sequent to the next "highest"; and it does this in the following way.

Let us consider, once again, the two sets of parts of $A$ comprising the Secondary Parts of the First Grade and the Secondary Parts of the Second Grade. Consider the parts $BIB$ and $BIBIC$ - the first belonging to the former set of parts, and the second belonging to the latter set of parts. In order for the latter set of parts to be sequent to the former we must show that $BIBIC$ (or any other member of that set) does not fall within more than one part in the former set. And we can establish this once we have accepted the third condition. For, if we accept this condition, it follows that, since $BIC$, which is the determinant of $BIBIC$, is a part of $B$, then any part determined by $BIC$, e.g. $BIBIC$, is a part of a part determined by $B$ - i.e. $BIB$. Thus $BIBIC$ must be a part of $BIB$. It cannot be a part of $BIC$, since $BIC$ is determined by $C$. By applying this condition to the other members of the set of Secondary Parts of the Second Grade we can show that no part in that set can fall within more than one part in the set of Secondary Parts of the First Grade. We also know that at least one
part in the latter set, e.g. $B!B$, contains more than one part in the former, viz. $B!B!B$ and $B!B!C$. So, we may conclude that if the third condition holds, the principle of correspondence will generate an infinite series of sequent sets of parts within $A$.

The third condition is also essential, as McTaggart points out in Section 199, to ensure that every part of $A$ is determined in accordance with the principle of correspondence. It does this in the following way. Let us assume, for example, that $B!C$ is a part of $B$, and that $B!B!C$ is determined by $B!C$. Let us also assume that, contrary to the third condition, $B!B!C$ is not a part of a part determined by $B$. It must, then, be a part of the only other Secondary Part of the First Grade which is a part of $B$ — i.e., $B!C$. But in that case, as McTaggart points out in Section 199, it would be possible that the Secondary Parts of the Second Grade $B!B!C$, $B!C!C$, $B!C!B$, $C!C!C$, $C!C!B$ and $C!B!C$ should fall within the three Secondary Parts of the First Grade $B!C$, $C!C$ and $C!B$; while $B!B!B$ and $B!B$ should be one and the same part of $B$. The principle would, in that case, fail to determine an infinite number of parts within $B!B$ [$B!B!B$]. Hence it would fail to provide us with a satisfactory solution to the contradiction of infinite divisibility.

6. The first and third conditions are thus sufficient to generate an infinite series of sequent sets of parts within a substance. But if we are to provide a satisfactory solution to the contradiction of infinite divisibility we must be able to show that sufficient descriptions of each member of each of these sets of parts are implied by sufficient descriptions of the members of a certain set of
its parts, viz. the set of Primary Parts. This is why the second condition is essential to McTaggart's theory.

The second condition has two parts. The first states that the correspondence between the members of the various parts of $A$ must be of the same sort throughout, and that the relations between these members are "one-to-one" relations. The second states that the correspondence must be such that a certain sufficient description of a part, say $B$, of a substance (which description includes the fact that $B$ has this correspondence relation to some part of a substance, say $C$ [C may, of course, be identical with $B$], determines a sufficient description of the part of $C$, i.e. $CIB$, in question. I will consider each part of this condition in turn.

7. The first part appears to be straightforward. I have assumed that by a "one-to-one" relation McTaggart means what Russell meant by a "one-one" relation. A one-one relation was defined by Russell in the following way.

A relation is said to be "one-one" when, if $x$ has the relation in question to $y$, no other term $x'$ has the same relation to $y$, and $x$ does not have the same relation to any other term $y'$ other than $y$. When only the first of these two conditions is fulfilled, the relation is called "one-many"; when only the second is fulfilled, it is called "many-one".

Given that $B$ and $C$ make up a set of Primary Parts of $A$, then, in accordance with this condition, the correspondence between the members of this set of parts and the members of the set of Secondary
Parts of the First Grade, i.e. \{B!B, B!C, C!B, C!C\}, is such that there can be only one part of \(B\), \(B!B\), which corresponds to \(B\); one part of \(B\), \(B!C\), which corresponds to \(C\); one part of \(C\), \(C!C\), which corresponds to \(C\), and one part of \(C\), \(C!B\), which corresponds to \(B\). This condition is essential if we are to avoid the possibility that there should be, for example, two or more parts of \(B\) which correspond to \(C\). In that case, the relation of correspondence between \(C\) and the parts of \(B\) would be one-many (assuming that \(C\) is the determinant term in the relationship); and this, in turn, would allow for the possibility that there should be two or more parts describable as "\(B!C\)" - i.e., as "the part of \(B\) which corresponds to \(C\)". These parts could not, therefore, have sufficient descriptions determined by the principle of correspondence alone. In this case the theory of Determining Correspondence would not necessarily provide us with a principle which implied sufficient descriptions of each member of each set of an infinite series of sequent sets of parts of the substance \(A\).

8. The second part is, perhaps, less straightforward. But it is essential that we understand it clearly if we are to understand how the correspondence system determines sufficient descriptions of the members of the sets of parts. The condition is that a certain sufficient description, \(\phi\), of a part, \(C\), which description includes the fact that \(C\) is in this relation to some part of a substance \(B\) (which may be identical with \(C\)), with a sufficient description, \(\psi\), will determine a sufficient description of the part of \(B\) in question, viz. \(B!C\). We may understand the sufficient description of \(C\) to be a compound characteristic comprising the general qualities \(U, V\) and \(W\) -
where \( W \) is the relational quality of being the determinant of the one-to-one correspondence relation, \( R \).

There are two important points to note about this condition. The first is that both the referent and the relatum of the relation mentioned in the relational quality, \( W \), must have sufficient descriptions which are fixed independently of their position in the determining correspondence system; otherwise we will be faced with a vicious circle in which the members of sequent sets of parts will be sufficiently described by means of sufficient descriptions of the members of the set of Primary Parts which, in turn, can only be sufficiently described by means of the members of the sequent sets of parts.

The second point is that the correspondence relation between any two parts of a substance is understood to be a particular instance or occurrence of the general kind of relation. The failure to appreciate this fact has led Broad, for example, to make the following unjustified criticism.

R itself is not (as McTaggart mistakenly says) assumed to be a one-one relation. What is assumed is the following series of propositions. (1) \( R \), with its co-domain confined to \( a \) [a set of parts of \( A \)], is one-one, (2) \( R \) with its co-domain confined to \( R^"a \) [the parts of the members of \( a \)] is one-one, (3) \( R \) with its co-domain confined to \( R^"R^"a \) [the parts of the part of the members of \( a \)] is one-one, and ... so on.
Once we accept that the correspondence relations in question are particular instances of the general kind, the supposed inaccuracy is removed from McTaggart's statement.

Now, given that the determinant or referent, \( C \), has the sufficient description, \( \varnothing \), which includes the relational quality \( W \), it follows, according to the second condition, that the determinate term or relatum, \( BIC \), has a sufficient description in virtue of the fact that it is thus related to \( C \). The correspondence relation thus determines a sufficient description, \( \Theta \), of the part in question, \( BIC \). Similarly, given that \( BIC \) has a sufficient description determined in this way, and given that the correspondence relation holds between \( BIC \) and any determinate of \( BIC \), we may conclude that \( BIBIC \), for example, will also have a sufficient description in virtue of the fact that it is the relatum of a particular instance of the determining correspondence relation of which \( BIC \) is the referent.

9. There is, however, a certain ambiguity in McTaggart's statement of this condition. This was noted by Broad, and concerns the precise nature of the sufficient description \( \Theta \), determined in \( BIC \). As Broad points out, it is not clear whether \( \Theta \) comprises any qualities apart from the relational quality of being the part of \( B \) which is the relatum of the determining correspondence relation which relates \( B \) and \( C \).

Does McTaggart mean that there is always some sufficient description of \( x/y \) which does not involve the fact that it is the R-correlate of \( y \)? If so, he ought to have said so. His examples in Chapter XXVI do not accord with this view of his
meaning. His view seems to be there that, if $C$ has a sufficient description, $BIC$ (i.e., the part of $B$ which perceives $C$) is sufficiently described as the part of $B$ which perceives the substance which has this sufficient description. If this be all the description of $BIC$ that is in view, assumption (vi) becomes trivial, so far as I can see. And it is certainly not meant to be trivial.¹ [Assumption (vi) is, in Broad's words (op.cit. p.329), "If some part of $x$ has the relation $R$ to $y$ then there is a sufficient description of $y$, which includes this fact about $y$, and implies a sufficient description of the part of $x$ in question."]

Broad is, I think, justified in drawing attention to this ambiguity in McTaggart's initial statement of the condition. But it is one thing to claim that there is always some sufficient description of $BIC$ which involves the fact that $BIC$ is the $R$-correlate of $C$. It is another thing to claim that the sufficient description involved only amounts to "the part of $B$ which perceives [i.e. which corresponds to] a substance $C$" - where $B$ and $C$ are understood to have the sufficient descriptions $\dagger$ and $\emptyset$ respectively; so that the description of $BIC$ amounts to "the part of a substance with the sufficient description $\dagger$, which corresponds to a substance with the sufficient description $\emptyset$". Yet Broad does not appear to have clearly distinguished these two claims. Obviously, the last description will be a sufficient description of $BIC$ given that each of the three stipulated determining correspondence conditions holds. But it does not follow that this is the only sufficient description which is determined by the fact that $BIC$ is the $R$-correlate of $C$. The
nature of the sufficient description of $BIC$ determined by the fact that it is the $R$-correlate of $C$ will depend upon the specific kind or determinate form of the \textit{determinable} determining correspondence relation" which exists between the parts of $A$ - i.e. between $B$ and $C$ and their respective parts. It is an empirical question, as McTaggart points out in Chapter 26 of \textit{The Nature Of Existence}, what kind of determining correspondence does exist between the parts of the Universe; and it is impossible to decide, \textit{a priori}, the precise extent to which the nature of any determinate part of the Universe is determined by determining correspondence.

We have seen that from a sufficient description of $C[B]$, which includes the fact that $C$ is in the relation $X$ to some part of $B$, there follows a sufficient description of $BIC$. But can we go further, and say that there is implied in this sufficient description of $C[B]$, not only a sufficient description of $BIC$, but the whole nature of $BIC$? Or, on the other hand, is it possible that $BIC$ should have qualities which were not in any way implied in this sufficient description of $C[B]$?

The question now naturally arises whether we are able to discover what relation of determining correspondence actually does occur in the universe. If we could show \textit{a priori} that there was only one relation which was a relation of determining correspondence, or only one whose occurrence was compatible with the other results which we have reached as to the nature of the existent, we should know that that relation does occur in the universe, and that it is the only relation of
determining correspondence which does occur. But I do not think that it is possible to show this \textit{a priori}. When, in Book V, we introduce considerations of an empirical nature, it will, I think, be possible to give good reasons for believing that there is a certain relation of determining correspondence which occurs in the universe, and which is the only one which does occur. But, till then, the point must remain undetermined.\footnote{12}

In reply to Broad's criticism we may say, then, that assumption (vi), at least in the form originally expressed by McTaggart, does ensure that there is a sufficient description of any determinate term in a determining correspondence system, that this description is implied by the fact that it is a determinate term in that system, and that every such term will have a sufficient description of the form "the part of the only substance which is $\varnothing$ which corresponds to the only substance which is $\psi$" – where $\varnothing$ and $\psi$ are understood to be sufficient descriptions of substances\footnote{13}. But this does not preclude the possibility that every such term will have a more extensive sufficient description determined by the fact that it is a term in the determining correspondence system. Nor does it preclude the possibility that the entire nature of the term is determined by this fact\footnote{14}. Assumption (vi) might appear trivial in the sense that the kind of sufficient description mentioned above is implied by this assumption. But it is not trivial if it is a necessary condition in order that a determining correspondence system should avoid the contradiction of infinite divisibility discussed in the previous chapter. And it is not trivial if the specific kind of determining correspondence relation which does relate the parts of the Universe
is such that the entire nature, or even a significant part of the
nature, of any determinate term forms a part, or even the whole, of
the sufficient description of that term which is determined by the
fact that it is a determinate term in that system. We might add that
the extent to which the nature of any determinate term is determined
by the fact that it is a determinate term in a determining
correspondence system determines, in turn, the closeness of the unity
among the parts of the Universe — a theme which we will take up in
the next chapter.

10. Having considered those conditions which are sufficient for a
determining correspondence system we are now in a position to
understand McTaggart's definitions of the important terms in his
theory. These definitions are to be found in Section 202 of The
Nature Of Existence, and are as follows.

A Primary Whole is (1) a substance such that it is not necessary,
in order to describe sufficiently any of its parts, to introduce any
determining correspondence with anything except another of its parts;
(2) a substance such that it is not necessary to introduce
determining correspondence with any of its parts to describe
sufficiently any substance outside it; and (3) a substance such that
it has no part of which the previous clauses, (1) and (2) are both
true.

A Primary Part is defined in the following way.

When a set of parts of a substance is such that none of its
members are determined by determining correspondence, and that,
from sufficient descriptions of all its members, there follow,
by determining correspondence, sufficient descriptions of the members of an infinite series of sequent sets, then the members of that set are called Primary Parts.

Any member of a set of parts which is sequent to the set of Primary Parts of a substance is a *Secondary Part* of that substance.

If it is directly determined by determining correspondence with a primary part, it is called a secondary part of the First Grade. If it is directly determined by determining correspondence with a secondary part of the first grade, it is called a secondary part of the Second Grade, and so on.

11. McTaggart’s proposed solution to the contradiction of infinite divisibility consists, then, in the claim that the Universe is either a Primary Whole, or a group of Primary Wholes – i.e., that it has a set of parts sufficient descriptions of the members of which imply sufficient descriptions of the members of an infinite series of sets of parts which are sequent to the set of Primary Parts.

We have seen that this condition can be satisfied if the Universe is a determining correspondence system; and we have considered three conditions which, according to McTaggart, are sufficient to generate such a system. But these initial three conditions are, in fact, more than sufficient to generate a determining correspondence system; and, in Section 201 of *The Nature Of Existence*, McTaggart revises these conditions in three ways.

Firstly, he points out that it is not necessary that every Primary Part should have a set of parts corresponding to every set of parts.
of a Primary Whole. It is sufficient if each Primary Part has what McTaggart calls a Differentiating Group consisting of two or more Primary Parts of a Primary Whole. Let us assume, for example, that a Primary Whole, A, has three Primary Parts, B, C, and D. A determining correspondence system can be generated among the parts of A if the following conditions hold: (i) B has a set of parts corresponding to B and C, and to the parts of the members of a set of parts of B and C; (ii) C has a set of parts corresponding to C and D and their parts; (iii) D has a set of parts corresponding to D and B and their parts. Nor is it essential that a Primary Part should belong to its own differentiating group. B, for example, might only have parts corresponding to the members of the sets of parts of C and D. The set of Secondary Parts of the First Grade in B would, in that case, comprise B!C and B!D, and there would be no part, B!B, in that set of parts.

Secondly, it is not necessary that every Primary Part should be a determinant of parts within other Primary Parts of a Primary Whole. For example, B and C, in our group of Primary Parts, may each have parts corresponding to each other, but not with D; while D may have parts corresponding to the parts of B and C, but no parts corresponding to D itself. In this case A would have, as a set of Secondary Parts of the First Grade, the set \{B!B,B!C,C!C,C!B,D!B,D!C\}, and D as such would not figure as a determinant of any of these parts, or of the members of any sequent set of parts of A.

Thirdly, it is possible that, in place of a differentiating group consisting of two or more Primary Parts, some Primary Parts may have their parts determined by correspondence to only one other Primary
Part. $D$, for example, might have its parts determined by $B$ and the members of its set of parts alone. But in that case, $D$ could not have a set of Secondary Parts of the First Grade. $DIB$, for example, would be the only member of such a set, and it would, in that case, be identical with $D$ itself. But it would have a set of Secondary Parts of the Second Grade corresponding to the members of the set of Secondary Parts of the First Grade in $B$. Assuming that the differentiating group of $B$ is $B$ and $C$, we would then have the set of Secondary Parts of the Second Grade in $D$ comprising $DIB1B$, $DIB1C$, $DIC1C$, and $DIC1B$ - which would be the 'highest' set of parts of $D$.

12. Having stated the 'relaxed' conditions for a determining correspondence system, we may now consider McTaggart's definition of a determining correspondence system. This definition is to be found in Section 202 of *The Nature Of Existence*.

A relation between a substance $C$ and the part of a substance $B$ is a relation of determining correspondence if a certain sufficient description of $C$, which includes the fact that it is in that relation to some part of $B$, (1) intrinsically determines a sufficient description of the part of $B$ in question, $B1C$, and (2) intrinsically determines sufficient descriptions of each member of a set of parts of $B1C$, and of each member of a set of each of such members, and so on to infinity."

He then adds that, if the second part of the definition is to be satisfied, the following three conditions must apply.
(3) The sufficient description of \( C \) must include the fact that each member of a set of \( C \)'s parts has some substance to which it stands in a relation of determining correspondence, as the part of \( B \) does to \( C \) itself.

(4) Either \( B \) and \( C \) form a reciprocally determining group, or a part of a reciprocally determining group; or else, each is determined, either directly or indirectly, by a determining correspondence relation to substances which are members of a reciprocally determining group.

(5) When one determinant is part of another determinant, then any part determined by the first is a part of a part determined by the second.

Condition (5) is, of course, the third condition given in the initial account of conditions sufficient for a determining correspondence system. And we have seen that it is required to ensure that each member of a set of parts of a substance is itself determined in accordance with the principle of Determining Correspondence.

Conditions (3) and (4), again, are required to ensure that the second condition contained in the definition is satisfied; and, although they do not form part of the definition of a determining correspondence relation they are, together with condition (5), necessary if the theory of Determining Correspondence is to avoid the contradiction of infinite divisibility.

13. I have outlined what I consider to be the essential features of McTaggart's theory of Determining Correspondence. I will now
consider some criticisms which have been raised against the theory. With the exception of a brief, and quite misleading, discussion of the theory in Geach's Truth, Love And Immortality, critical discussion has been confined primarily to the work of Broad and John Wisdom. Broad's discussions can be found, initially, in his Critical Notice of Volume I of The Nature Of Existence, and subsequently in his Examination. Wisdom's discussion is to be found in an article which appeared in Mind in 1928, with the title "McTaggart's Determining Correspondence Of Substance: A Refutation". The comments of both these critics are comprehensive and informative, and I shall consider each in turn.

14. In his Critical Notice of The Nature Of Existence, Broad's criticism of the theory of Determining Correspondence essentially consists in the suggestion that the contradiction of infinite divisibility might be solved in a way which does not appeal to the principle of Determining Correspondence. The suggestion is this.

It has struck me (I am probably wrong) that all his requirements would be equally well fulfilled if every substance were (or were correlated with) an ordinary extensive magnitude like a straight line. Take a straight line AB. Bisect it; it consists of the set of parts AX, XB. Bisect these in turn; they consist respectively of the sets AY, YX, and XZ, ZB. The four are a new set of parts of AB. This process of bisection can be continued ad infinitum. Moreover, any part in this infinite series of sets of parts has a simple sufficient description. It can be described as, e.g., the $m$th member of the $n$th successive
bisection of AB. If then there exists any sufficient description $\varnothing$ of AB it would seem that every part in this infinite series could be sufficiently described as, e.g., the $m$th member of the $n$th successive bisection of the substance with the property $\varnothing$. Is anything more than this needed, and if so, why precisely?

We might illustrate this example in the following way [Figure 6.1].

![Figure 6.1](image)

Now there are a number of reasons for doubting that such an example can avoid the contradiction of infinite divisibility, and we will consider some of these when we consider Broad's refinement of the example in his *Examination*. The most obvious reply, however, is that it does not give us sufficient descriptions of the members of any of the sets of parts, much less imply them. Let us consider, for example, the set of parts formed by the initial bisection of the line. Broad has named these parts "AX" and "XB". But unless "A", "X", and "B" are considered to be logically proper names of points on the line there is no way of distinguishing AX from XB. Each can rightly be described as the second (or the first) member of the first bisection of the substance which has the sufficient description $\varnothing$. Hence the descriptions in question generated by the process of...
bisection are neither exclusive nor sufficient descriptions of the parts of the line. And if "A", "X" and "B" are logically proper names, then, insofar as they do enter into the resultant descriptions of the members of any set of parts of the line, the descriptions will not be sufficient — although they might be exclusive — since they introduce undescribed substances. This is, I believe, a conclusive objection to Broad’s example. There are other objections, based upon McTaggart’s views, as found in Chapter 34 of *The Nature Of Existence*, on the nature of space and spatial discrimination. But for present purposes the above objection is an adequate reply to Broad.

We may note, at this stage, that Broad’s suggestion for avoiding the contradiction of infinite divisibility is more or less endorsed by Wisdom as the “Serial Method”. Wisdom does attempt to anticipate the kind of reply which I have made to Broad by suggesting that a serial order among the parts of $AB$ can generate sufficient descriptions of those parts providing that a relation such as *from the left* is included in the descriptions. In other words, we must introduce some transitive asymmetrical relation between the members of any particular set of parts of $AB$ if the Serial Method is to provide us with sufficient descriptions of those members. Unfortunately, it is clear that there is no such *intrinsic* relation between the parts of a spatially ordered whole such as $AB$. Any such serial order must be extrinsic to, or imposed upon, these parts and the whole, $AB$, which they make up. And this implies that sufficient descriptions of the members of the various sets of parts of the line can only be given either by introducing some relation to a substance distinct from the line itself, or by introducing non-spatial characteristics of the line into those descriptions. It only makes
sense, for example, to speak of "left" and "right" in relation to
some observer of the line; and even then the resultant descriptions
would not necessarily be exclusive, since every member of a set of
parts of $AB$ could be described as being both "to the left of" and "to
the right of" one and the same part of the line - depending upon the
point of view of the observer. And if the descriptions are not
exclusive, they cannot be sufficient. Furthermore, if it is necessary
to include the fact that $AB$ is observed by - i.e., is related to -
some substance other than $AB$ itself in order to determine sufficient
descriptions of the members of the sets of parts of $AB$, then $AB$
cannot be a Primary Whole. Nor is it clear that the sufficient
description $\emptyset$ would, in case the serial order is extrinsic to the
parts of $AB$, imply sufficient descriptions of the members of an
infinite series of sequent sets of parts of $AB$. And if $\emptyset$ does not
imply such descriptions, then the example in question will not
provide us with a solution to the contradiction of infinite
divisibility.

15. I think that Broad did eventually realise the inadequacy of
the above proposal as a solution to the contradiction of infinite
divisibility; for, in his subsequent treatment of the subject in
Chapter 21 of his *Examination* he attempts to overcome the type of
objection which I have raised by revising his example so as to
include non-spatial characteristics in the sufficient descriptions of
the spatial whole $AB$.

In the revised example we are asked to consider, once again, a
finite straight line, $P$, between two points in space, $A$ and $B$. Again,
this line has a sufficient description, $\emptyset$, which does not involve any
reference to any of the parts of $P$. $\emptyset$ might be, to use Broad's example, "the longest line in the only country which is ruled by a government of class-conscious proletarians". The line is also, once again, initially divided into two parts, $AX$ and $XB$. But this time these two parts are to have non-spatial qualities which differentiate them. $AX$ is red, and $XB$ is blue. $AX$ may be called "$P_1$", and is sufficiently described as "the longest blue part of the line which is the only instance of $\emptyset$". $XB$ may be called "$P_2$", and is sufficiently described as "the longest blue part of the line which is the only instance of $\emptyset$". $P_1$ and $P_2$ form a set of parts of $P$ which we shall call $P$.

Now, let us halve both $P_1$ and $P_2$ to obtain another set of parts of $P$, $P'$, comprising $AU, UX, XV$ and $VB$. These parts we shall call "$P_{11}$", "$P_{12}$", "$P_{13}$", and "$P_{14}$" respectively. $P'$ is thus sequent to $P$; and, by continuing this process of division we can obtain an infinite number of sequent sets of parts of $P$. These sets of parts, ordered in terms of the relations of precedence and sequence, may be said to form a Fundamental Hierarchy in $P$, and may be illustrated by the following diagram [Figure 6.2].

Broad makes two claims for this example.

My illustration, if valid at all, is important as a refutation of two essential doctrines in McTaggart's philosophy. (i) In my example the problem is solved in a way which is different from that which McTaggart alleges to be the only way of fulfilling the conditions. For, as I shall explain later, the hierarchy which we obtain by my method is not a determining correspondence hierarchy in McTaggart's sense. (ii) My method
Neither of these claims, I shall now argue, is justified.

16. Let us consider, firstly, the claim that the above example provides a solution to the contradiction of infinite divisibility. To avoid this contradiction it is essential that sufficient descriptions of the members of a set of $P$'s parts should imply sufficient descriptions of each member of an infinite series of sequent sets of parts of $P$. According to Broad, this condition is fulfilled in the following way.

Take $P_{11}$. This can be exclusively described as the half of $P$, which is co-terminous with both $P_1$ and $P$. On substituting in this the sufficient descriptions of $P_1$ and $P$, we shall get a

\[
\begin{array}{cccc}
| P & P_1 & P_2 & P^1 \\
| P_{11} & P_{112} & P_{12} & P_{21} & P_{22} & P^2 \\
| P_{111} & P_{112} & P_{121} & P_{122} & P_{211} & P_{212} & P_{221} & P_{222} & P^3 \\
| A & U & X & V & B \\
\end{array}
\]

Figure 6.2

solves the problem for the case of a spatially extended particular."
sufficient description of $P_{11}$. $P_{11}$ will be sufficiently describable as "that half of the longest red part of the line which is the only instance of $\varnothing$ which is co-terminous both with the longest blue part of this line and with the longest red part of it". $P_{11}$ can be exclusively described as the half of $P_1$ which is co-terminous with $P_1$ but not with $P_1$. This exclusive description can be made into a sufficient description by the same means as before. In the same way, mutatis mutandis, $P_{11}$ and $P_{11}$, the remaining members of $P'$, could be sufficiently described in terms of the sufficient descriptions of $P$ and $P_1$.

Now consider a member of $P^2$, e.g., $P_{111}$. This can be exclusively described as that half of $P_{11}$ which is co-terminous with both $P_{11}$ and $P_{11}$. Since $P_{11}$ and $P_{11}$ have already been sufficiently described in terms of the sufficient descriptions of $P$ and $P_1$, we can get a sufficient description of $P_{111}$ by substituting these sufficient descriptions of $P_{11}$ and $P_{11}$ in the above exclusive description. And so $P_{111}$ will be sufficiently described in terms of the sufficient descriptions of $P$ and $P_1$.

It is quite clear that in this way any member of any term in the series could be sufficiently described; that the descriptions would involve six and only six characteristics, viz., $\varnothing$, red, blue, longest, half of, and co-terminous with; and that the derivation follows a general rule. Thus the series illustrated in the diagram would be a Fundamental Hierarchy for the line $P$. So the first condition is fulfilled in this way. 

17. There are a number of reasons why this example fails to satisfy McTaggart's condition of implication. The first is that Broad
has not, I think, distinguished two senses in which a description, $\emptyset$, might be said to imply sufficient descriptions of each member of each set of parts of a substance. In the first sense, which we might call the \textit{analytic} sense, $\emptyset$ might be said to imply such descriptions only insofar as it implicitly or explicitly \textit{includes} such descriptions. For example, "$\emptyset$" might be the name of a compound characteristic comprising the characteristics $A, B$ and $C$ - where $A, B$ and $C$ are sufficient descriptions. And if we assume that $A, B$ and $C$ are sufficient descriptions of the members of a set of parts of a substance with the sufficient description, $\emptyset$, then $\emptyset$ might be said to imply these descriptions in much the same way that the description of a substance as "chequered" implies that at least two of its parts have contrasting colour descriptions.

In the second sense, which we might call the \textit{synthetic} sense, a description, $\emptyset$, of a substance might be said to imply sufficient descriptions of each part of that substance only insofar as it does \textit{not} include these descriptions among its parts or elements. It is in this sense that the characteristic of being coloured implies the characteristic of being spatially extended.

Now, I would maintain that, in Broad's example, the description of $AX$ and $XB$ as "the longest red part of the line which is the only instance of $\emptyset$", and as "the longest blue part of the line which is the only instance of $\emptyset$", respectively, imply sufficient descriptions of the members of each of the sets of parts of $AB$ in the analytic sense only - i.e., in the sense that they implicitly include such descriptions among their parts or elements. I would also maintain that we are able to derive such descriptions in accordance with a general rule only because the sufficient descriptions of the members
of any set of parts imply sufficient descriptions of the members of any precedent set of parts. In other words, the initial descriptions of $AX$ and $XB$ imply that there are sufficient descriptions of the members of each of their sets of parts without directly implying the determinate nature of any particular part. That is to say, the initial descriptions presuppose sufficient descriptions of the members of any sequent sets of parts. But in the case of an infinitely divisible substance, such as the line $AB$, the fact that the nature of that substance presupposes sufficient descriptions of the members of any set of its parts leads to a contradiction, as McTaggart has pointed out in Sections 189-191 of *The Nature Of Existence*.

18. I would further suggest that Broad's proposed solution was more or less anticipated by McTaggart. In Section 356 of *The Nature Of Existence* we find the following points being made.

... it is clear that the spatial qualities of the members of a set of parts imply the spatial qualities of the whole of which they are a set of parts. If we know the shape and size of each one of a set of parts of $A$, and their position relatively to each other, we know the size and shape of $A$.... On the other hand, the size, shape, and position of the whole implies that it has parts which have size, shape, and position – for otherwise it could not be divided into parts in respect of its spatial dimensions. And if it does not also imply what the size, shape, and position of these parts are, it presupposes them. We shall thus have an infinite series of terms, in which
the subsequent terms imply the precedent, while the precedent presuppose the subsequent. And, as was shown in Section 191, such a series will involve a contradiction, since every term in it will have a presupposition, and yet will have no total ultimate presupposition.

The conclusion to be drawn, then, is that unless the parts of a spatial whole are differentiated by characteristics which are other than spatial, then the nature of that whole presupposes sufficient descriptions of these parts - and this, as we have seen, leads to a contradiction. So, unless each of the parts of $AB$ are differentiated by non-spatial characteristics, $AB$ will presuppose, rather than imply, such descriptions. But as we have assumed that only two parts of $AB$, viz. $AX$ and $XB$, are differentiated by non-spatial characteristics, we must conclude that $AB$ does presuppose sufficient descriptions of the members of each of its sets of parts which are sequent to the set $\{AX, XB\}$. And since it presupposes these descriptions, it cannot imply them. Hence, Broad's example fails to satisfy McTaggart's condition of implication.

19. There is a further problem with Broad's example. The example involves the assumption that the substance $P$ (i.e., the line $AB$) is spatially extended, that it has a spatial dimension. Now it is essential, if a series of sufficient descriptions of all its parts is to be generated, that it have only one dimension - i.e., it must have length but no breadth. If it has breadth as well as length, then any member of the hierarchy of sets of parts of $P$ will be divisible through each of two different dimensions; and, while Broad's example
might provide sufficient descriptions of the parts of $P$ which make up one dimension, viz. length, it will not provide sufficient descriptions of those parts of $P$ which make up another dimension, viz. breadth. Unfortunately, the fact that $P_1$ and $P_2$ are coloured, and the fact that these colours enter into their sufficient descriptions, as well as into the sufficient descriptions of the members of all sequent sets of parts of $P$ - e.g. $P^1$, $P^2$, and $P^3$ - implies that $P$ must have both length and breadth. Colour, as Broad himself points out elsewhere”, is an extensible quality; and any substance which has such an extensible quality must occupy at least two dimensions - i.e. it must have an area. However, since Broad’s method provides sufficient descriptions of the parts of $P$ throughout only one dimension, it fails to provide sufficient descriptions of all the parts of $P$. It therefore fails to provide us with an example which satisfies McTaggart’s condition of implication.

It might be suggested that, even though $P$ has an infinite number of parts in one dimension, the fact that these parts have an area does not imply that they are not sufficiently describable unless they are divisible throughout that other dimension. Now, this suggestion might seem plausible if that other dimension of $P$ were other than a spatial dimension. But this is not the case with $P$, since the second dimension which it occupies is a spatial dimension; and if it is infinitely divisible throughout one spatial dimension, it must be infinitely divisible throughout the other.

Finally, it might be suggested that any coloured substance must be made up, not of infinitely divisible coloured areas, but of finite, indivisible, coloured areas. But this suggestion is contrary to the
initial hypothesis that $P$ is infinitely divisible, and that it has an infinite number of parts.

20. Insofar as Broad's example fails to provide us with a means of determining sufficient descriptions of the members of an infinite number of sequent sets of parts of a spatially extended substance such as $P$, it also fails to provide us with a solution to the contradiction of infinite divisibility in the case of a material substance - since it is generally acknowledged that a substance which lacked size and shape, i.e. which lacked at least two spatial dimensions, could not be a material substance.

21. In addition to the above general objection to Broad's example, we may suggest another; this time one which is based upon a suggestion of McTaggart's own. I do not wish to place too much weight upon this objection, since it is based upon what is perhaps a rather contentious view of spatial discrimination; and I do not think that it is either possible, or necessary, to defend this view at this stage. It does, however, give us an indication of how McTaggart himself might have replied to the kind of example proposed by Broad.

In Section 360 of *The Nature Of Existence* McTaggart makes the following claim concerning the discrimination of spatial, hence of material, substances.

I submit that it belongs to the nature of space that nothing spatial can be discriminated from anything else, in respect of its spatial qualities, except by means of descriptions of its parts. A description of the whole which does not describe it by
means of descriptions of its parts will not discriminate it from other spaces.

If we accept this principle—and McTaggart does attempt to defend it—then it is, I think, obvious why there cannot be a solution to the contradiction of infinite divisibility in the case of a spatially extended substance. The reason is this. Consider, once again, the line $AB$, which we shall call "P". Since $P$ is a substance its nature requires, in the sense explained in the previous chapter, sufficient descriptions of each member of each of its sets of parts. Now, if it requires these descriptions it must either supply them—i.e., either include or imply them—or else it must presuppose them. But since we have assumed that any spatial whole can only be discriminated—i.e. be sufficiently described—by means of sufficient descriptions of the members of a set of its parts, it follows that the nature of any spatial whole must presuppose sufficient descriptions of each member of an infinite series of sets of its parts. However, since there is no final set of parts—i.e. no set of parts of $P$ which has no sequent set of parts—the nature of $P$ will have a presupposition without having a total ultimate presupposition. We are then faced with the same contradiction concerning the total ultimate presupposition of a substance which McTaggart pointed out in Section 191, and which we discussed, and defended, in our previous chapter.

22. Apart from some minor revisions in the actual statement of the theory Broad does not offer any further criticisms of the principle of Determining Correspondence, and the remainder of Chapter 21 of his Examination is devoted to a restatement and explanation of the
theory. I have no serious objections to what is to be found in that chapter of Broad's work, apart from the proposed "Geometrical" alternative solution to the contradiction of infinite divisibility which we have just discussed. Given that the contradiction of infinite divisibility is a genuine contradiction - and I have argued in the previous chapter that it is a genuine contradiction - and given the assumptions upon which the theory is based, Broad is prepared to accept that the theory of Determining Correspondence is a genuine solution to that contradiction. In this respect I agree with him.

23. It is a different matter, however, when we consider John Wisdom's paper on the theory of Determining Correspondence. Like Broad's Examination, it was published after McTaggart's death. It received no response at that time, and has not been discussed since. It is not mentioned in Geach's book, and it receives only a passing mention in Broad's work'. In fact, Broad refers to the article only to say that he has ignored it when writing his own work. Like much of Wisdom's work, the paper is concise. Such concision should not, however, be equated with accuracy; and in a number of important respects Wisdom has, I shall argue, either misrepresented or misunderstood crucial stages in McTaggart's argument, with the result that his criticisms are, for the most part, irrelevant to McTaggart's actual theory.

Wisdom's paper may be divided into three sections - each distinguished by the manner in which it attempts to come to terms with McTaggart's theory. The first section (pp.414-420) is mainly exegetical. The remaining two sections are devoted to criticisms of
the theory and of the assumptions upon which it is based. These criticisms may be classified as either "constructive" or "destructive". The constructive criticisms, which occupy pages 420-423, amount to three alternative solutions to the contradiction of infinite divisibility. The destructive criticisms, which occupy the remaining pages of the article, profess to show that the arguments which McTaggart uses to establish his theory are either invalid, or unsound because based upon false premisses. In the following discussion I shall essentially be concerned with the first two sections of Wisdom's paper. The issues raised in the third section have, I believe, been adequately covered in previous chapters.

24. The theory of the Determining Correspondence of Substance is summarised by Wisdom, following McTaggart, in the statement that the Universe is a Primary Whole or a set of Primary Wholes". He then elaborates.

The conception of a Primary whole involves in its analysis the conception of a sub-set of one Set of Parts of a substance A, being what we will call 'representative' of another Set of Parts of A. Draw a square. Divide it by a line-
The two resultant parts of the square are a set of parts of the square: for they together make it up and have no common part—as Dr. Broad neatly says “they just fit together to make it up”. Call this set of parts of the square α. Draw two line across the first line. Then the square is divided into six bits. Call this set of the parts of the square β. The set β has many subsets, among which are the following: β', the two top bits, β', the two middle bits, β', the two bottom bits. Each of these sub-sets is ‘representative’ of α. For any one of them it is true both (1) that each of its members is a part of a different member of α, and (2) that each member of α has a part which is a member of the sub-set.... A sub-set, σ, of a set of parts, S₁, is ‘representative’ of a set of parts, S₂, if and only if both (i) each member of σ is a part of a different member of S₂, and (ii) each member of S₁ has a part which is a member of σ.

The concept of a Primary Whole is then defined by Wisdom in the following way.

A is a substance. Let A have a set of parts B, C, and below BC an endless series of sets of parts one below the other. Suppose that in any lower set of parts there are just so many sub-sets representative of B and C as there are members of the set above it. Let there be some relation R such that for each member of a higher set of parts there is just one sub-set representative of B, C, in the set of parts below it, to each member of which sub-
There is no doubt that McTaggart's theory can be summarized in the statement that the Universe has a set of Primary Parts - i.e., that it is either a Primary Whole or a group of Primary Wholes. A statement to that effect can be found in Section 206 of *The Nature Of Existence*; and we ourselves have summarized the theory in this way. But it is not clear that what Wisdom means by such a statement is the same as what McTaggart means by such a statement. And if we look closely at McTaggart's own views, it will, I think, become evident that what Wisdom understands to be the theory of Determining Correspondence is not quite the same as the theory which McTaggart actually held.

25. Let us begin by comparing some of the definitions which Wisdom provides, in the last of the above-quoted passages, with McTaggart's own definitions. In Note 2 on page 415 of his article Wisdom explains what he means by saying that one set of parts of a substance is "above" or "below" another set.

Say that $S_1$ is below $S_2$ if, and only if, any member of $S_1$ is part of one member of $S_2$ and no part of a member of $S_1$ is neither a member of $S_2$ nor a part of a member of $S_2$. In other words - if every member of a set of parts be split up in some (the same or different) way the resultant group is a second set of parts below the first. $S_1$ is immediately below $S_2$ if there is
no third set of parts below $S_1$ and above $S_i$. McTaggart uses 'below' differently, see *N.of E*, p.191."

Although Wisdom acknowledges that his definition of 'below' differs from McTaggart's\textsuperscript{33}, he nevertheless seems to think that the preposition 'below', when applied to a set of parts of a substance, is equivalent to the preposition 'sequent' when used in the same context by McTaggart. But this is not the case. According to McTaggart, a set of parts $S_1$ is sequent to another set $S_i$ if no member of $S_1$ falls within more than one member of $S_i$, while at least one member of $S_i$ contains more than one member of $S_1$. The relevant difference is that it is possible, according to McTaggart, for a part of a substance to be a member of two different sets of parts of that substance, even though one set is sequent to the other. Now, according to Wisdom's definition of "below", it is impossible for a member of the set of parts $S_i$, which is below the set of parts $S_1$, to be a member of $S_1$ - since $S_1$ is the result of every member of $S_i$ being divided in some way. Furthermore, it follows from Wisdom's definition of "below" that there can be only one set of parts which is \textit{immediately} below another set. A set of parts, $S_i$, is said to be immediately below a set of parts $S_1$ if there is no third set of parts below $S_i$ and above $S_1$. But according to McTaggart's definitions of "sequent" and "precedent", between any two sets of parts of a substance - one of which is sequent to the other - there will always be another set of parts which falls between them. The difference between the series of precedent and sequent sets of parts of a substance, and the series ordered by the relations \textit{above} and \textit{below} is, then, that the former is a \textit{compact} or \textit{dense} series, and the
latter is a discrete series. And this, as we shall presently see, is an important difference.

26. In Note 3, on page 415 of his article, Wisdom gives his interpretation of the concept of a sufficient description. A sufficient description, according to Wisdom, is "any predicate which happens to belong to only one thing and has no constituent which is a substance.

Thus "has R to a red thing" would at present be a sufficient description if at present there were only one red thing.

There are, however, two problems with this interpretation. The first is that, according to McTaggart, a description consists of characteristics - i.e., qualities and/or relations - as distinct from mere predicates. The view that a description consists of predicates may suggest that a description is, in some sense, a creature of language; and it is important, especially in view of D.M. Armstrong's recent attempt to defend a distinction between predicates and properties or characteristics, to emphasise this point.

The second problem is that McTaggart defines a sufficient description of a substance as an exclusive description - i.e., a description which applies to one and only one substance, is such that the substance is absolutely identified by that description, and which introduces no undescribed substances. Now, the example of a sufficient description given by Wisdom is doubly unsatisfactory. Firstly, it fails to satisfy Wisdom's own definition - since it has a constituent, viz, "red thing", which is, presumably a substance -
although it does not thereby fail to satisfy McTaggart's definition, since the substance is not undescribed. But it does fail to satisfy McTaggart's definition on two other counts. In the first place it is not an exclusive, hence not a sufficient description if there are, in fact, two or more entities which have the relation $R$ to a red thing— even if there is, in fact, only one red thing. In that case there would be at least two entities which satisfy the description "has $R$ to a red thing". The description could not, therefore, be exclusive; hence it could not be sufficient. Secondly, the description is not exclusive if there is a red thing which exists at some past or future moment of time, and which is numerically distinct from the red thing which exists at present. The point is that the description, as it stands and without the introduction of a temporal indexical, will not identify a substance absolutely if there is a red thing which exists at some other moment of time.

27. Turning our attention from these preliminary definitions, it is clear that the most important assertion contained in Wisdom's restatement of McTaggart's theory is the claim that the theory involves the concept of one sub-set of parts of a substance being 'representative' of another—specifically, that of a sub-set of a 'lower' or sequent set of parts being representative of the members of a 'higher' or precedent set.

Now the term "representation" does not occur in McTaggart's own account of the theory of Determining Correspondence. What, then, does Wisdom mean by this term? We might possibly elicit his meaning if we compare his analysis of the concept of a Primary Whole with the definition given by McTaggart. A Primary Whole is defined by
McTaggart as being a substance which satisfies the following three conditions.

(1) In order to describe sufficiently any of its parts it is not necessary to introduce determining correspondence with anything except another of its parts.

(2) In order to describe sufficiently any substance outside it, it is not necessary to introduce determining correspondence with any of its parts.

(3) It has no part which satisfies both of the above conditions.

We might summarize this definition by saying that a Primary Whole is, according to McTaggart, a *self-contained* determining correspondence system. But it is difficult to equate such a definition with that given by Wisdom. The concept of *representation*, which is involved in Wisdom's definition, is not explicitly involved in McTaggart's. On the other hand, it may be that the concept of representation is *implicitly* involved in McTaggart's definition. We have already outlined the main features of a determining correspondence system. Let us see, then, if Wisdom's concept of representation is implicitly involved in such a system. To do this, it will help if we attempt to give an account of Wisdom's concept of representation in McTaggart's terminology.

Consider, once again, the substance $A$, which is a square initially divided vertically to form a set of parts, $a$, comprising the parts $B$ and $C$. Let us then divide $A$ again by two horizontal lines. We will
then have another set of parts of $A$, $\beta$, comprising the parts $D,E,F,G,H,J$. $A$ is illustrated below [Figure 6.3].

![Figure 6.3](image)

The set of parts, $\beta$, is, in McTaggart's terminology, "sequent" to the set of parts, $\alpha$. It is also, in Wisdom's terminology, "lower" than $\alpha$. Now, in order for there to be a determining correspondence system among the parts of $A$ it is essential that there be a set of Primary Parts, the members of which have sufficient descriptions fixed independently of that system. Let us assume, then, that $B$ and $C$ make up a set of Primary Parts of $A$, and that they have the sufficient descriptions $\dagger$ and $\wp$ respectively.

It is also essential that there be a series of sets of parts of $B$, and a series of sets of parts of $C$, the members of which correspond to each set of parts of $A$. So, there must be a set of parts of $B$ the members of which stand in a one-one relation with the members of the set of Primary Parts \{B,C\}. Similarly, there must be a set of parts of $C$, the members of which stand in a one-one relation with the
members of the set of Primary Parts. The members of the set of parts of $B$, and the members of the set of parts of $C$, which correspond to the members of the set of Primary Parts must also make up a set of parts of $A$. So, we must have a set of parts of $B$, $\{B!B,B!C\}$, and a set of parts of $C$, $\{C!C,C!B\}$, which together make up the set of Secondary Parts of the First Grade of $A$, if the parts of $A$ are to form a determining correspondence system.

There is, however, nothing in the above diagram - which is analogous to that supplied by Wisdom - which allows us to represent the initial stages of the kind of hierarchy required by McTaggart's theory. If we are to give an accurate representation of such an hierarchy, the square $A$ must be divided, initially at least, in the manner shown below [Figure 6.4].

![Figure 6.4](image)

*B and $C$, we will assume, make up the set of Primary Parts of $A$. $D$ and $F$ will make up the set of parts of $B$. And $E$ and $G$ will make up a set of parts of $C$. If we are to have a determining correspondence system among these parts it is essential that $\{D,F\}$ be equivalent to*
and that \( \{E,G\} \) be equivalent to \( \{C!C,C!B\} \). Clearly, \( \{D,F\} \) will be a sub-set of parts of \( A \), as will the sets \( \{E,G\}, \{D,E\}, \{D,G\} \), \( \{E,F\} \) — although only \( \{D,F\} \) and \( \{F,G\} \) can be said to be ordered within the determining correspondence hierarchy. But the notion of a sub-set of parts is only relevant to McTaggart's theory insofar as that theory requires that there be a sub-set of parts of \( A \) which is, in turn, a set of parts of the Primary Part \( C \) — the members of which set correspond in the stipulated manner with the members of the set of Primary Parts of \( A \). How, then, if at all, does Wisdom's concept of representation enter into such an account of McTaggart's theory? The answer to this question, I suggest, is that it does not; and that the concept of representation is, in fact, irrelevant to an accurate account of the theory of Determining Correspondence.

Let us assume, once again, that \( A \) has two sets of parts, \( \{B,C\} \) and \( \{D,E,F,G\} \), as illustrated in Figure 6.4. Let \( \{B,C\} \) be called "\( S_1 \)"; and let \( \{D,E,F,G\} \) be called "\( S \)". Now, according to Wisdom's definition, the subset of \( S_2 \), \( \{D,E\} \), which we shall call "\( o \)", is representative of \( S_1 \) since (i) each member of \( o \) is a part of a different member of \( S_1 \); and (ii) each member of \( S_1 \) has a part which is a member of \( o \). And if \( A \) is to be a Primary Whole, then, according to Wisdom, the following conditions must be satisfied.

1. There must be an endless series of sets of parts of \( A \) 'below' \( S_1 \).
2. In any 'lower' set of parts of \( A \), e.g. \( S_2 \), there are just so many sub-sets representative of \( B \) and \( C \) as there are members of the set above it, i.e. \( S_1 \).
(3) There is a relation, $R$, such that, for each member of a higher set of parts, e.g. $S_1$, there is just one sub-set, e.g. $o$, which is representative of $S_1$ in the set of parts below it, to each member of which it has $\tilde{R}$, and to no other parts of $B,C$.

(4) $B$ and $C$ each have a sufficient description.

Given that 'below' is understood to mean 'sequent', the first condition is in accordance with McTaggart's theory.

The fourth condition, again, is in accordance with that theory. But what of the second and third conditions? Well, we know that there are two sub-sets of $S_1$ which are representative of $S_1$, viz. \{D,E\} and \{F,G\}. But we also know that there are two more sub-sets of $S_1$ which are representative of $S_1$, viz. \{E,F\} and \{D,G\}. These latter two sets are representative of $S_1$ since (i) each member of the sub-sets is part of a different member of $S_1$; and (ii) each member of $S_1$ has a part which is a member of each sub-set. So, $A$ cannot be an example of a Primary Whole, in Wisdom's sense, since it fails to satisfy the second of his conditions. And yet $A$ could satisfy the preliminary conditions for a Primary Whole in McTaggart's sense. The relevant difference lies in the fact that McTaggart stipulates that the parts which have the relation $\tilde{R}$ (i.e. the converse of the relation $R$) to $B$ and $C$ must be members of sets of parts of $B$ and $C$, rather than members of sub-sets of a set of parts of $A$. Initially, this difference may not seem important. But it does become important when we consider the relaxed conditions for a determining correspondence system. According to the relaxed conditions it is not essential that every Primary Part of a Primary Whole should be a determinant, i.e.
have the relation $R$ to the members of some other set of parts of $A$ in a determining correspondence system. According to Wisdom’s account, however, it is essential that every Primary Part should be a determinant. We might illustrate this difference in the following way.

Let us assume that, instead of only two Primary Parts, $B$ and $C$, $A$ has three Primary Parts, $B$, $C$, and $D$. Now, according to Wisdom, in order that $A$ should be a Primary Whole it is essential (i) that any set of parts ‘lower’ than $\{B, C, D\}$ have as many sub-sets representative of $\{B, C, D\}$ as there are members in the set of parts immediately above it; (ii) that there be a relation, $R$, such that for each of $B$, $C$, and $D$, there is only one sub-set representative of $\{B, C, D\}$ in the set of parts immediately below it, to each member of which it has the relation $\tilde{R}$, and to no other parts of $B$, $C$, or $D$.

In order for such an hierarchy to exist, there must be three sub-sets of $S_i$ - the set of parts immediately below $S_i$, the set of Primary Parts - which are representative of $\{B, C, D\}$, i.e. which have members which are parts of $B$, $C$, and $D$. That is, there must be three sub-sets of $S_i$, each of which contains three members, i.e. there must be nine members of $S_i$. In the first sub-set of $S_i$ we shall have three members, each of which has the relation $\tilde{R}$ to $B$. In the second sub-set of $S_i$ we shall have three members, each of which has the relation $\tilde{R}$ to $C$. And in the third sub-set of $S_i$ we shall have three members, each of which has the relation $\tilde{R}$ to $D$. I am sure that the kind of hierarchy which Wisdom has in mind here is the kind which might arise if every Primary Part of $A$ were a determinant. We should then have a hierarchy like this [Figure 6.5].
If we follow McTaggart's symbolism, and substitute "!" for "R", then we shall have the set of Primary Parts of \( A \), \( S_1 \), comprising \( B, C, \) and \( D \); and the set of parts immediately below it, \( S_2 \), comprising \( B\!B, B\!C, B\!D, C\!C, C\!B, C\!D, D\!D, D\!B, \) and \( D\!C \). In accordance with Wisdom's conditions we shall have three sub-sets of \( S_2 \), each representative of \( S_j \). In the first sub-set we shall have a part of \( B \) which has \( \tilde{R} \) to \( B \), a part of \( C \) which has \( \tilde{R} \) to \( B \), and a part of \( D \) which has \( \tilde{R} \) to \( B \). In the second sub-set we shall have a part of \( C \) which has \( \tilde{R} \) to \( C \), a part of \( B \) which has \( \tilde{R} \) to \( C \), and a part of \( D \) which has \( \tilde{R} \) to \( C \). In the third sub-set we shall have a part of \( D \) which has \( \tilde{R} \) to \( D \), a part of \( B \) which has \( \tilde{R} \) to \( D \), and a part of \( C \) which has \( \tilde{R} \) to \( D \). Let \( \tilde{R} \) be a determining correspondence relation, and we appear to have the preliminary requirements for a determining correspondence system among the parts of \( A \).
The important point is that, for Wisdom, if there are three Primary Parts which make up a Primary Whole, then there must be $3^2$ or nine members in the set of parts immediately below the set of Primary Parts - i.e., in the set of Secondary Parts of the First Grade. And this is so because every Primary Part must, according to Wisdom's account, be a determinant in the hierarchy - i.e., every Primary Part must have $R$ to the members of a sub-set of the set of parts immediately below the set of Primary Parts, which sub-set is representative of the set of Primary Parts. But this is not the case in McTaggart's actual theory in case the "relaxed" conditions for a determining correspondence system are fulfilled. For McTaggart it is possible that one of $B,C$ or $D$ should fail to be a determinant, as long as the other two parts form a reciprocally determining group, and as long as the members of the sets of parts of the Primary Part which is not a determinant correspond to, or are determinates of, these Primary Parts and/or the members of their respective sets of parts. So that, instead of the kind of hierarchy illustrated above, we could have one like that illustrated below [Figure 6.6], which contains only six members in the set of parts immediately below the set of Primary Parts.

The relevant criticism to make is that there is no way in which Wisdom's account of a determining correspondence system can allow for the possibility, illustrated below, that not every Primary Part of a Primary Whole is a determinant. This is a fundamental error in his restatement of McTaggart's theory; arising from his attempt to explain that theory in terms of the concept of representation - a concept which is not, as I suggested earlier, an essential feature of McTaggart's actual theory.
28. The next important step in Wisdom's account of McTaggart's theory involves the claim that "every Primary Quality is an Indicator". In Wisdom's terminology this amounts to the claim that, if a substance has the quality, \( Q \), of being a Primary Whole, then \( Q \) will indicate - i.e. imply without including - sufficient descriptions of each member of the infinite series of sequent sets of parts of that substance.

We must remember that '\( \emptyset \) is an indicator' means 'if \( \emptyset \) applies to anything, \( A \), then it indicates sufficient descriptions of an infinite hierarchy of parts of \( A \)'. Suppose that \( Q \) is a primary quality. Then "\( A \) has \( Q \)" is a proposition of the following form - "There is a set of sets of parts of \( A \), \( \Sigma \), and an item \( a \), in \( \Sigma \), and a relation \( R \), such that (1) taking any item in \( \Sigma \), \( \sigma_i \), then there is an item in \( \Sigma \), \( \sigma_i \), such that (a) each member of \( \sigma_i \) has \( R \) to each member of only one (a different) subset within..."
\( \sigma_1 \), which subset is representative of \( a \), and to no other parts of members of \( a \), and (b) each member of \( \sigma_i \) has \( R \) to some member of \( \sigma_i \); (2) each member of \( a \) has one or other of \( \downarrow_1, \downarrow_2, \ldots, \downarrow_n \) (where \( \downarrow_1, \ldots, \downarrow_n \) are sufficient descriptions)."^40

Again, in this step, we find the concept of representation playing an important role. And, once again, it serves to misrepresent McTaggart's actual views. Let us assume that, only if a substance is what McTaggart calls a "Primary Whole" can it avoid the contradiction of infinite divisibility. Let us also agree with Wisdom that the quality of being a Primary Whole may be called a "Primary Quality" (even though, as he notes on page 418, McTaggart does not, himself, talk of Primary Qualities in this sense); and, that only if a substance has a Primary Quality can it avoid the contradiction of infinite divisibility. We might also agree that a Primary Quality is a formal quality, in the sense that "to assert of a thing that it has a primary quality is to assert of it that it has a quality of a certain form."^41

Now, according to McTaggart's theory, the fact that a substance has the Primary Quality, \( Q \), implies that it has a set of parts - viz. the set of Primary Parts - sufficient descriptions of the members of which imply sufficient descriptions of the members of each sequent set of parts of that substance. Where McTaggart differs from Wisdom is that, for Wisdom, it is the Primary Quality \( Q \), itself, which implies sufficient descriptions of the members of an infinite series of sets of parts of that substance. This is obvious from the following remarks.
This is the proof that every primary quality is an indicator.43

It is clear that (i) "Q applies to something" entails without including "something has q". And we will prove that (ii) q is a sufficient description.43

The relevant difference between Wisdom's theory and McTaggart's theory lies in the fact that q is a formal, or, more specifically, an ordinal characteristic; and that the quality Q, for Wisdom, only implies that the sufficient description q will apply to some part or other of the substance A. It does not imply what characteristics in addition to q the part of A in question will have. Moreover, Q cannot, by virtue of its merely formal nature, imply any characteristics of the substance other than q. And in this respect Wisdom's account again differs from McTaggart's actual theory. As we have seen, it is impossible, according to McTaggart, for all of the parts of a Primary Whole to have characteristics other than those determined by determining correspondence; and it is impossible that the entire nature of any part of a substance should consist in a single ordinal characteristic such as q.

29. I have argued that Wisdom's account of the theory of Determining Correspondence is erroneous in several important respects - specifically, those concerned with the concept of representation. But even if it is, in these respects, inaccurate, does it follow that it fails to provide a satisfactory solution to the contradiction of infinite divisibility? I will now argue that, even if we ignore these
inaccuracies, Wisdom's account still fails to provide us with a satisfactory solution to this contradiction.

30. The crucial section of Wisdom's account is obviously his attempt to prove that a Primary Quality of a substance is an \textit{indicator}, i.e. a quality which implies, without including, sufficient descriptions of each member of each set of parts of a substance. I shall quote the relevant passages from his paper in full.

We must remember that 'φ is an indicator' means 'if φ applies to anything, A, then it indicates sufficient descriptions of an infinite hierarchy of parts of A'. Suppose that Q is a primary quality. Then "A has Q" is a proposition of the following form - "There is a set of sets of parts of A, Σ, and an item a, in Σ, and a relation R, such that (1) taking any item in Σ, σ₁, then there is an item in Σ, σ₂, such that (a) each member of σ₁ has R to each member of only one (a different) subset within σ₂, which subset is representative of a, and to no other parts of members of a, and (b) each member of σ₂ has R to some member of σ₁; (2) each member of a has one or other of ψ₁, ψ₂ ... ψₙ (where ψ₁ ... ψₙ are sufficient descriptions)."

Now if A has such a set of sets of parts as Σ then there is an infinite hierarchy of parts of A, \textit{viz.}, Σ, such that in the case of any member x within that hierarchy there is a quality q, which applies to x and is such that (i) "Q applies to something" entails without including "q applies to something", and (ii) it is a sufficient description. For let x be any
member of the set of parts, $\beta$, within $\Sigma$, next below $\alpha$. The $x$ has the quality of being (a) $R$ to a thing which has $\psi_2$, and (b) a part of a thing which has $\psi_1$ ($\psi_1$ and $\psi_2$ may be the same). Call this compound quality $q$. It is clear that (i) "$Q$ applies to something" entails without including "something has $q$". And we will prove that (ii) $q$ is a sufficient description. It contains no part which is a substance; that is the first point. It applies to something, viz., $x$; that is the second point. It does not apply to more than one thing; that is the last point. The last point is true for: Suppose $y$ any thing other than $x$, then $q$ does not apply to it. For if (1) $y$ is not a part of a member of $\alpha$ it is not a part of a thing which has $\psi_2$: since $\psi_2$ is a sufficient description and therefore applies to nothing which is not the member of $\alpha$ to which it does apply.

Further, $x$ is a member of one sub-set within $\beta$ which sub-set is representative of $\alpha$, and $R$ is a relation which a member of a higher set of parts $\sigma_1$ in $\Sigma$ has only to members of one representative sub-set within the next lower set of parts $\sigma_2$. Hence, if (2) $y$ is a part of a member of $\alpha$ and is not a member of the same representative sub-set within $\beta$ as $x$ is, then $y$ has not got $R$ to the member of $\alpha$ to which $x$ has $R$. And therefore $y$ has not got the quality of "being $R$ to a thing which has $\psi_2$": for $\psi_2$ is a sufficient description of the member of $\alpha$ to which $x$ has $R$.

And if (3) $y$ is a member of the same representative sub-set as $x$ is, it is not a part of the same member of $\alpha$ as $x$ is: by definition of "representative". And therefore $y$ has not got the
The most important paragraph here is the first. But it is somewhat obscure, and so I will try to restate it in a more concrete way. Let us begin with the assumption that $A$ has a set of sets of parts $\Sigma$. In Wisdom's terminology this assumption amounts to the assumption that $A$ has a set of sets of parts which form a hierarchy in which any given member of $\Sigma$ is either directly above or directly below another member. Consider two members of $\Sigma$, $\alpha$ and $\beta$, where $\beta$ is directly below $\alpha$. Let us take a member, any member, of $\beta$ and call it "$x$". If $A$ is a Primary Whole, then according to Wisdom, it will have the quality $Q$, i.e. the quality of being a Primary Whole. Now, let us assume that $x$ has a quality, $q$, which is implied by the quality $Q$. Then, according to Wisdom, $q$ is a sufficient description of $x$.

He attempts to prove that $q$ is a sufficient description in the following way. Since $x$ is a member of $\beta$, and since $A$ is a Primary Whole, it follows, according to Wisdom, (i) that there is some member of $\alpha$ of which $x$ is a part; and (ii) that there is some member of $\alpha$ to which $x$ has the relation $R$. If we take (i) and (ii) together as being equivalent to the fact that $x$ has the compound quality, $q$, made up of the quality of being a part of a member of $\alpha$, and the quality of having the relation $R$ to some member of $\alpha$, then $q$, it is maintained, is a sufficient description of $x$. Before proceeding further we might illustrate the position we have reached in the argument by appealing to an example of a Primary Whole such as that given below [Figure 6.7].
The Primary Whole, $S$, has a set of Primary Parts, $a$, comprising $M$ and $N$; and a set of parts, $\beta$, comprising $B,C,D$, and $E$, directly 'below' $a$. Now it is clear, even at this stage, that $q$ is not a sufficient description of $x$, if $x$ is identical with $B$, since $q$ is a quality which, in the above form, applies to every member of $\beta$. Every member of $\beta$ has the quality (i) of being a part of a member of $a$, and (ii) of having the relation $R$ to some member of $a$.

31. Wisdom attempts to anticipate this objection by stipulating that each member of $a$ has one or the other of the sufficient descriptions $\psi_i$, $\psi_j$. But this will not help us significantly, since $q$ will then only amount to being the compound quality of being a part of a substance which is $\psi_i$ or $\psi_j$, and of having the relation $R$ to something which is either $\psi_i$ or $\psi_j$. And this quality, again, applies to every member of $\beta$. 
The only way in which $q$ can possibly be a sufficient description of $x$ is if it is stipulated which member of $\alpha$ it is a part of. But this is contrary to the initial assumption that $x$ can be any member of $\beta$; hence that it can be part of any member of $\alpha$. If $x$ is in fact a part of the member of $\alpha$ which is $\Psi_1$, then it will have a sufficient description. And if it is in fact a part of the member of $\alpha$ which is $\Psi_2$, then it will also have a sufficient description. But neither of these descriptions can be identical with $q$ since neither of them is implied by $Q$, the Primary Quality possessed by the Primary Whole, $S$. And unless these descriptions are implied by $Q$ we will not have a satisfactory solution to the contradiction of infinite divisibility.

Wisdom's attempt to prove that every Primary Quality is an indicator is, I suggest, fallacious. And it is fallacious in the following way. He has correctly concluded that, if $x$ is a member of $\beta$ it must have the quality of being a part of a thing which is $\Psi_1$, or a part of a thing which is $\Psi_2$. And this disjunctive quality is implied by $Q$. But $Q$ does not imply that $x$ has the quality of being a part of a member of $\alpha$ which is $\Psi_1$. Nor does it imply that $x$ has the quality of being a part of the member of $\alpha$ which is $\Psi_2$. But unless it does imply one or the other of these qualities in $x$, then $x$ is not sufficiently described. The fallacy is explicit in the following passage.

For let $x$ be any member of the set of parts, $\beta$, within $\Sigma$, next below $\alpha$. Then $x$ has the quality of being (a) $R$ to a thing which has $\Psi_1$, and (b) a part of a thing which has $\Psi_2$, ($\Psi_1$ and $\Psi_2$ may be the same).
Clearly, from the fact that \( x \) is a member of \( \beta \), we cannot infer that \( x \) has the quality of being a part of a thing which has \( \psi_{i,1} \), where \( \psi_{i,1} \) is a sufficient description of a member of \( \alpha \). The conjunct (\( b \)) should, in fact, be restated thus: (\( b' \)) part of a thing which has \( \psi_i \) or part of a thing which has \( \psi_j \). Since (\( b' \)) is a disjunctive quality it will apply to two members of \( \beta \), as will the quality (\( a \)). And since \( q \) is, \textit{ex hypothesi}, a compound quality made up of (\( a \)) and (\( b'' \)), it cannot be a sufficient description because it is not an exclusive description. Hence Wisdom's proof that \( q \) is a sufficient description, and that every Primary Quality is an indicator, is fallacious.

We may conclude, then, that even if we ignore the inaccuracies in his restatement of McTaggart's theory, Wisdom has not provided us with a sound alternative solution to the contradiction of infinite divisibility.

32. In the second section of his paper, Wisdom attempts to show that the contradiction of infinite divisibility can be solved in a manner which does not appeal to the principle of Determining Correspondence. He proposes three alternative solutions to the contradiction. The first, which he calls the "Serial Method", is simply a restatement and endorsement of the solution put forward by Broad; and it is subject to the same criticisms which we raised against that proposed solution earlier in this chapter.

The second of Wisdom's proposed solutions is called the "Method of Echoes". The suggestion is this. Let \( A \) be a substance which has a set of parts, \( a \), the members of which have the sufficient descriptions \( \varphi_i \ldots \varphi_i \). Below \( a \) there is a series of sets of parts of \( A \), \( \Sigma \), such that
Each member of the series is immediately below the precedent term. Each set of parts in $\Sigma$ has the quality, $\Psi$. There are two qualities, $\chi_i$ and $\chi_f$, which "echo down" the series.

... this means that if you take any set of parts $\sigma_1$, in the series and the set of parts $\sigma_2$ immediately below it and take $x$ any member of $\sigma_1$, and $y$ and $z$ the two members of $\sigma_2$ which are parts of $x$, then $y$ has $\chi_i$, and not $\chi_i$, and $z$ has $\chi_i$ and not $\chi_i$.

Let us express all this by saying that $A$ has an Echoing Quality.... Any echoing quality is an indicator. For any member $x$ of any set of parts in $\Sigma$ will have a quality such that (i) its application is entailed by the fact that something has $Q$, the echoing quality which $A$ has; and (ii) it is a sufficient description.

For let $x$ be any member of the set of parts, $\beta$, next below $\alpha$. Then $x$ has the compound quality $q$ of being (a) a part of the thing which has $\sigma_1$, (b) having $\chi_i$ (or, if not, $\chi_f$), and (c) being a member of the set of parts which has $\Psi$, and is next to the set of parts (viz., $\alpha$), described by $\sigma_1\ldots\sigma_4$. That $q$ applies to something is entailed by "$A$ has $Q$". Further if $Q$ is an echoing quality $q$ applies to only one thing. For any member of $\beta$ other than $x$ is either also a part of the member of $\alpha$ of which $x$ is a part or not. If it is it has $\chi_i$ and not $\chi_i$. If it is not it is not part of what has $\sigma_1$. Similarly, let $y$ be a member of $\gamma$ and a part of $x$. Then $y$ has the compound quality, $q'$, of (a) being a part of the thing which has $q$, and (b) having $\chi_i$ (or, if not, $\chi_f$), and (c) roughly, being a member of the second set of parts from $\alpha$ which has $\Psi$.\footnote{...}
33. The objection to this as a method of solving the contradiction of infinite divisibility is, it seems to me, quite obvious. The fact is that $q$, the quality of $x$ which is implied by $Q$, the echoing quality of $A$, is not a sufficient description of $x$. And there are two reasons why it is not a sufficient description of $x$. Firstly, $q$ is applicable to more than one member of $\beta$, the set of parts of $A$ of which $x$ is a member. And the reason why it is applicable to more than one member of $\beta$ is that, insofar as it is a quality of $x$ which is implied by $Q$, it is a disjunctive quality. Strictly speaking, $x$ has the quality $q'$ of (a) being a part of a thing which has $\psi_1$; (b') having $x_1$ or $x'_1$; (c) being a member of the set of parts of $A$ which has $\psi$, and is next to the set of parts whose members have the descriptions $\psi_1...\psi_n$. The important difference is the difference between (b) and (b'). The fact is that $Q$ implies the disjunctive quality (b'), but it does not imply which member of the disjunction $x$ in fact is. Rather, $Q$ presupposes that $x$ is $x_1$ or that it is $x'_1$ - whichever it, in fact, is. And unless $Q$ implies one or the other of these two qualities, $x$ will not have a sufficient description implied by $Q$. Hence $Q$ cannot be, in Wisdom's sense, an indicator; and if it is not an indicator, then the Method of Echoes will not provide us with a solution to the contradiction of infinite divisibility.

The second reason why $q$ is not a sufficient description of $x$ is that (c) can only be an exclusive description of a set of parts of $A$ if (i) the series, $\Sigma$, is a discrete, rather than a compact series; and (ii) every member of $\Sigma$ is either directly above, or directly below, some other member. Now, Wisdom makes both of these assumptions. There is, however, given the premiss that all substances are infinitely divisible, no reason to accept either. I have argued
earlier in this chapter that if "below" is equivalent to "sequent", then the series of sets of parts of any substance, when ordered in terms of the relations of precedence and sequence, is a compact series - i.e., between any two terms in the series there will always be another term. And if it is a compact series, then there will be no set of parts of A which can be exclusively described as "next below" some given set - in which case (c) cannot be either a sufficient or an exclusive description of a set of parts of A. Hence, q cannot be a sufficient description of x. Furthermore, even if the series of sets of parts of A were discrete, it would not follow that, for any two given sets of parts, one must be below or above the other. Consider the line AB below [Figure 6.8].

Let us assume that it has a set of parts \{AX, XB\}, and below that set two sets of parts \{AD, DX, XE, EB\} and \{AF, FX, XG, GB\}. Let us call the first set "S_1", and the two sets below \(S_1\), "S_2" and "S_3" respectively. Each of these last two sets is directly below \(S_1\), since there is, we will assume, no set of parts of A below \(S_1\) which has members which are parts of the members of \(S_1\), and which has fewer members than either \(S_1\) or \(S_2\). But neither \(S_1\) nor \(S_2\) is below the other. The description "the set of parts of A immediately below \(S_1\)" will thus apply to both \(S_2\) and \(S_3\). Hence it cannot be either an
exclusive or a sufficient description of a member of Σ, the series of sets of parts of AB. But unless it is either an exclusive or a sufficient description of a member of Σ, q cannot be a sufficient description of x.

Again, the Method of Echoes fails to provide us with a satisfactory solution to the contradiction of infinite divisibility.

34. The third of Wisdom's proposed solutions is called the "Method of Pointers". Wisdom, himself, chooses not to discuss the method in detail, and does not consider it to be an unconditionally valid solution to the contradiction. But for the sake of completeness we will consider it. The proposal is as follows.

Let A have a quality Q, of the form - "has as a part this which has \( \downarrow_1 \), and this which has \( \downarrow_2 \), and so on to "this which has \( \downarrow_n \). Where \( \downarrow_1 \ldots \downarrow_n \) each fix a sufficient description and together describe a hierarchy of parts of A. Let us express all this by saying that A has a Pointing Quality. (A pointing quality is not a Pointer as \( \downarrow_1 \ldots \downarrow_n \) are.)

The objection to this method is quite straightforward. Q supplies sufficient descriptions of each member of an infinite series of sets of parts of A only in the sense that it includes, without implying, each of the pointers \( \downarrow_1 \ldots \downarrow_n \). And each of these pointers must, if it is to directly imply a sufficient description, itself be a sufficient description - in which case the nature of A must either include without implying, or presuppose, sufficient descriptions of each of its infinite number of parts. If it includes without implying these
descriptions, then we will be faced with the contradiction concerning the concept of a Minimum Adequate Description described by McTaggart in Sections 193 to 194 of *The Nature Of Existence*. And if it presupposes sufficient descriptions of each of its infinite number of parts then we will be faced with the contradiction concerning the concept of a Total Ultimate Presupposition, described in Sections 189 to 192 of *The Nature Of Existence*.

35. We may conclude, then, that none of Wisdom's proposed methods can provide us with a satisfactory solution to the contradiction of infinite divisibility. Having argued that the theory of Determining Correspondence is essentially sound, and a genuine solution to the contradiction of infinite divisibility, we may now attempt to determine the kind of unity which a system of determining correspondence relations implies among the parts of the Universe. This will be the subject of our next chapter.

NOTES

3. There may be any number, finite or infinite, of parts in such a set.
4. In view of this fact, Geach's comment on page 129 of his *Truth, Love And Immortality*, that this terminology "does not remotely suggest the reality it is supposed to stand for", is rather unfortunate. Geach's whole discussion of the theory of Determining Correspondence is seriously misleading; and the above comment merely reflects the fact that he has not really understood the true nature of that theory. He mistakenly seems to equate the theory of Determining Correspondence with the
principle of Ontological Determinacy - which is a completely different principle.


6. They would be the same part of B since each contains the same content of B - which content is required to make up the set of Secondary Parts of the First Grade and the set of Secondary Parts of the Second Grade.

7. Russell, Introduction To Mathematical Philosophy, p.15. McTaggart was familiar with this work at the time of writing The Nature Of Existence. See, for example, Volume 1, p.132, Note 1.


10. That the determining correspondence relation is a determinable characteristic is stated in Section 418 of The Nature Of Existence.

11. McTaggart, The Nature Of Existence, §224. The letters in brackets indicate the original reading of the text. In agreement with A.E. Taylor ("Doctor McTaggart On The Nature Of Existence, p.158) I consider this reading to be erroneous. Where appropriate I have substituted "C" for "B".


13. Cf., The Nature Of Existence, §410:

This sufficient description of BIC will be "the perception by the only self which is UVW of the only self which is XYZ."


20. Aspects of the theory have recently been criticised by N.M.L. Nathan in "McTaggart's Immaterialism". I have considered these criticisms in "McTaggart's Immaterialism: A Reply To Nathan", Appendix 1 of this thesis.
21. As we shall see, his subsequent criticisms in the *Examination* amount to the same suggestion, albeit in a slightly revised form.


23. He acknowledges the basic flaw in Broad's example on page 421 of his article.

24. A Fundamental Hierarchy should be distinguished from McTaggart's concept of the Fundamental System. The Fundamental System is the classification of substances into Primary Wholes; Primary Parts; Secondary Parts of the First Grade; Secondary Parts of the Second Grade; and so on.


32. Wisdom, "McTaggart's Determining Correspondence Of Substance", p.415, Note 2.

33. McTaggart does not, in fact, use this term to describe the order among the sets of parts of a substance.


38. It is immaterial which of D or F is identical with BIC, and which is identical with BIB, as long as none is identical with both. Similar remarks apply to E and G.
40. Wisdom, "McTaggart's Determining Correspondence Of Substance", p.419.
41. Wisdom, "McTaggart's Determining Correspondence Of Substance", p. 418.
42. Wisdom, "McTaggart's Determining Correspondence Of Substance", p.418.
43. Wisdom, "McTaggart's Determining Correspondence Of Substance", p.419.
44. Wisdom, "McTaggart's Determining Correspondence Of Substance", pp.419-420.
45. Wisdom, "McTaggart's Determining Correspondence Of Substance", p.419.
46. Wisdom, "McTaggart's Determining Correspondence Of Substance", pp.421-422.
47. Wisdom, "McTaggart's Determining Correspondence Of Substance", p.422.
CHAPTER SEVEN

The Unity Of The Universe

1. We began this study with the claim that it is a task of the metaphysician to determine in what sense, if at all, the Universe is a genuine unity. In view of some of the conclusions which we have reached in previous chapters we can see that we are unable to give an unequivocal answer to this question. The Universe is a unity in a variety of senses - each distinct kind of unity being determined by the kinds of relations which exist among its parts. In the most fundamental sense we may say that the Universe is an aggregate of existents; and an aggregate, we have seen, is a kind of unity - a unity determined by relations of co-existence among entities. Our acceptance of the theory of the Determining Correspondence of Substance allows us to conclude, however, that the Universe is a much closer unity than a mere aggregate; and, indeed, that it is a much closer unity than our commonsense beliefs might suggest. In this final chapter we will attempt to reach some more definite conclusions about the kind of unity determined by a Determining Correspondence system; and about some of the more general ontological and cosmological conclusions which the existence of such a system implies.

2. In the previous chapter I suggested that there is a determinable characteristic of closeness which is predicable of certain kinds of unity. The closeness of a unity comprising two or
more entities is dependent upon the extent to which the natures of
the entities are intrinsically determined by the fact that they are
colleagues in such a unity. If we consider the unity of an
aggregate, for example, it seems clear that the natures of the terms
which make up an aggregate are, to a large extent, determined
independently of the fact that they are constituents of that
aggregate. On the other hand, the nature of a substance within a
determining correspondence system might be more or less completely
determined by the fact that it is a constituent within such a unity—
depending upon its position within the Fundamental System\(^1\). An
aggregate, accordingly, is not a very close unity. A determining
correspondence system, on the other hand, might be considered to be a
very close unity.

The closeness of a unity is thus determined independently of the
truth of the principle of Extrinsic Determination. As we saw in
Chapter Four, the principle of Extrinsic Determination allows us to
conclude that every quality of the existent is determined by every
other quality of the existent. That is to say, it allows us to
conclude that the principle of Universal Determinism is true. But the
truth of Universal Determinism is consistent with the view that the
Universe is not a very close unity, since the characteristics of the
existent need not, according to that principle, be determined by
intrinsic determination.

3. The factor of closeness is illustrated in McTaggart's
distinction, to which we referred in Chapter 2, between a unity of
composition and a unity of manifestation. A whole is considered to be
a unity of composition insofar as it is a compound of its parts; and
it is considered to be a unity of manifestation insofar as it is manifest in its parts. The distinction, according to McTaggart, involves a difference of emphasis or point of view. In the case of a unity of composition we are emphasising the diversity of the constituents. In the case of a unity of manifestation we are emphasising the unity which comprises them. But if the distinction is to have any objective validity it must amount to more than just a difference of emphasis. There must be an ontological basis for the distinction. And I do not see that McTaggart provides us with a satisfactory ontological basis. Having explained the concept of closeness, however, I would suggest that the distinction between a unity of composition and a unity of manifestation is essentially a distinction between degrees of closeness. A whole is a unity of manifestation insofar as the nature of each of its parts is, to some extent, intrinsically determined by the fact that it is a part of that whole. And a whole is a unity of composition insofar as the nature of each of its parts is determined, to some extent, independently of the fact that it is a part of that whole. Now, we know that the nature of every part of a whole is intrinsically determined to some extent by the fact that it is a part of that whole. Every part of a whole has, for example, the quality of being part of a whole with an exclusive description $\varnothing$ - where $\varnothing$ is an exclusive description of the whole in question. And this quality of the part is intrinsically determined by the fact that it is a part of that whole. Every whole is therefore a unity of manifestation.

Whether or not there are wholes which are not also unities of composition depends upon whether or not there are wholes wherein the entire nature of each member of a set of parts is intrinsically
determined by the fact that it is a part of that whole. And I think it is clear that it is impossible for there to be such a whole. In this sense, then, every whole is both a unity of composition and a unity of manifestation.

4. By explaining the distinction between unities of composition and unities of manifestation in terms of the factor of closeness we can, I think, escape Broad's charge that McTaggart's concepts of manifestation and organic unity are "completely trivial". Now, the claim that a concept or principle is trivial might be understood to mean either (i) that it is unimportant; or (ii) that it is uninteresting. But it does not entail that the concept has no application. And we have shown that the concept of manifestation does apply to every whole. The fact that it applies to every whole might render the concept uninteresting, but this does not mean that it is unimportant. Whether or not a concept is interesting depends upon the interests of the inquirer. Whether or not a concept is important is, I should think, determined independently of those interests. Clearly it is not unimportant to conclude that the nature of a part of a whole is, to some extent, intrinsically determined by the fact that it is a part of that whole. This conclusion, as we have seen, is an essential premiss in the argument for the theory of Determining Correspondence. Such a conclusion might not, however, be of great interest to the inquirer. What might be of interest is the extent to which the nature of the part is intrinsically determined by that fact. But this does not mean that the concept of manifestation, as such, is unimportant - only that it might be uninteresting.
5. Whether or not the concept of an organic unity is trivial depends upon what we mean by an "organic" unity. McTaggart's concept of an organic unity is derived from the principles of Extrinsic Determination and Manifestation. The principle of Extrinsic Determination allows us to conclude that the nature of every part of a whole is determined by the nature of every other part of that whole. The principle of Manifestation allows us to conclude that the nature of every part of a whole is, to some extent, intrinsically determined by the fact that it is a part of that whole. The relevance of these two principles to the concept of an organic unity is explained in Section 145 of *The Nature Of Existence*.

The interdependence [between the parts of a whole] is not more complete than before, but it is more positive. We no longer say only that, if one of the parts were different, the whole would be different, and we should have no ground for supposing that the other parts would remain. We say also that the parts have a common function to perform - the manifestation of the whole - and that, while each of them performs it in a different way, yet none could perform it unless the others were performing it also. To the idea of mutual indispensability is now added the more positive idea of mutual co-operation.

An organic unity is a unity of manifestation. In this respect it is like all other unities. Where an organic unity ostensibly differs from, say, an aggregate, is in the degree of closeness which it displays. This fact is not made explicit in the above passage, but it
is, I think, implicit in McTaggart's subsequent remarks about the kinds of unity which are generally considered to be "organic".

Now the essential feature of an organic unity is that the parts manifest the whole - that, since the whole as a unity is what it is, the parts must be what they are. This, as we have seen, is really the case with all wholes, and therefore all wholes are really organic unities. But their organic unity only becomes obvious when it becomes obvious that a set of parts only slightly different would be a manifestation of the nature of a whole which was different in some important characteristics. This is not the case with the heap of stones - the addition or subtraction of a stone, or the interchange of two of the stones, would make it a different whole, but not different in any important characteristics. But life and beauty are held by us to be important characteristics, and slight changes in the parts may destroy them. And thus it is obvious with wholes which are living or beautiful that the parts are manifestations of the nature of the whole, since different parts would be so obviously inconsistent with the whole being the same.5

The point which McTaggart seems to be making here is that every whole is an organic unity insofar as it is a unity of manifestation; and, that what are commonly acknowledged to be examples of organic unities, such as beautiful paintings or living creatures, differ from mere aggregates only because they are ostensibly closer - i.e., only because the natures of the constituent parts of such ostensibly
organic unities are intrinsically determined to a much greater and more obvious extent by the fact that they are constituents of those unities.

By characterising an organic unity in this way - i.e., in terms of the concept of manifestation - McTaggart is able to avoid problems about what kinds of unities are or are not genuinely organic. It allows him, for example, to classify ostensibly inanimate objects, such as certain works of art, along with ostensibly animate objects, such as human beings, as organic unities. On the other hand, by equating an organic unity with a unity of manifestation, we are obliged to consider unities, such as a heap of stones, as "organic" which do not ostensibly have any of the characteristics which are generally associated with that term. And this is, I think, the real basis for Broad's criticism that McTaggart's concept of an organic unity is trivial. If every whole is an organic unity, then the concept of an organic unity becomes, if not unimportant, then uninteresting.

6. The question I think we need to ask at this stage is whether there is some other characteristic which belongs to unities which are ostensibly organic, and which does not belong to unities, such as aggregates, which are not ostensibly organic. And the answer to this question is, I suggest, that unities which are ostensibly organic are ostensibly teleological unities. Now, the definitive characteristic of a teleological unity is that its constituents are related as means to an end. In the case of an organic unity, that end lies within or is identical with, the existence of the whole. An organic unity is
thus, in Kant’s sense, an instance of \textit{intrinsic finality}\textsuperscript{1} or intrinsic teleology.

The teleological character of an organic unity is, I think, implicitly acknowledged in McTaggart’s claim\textsuperscript{3} that the parts of an organic unity have a common \textit{function} to perform – namely, the manifestation of the whole. But in the case of some unities which McTaggart considers to be organic – such as a heap of stones – it is difficult to consider a teleological interpretation of the concept of manifestation to be anything other than metaphorical\textsuperscript{4}. For this reason it is, I believe, preferable to distinguish the concepts of \textit{manifestation} and \textit{organic unity}, and to use the latter term to refer only to unities which are, in fact, teleological.

The question whether the Universe, in addition to being a unity of manifestation, is also an organic unity, is not, I think, capable of being answered at this stage. Although our acceptance of the theory of Determining Correspondence allows us to conclude that the Universe is a much closer unity than a mere aggregate, we cannot, without determining the specific kind of determining correspondence relations which exist among its parts, decide whether or not the Universe, in addition to being a unity of manifestation, is also an organic unity. And we cannot determine the specific kind of determining correspondence relations which exist among the parts of the Universe independently of empirical considerations.

7. If our acceptance of the theory of Determining Correspondence does not allow us to conclude, \textit{a priori}, that the Universe is an organic unity, does it allow us to draw any further conclusions about the kind of unity which it displays?
The Universe, according to the theory of Determining Correspondence, is either a single Primary Whole, or a group of Primary Wholes. If the Universe is not a single Primary Whole, then any given Primary Whole will be a part of the Universe. It will be a unity within the Universe, rather than providing us with the unity of the Universe. Any group of Primary Wholes which make up the Universe we may call a Super-Primary Whole. The concept of a Super-Primary Whole is illustrated in the following figure [Figure 7.1]. In this case the Universe, \( A \), has a set of Primary Parts \( \{B,C,D,E\} \). These parts are divided among two Primary Wholes which have the sets of parts \( \{B,C\} \) and \( \{D,E\} \) respectively. Each of the members of these sets of parts, in turn, has a set of parts determined by determining correspondence. The members of the latter sets of parts form a set of Secondary Parts of the First Grade of \( A \). Thus we have two determining correspondence systems, or two Primary Wholes, within the Universe.

![Figure 7.1](image)

Clearly, if the Universe is a Primary Whole, then it will be a closer unity than if it is a Super-Primary Whole. But the question
whether the Universe is a Primary Whole, or a Super-Primary Whole is not, I think, capable of being decided a priori. In order to avoid the contradiction of infinite divisibility mentioned in Chapter 5 we must assume that the Universe has a set of parts, sufficient descriptions of which intrinsically determine sufficient descriptions of each member of each of its infinite number of sets of parts. But the theory of Determining Correspondence does not require that this set of parts - i.e., the set of Primary Parts - should be comprised by a single Primary Whole.

8. The fact that we are unable to determine, a priori, whether the Universe is a Primary Whole or whether it is a Super-Primary Whole, does not, however, prevent us from drawing conclusions about the kind of unity which it would have if it is, in fact, a Primary Whole. Some of these conclusions are discussed by McTaggart in Chapter 31 of *The Nature Of Existence*. The most important of these is that, under certain conditions, we would be entitled to conclude that the Universe is a self-reflecting unity.

The concept of a self-reflecting unity is derived from the concept of a self-representative system. A system \( R \) represents a system \( S \) if each member of \( S \) stands in a one-one relation with a member of \( R \). \( S \) is a self-representative system if \( R \) is either identical with, or a proper part, of \( S \).

The Universe will satisfy the requirements for a self-representative system if: (a) it is a single Primary Whole; (b) every Primary Part is a determinant; (c) the Differentiating Group of each Primary Part consists of every Primary Part of the Universe; and (d) the determining correspondence relations among its parts are of the
same kind. Let us assume that $S$ is a set of Primary Parts of the Universe, and that these Primary Parts are comprised by a single Primary Whole. Let us also assume that $R$ is the set of Secondary Parts of the First Grade. Then, if each part in $S$ is a determinant, each part in $R$ will have a set of parts, each member of which stands in a one-one relation with each part in $S$. Assuming that the one-one relations between the members of $R$ and $S$ are determining correspondence relations of the same kind, then the Universe satisfies the requirements for a self-representative system. In accordance with the principle which we introduced in Chapter 2, the occurrence of these relations between the members of $S$ and $R$ determines a unity which comprises them. This unity may appropriately be described as a "self-representative" unity.

9. Although the concept of a self-representative system has its more recent origins in the mathematical theories of Dedekind and Cantor, it is not, I would argue, a specifically mathematical concept. Leibniz' account of inter-monadic perception, for example, might be interpreted as a self-representative system. The definitive characteristic of perception, according to Leibniz, is not, as was held by Descartes, consciousness; it is, rather, the representation of a multiplicity in a unity.

14. The passing condition, which involves and represents multiplicity in the unit [unité] or in the simple substance, is nothing but what is called Perception, which is to be distinguished from Apperception or Consciousness, as will afterwards appear.11
The representation of a multiplicity within a unity is not, of course, in itself sufficient to constitute a self-representative system. We must also stipulate that the unit or \textit{monad} should represent every member of the system of which it is a part or constituent. In the case of a Leibnizian monad, the members of the system of which it is a constituent are the infinite number of monads or simple substances which make up the Universe. Leibniz' universe of monads is a self-representative system insofar as each monad within the Universe \textit{perceives} - i.e., represents within itself - the contemporary states of every monad within the Universe. The formal nature of such a self-representative system is admirably set out by Broad in the following passage.

Leibniz's general theory of representation may be expressed by the following symbolic scheme. Suppose that there was a set of \( n \) monads \( M_1, M_2, \ldots, M_n \). Let \( M_1 \) and \( M_2 \) be two typical monads of the set. Let us denote the total state of \( M_t \) at a certain moment \( t \) by \( m_{t,1} \), and the total state of \( M_t \) at the same moment by \( m_{t,2} \). Then in \( m_{1} \), there will be a certain factor \( m_{1,1} \) which corresponds to the contemporary total state \( m_{1} \) of \( M_t \). There will be a certain other feature \( m_{1,2} \) which corresponds to the contemporary total state \( m_{2} \) of \( M_t \). And so on for the rest. The same remarks will apply \textit{mutatis mutandis} to any other monad such as \( M_3 \). So we can write

\[
m_{1,1} = \phi, (m_{1,1}, m_{1,2}, \ldots, m_{1,n}, \ldots, m_{1,1})
\]

\[
m_{1,2} = \phi, (m_{1,1}, m_{1,2}, \ldots, m_{2,1}, \ldots, m_{1,1})
\]


with similar equations for each of the \( n \) monads. Here the letters \( \& \), \( £ \), etc. astride the bracket in each case represent the characteristic mode of combination in each monad of the various factors into a single total state. The whole history of the Monad \( M \), will be a continuous series of such total states as \( m^i \), producing each other without any influence from outside in accordance with the law of development which God impressed on the monad at its creation, and in consequence of the active force of appetition with which he endowed it.\(^{13} \)

Although such a system satisfies the conditions for a self-representative system, it differs from a system of determining correspondence in a number of respects. The most significant of these are: (1) the members of Leibniz’ system are simple substances; and, (2) there are no direct inter-monadic relations which determine the natures of the terms\(^{11} \) of the system. Unfortunately, these two points of difference are based upon principles which, in the course of our discussion in previous chapters, we have found reason to reject. In Chapter 3 we argued that there are no simple substances. And, in Chapters 5 and 6 we argued that the rejection of simple substances involves a contradiction, unless we assume that the content of the Universe forms a determining correspondence system – i.e., unless there are direct relations between the parts of the Universe which intrinsically determine, to some extent, the natures of those parts.

The absence of any direct inter-monadic relations implies that, although they may be said to be the elements of a self-representative system, the monads are not constituents of a self-representative
10. If the Universe is a Primary Whole, then it satisfies the conditions for a self-representative system. But it is a self-representative system in virtue of the fact that it is a system of determining correspondence. And this fact implies that each of its Primary Parts has a system of relations between the members of a set of its parts - the set of Secondary Parts of the First Grade - which is homologous to a system of relations between the members of the set of Primary Parts.

For the manner in which these secondary parts are determined by determining correspondence will depend for each of them upon three things - the fact that it is a secondary part of $B$ [i.e., a Primary Part], and of the first grade, the fact that the particular relation of determining correspondence is what it is, and the fact that the primary part which is its determinant has a certain nature. And the first two of the facts are, on our present assumption, the same for every secondary part of the first grade within $B$. All dissimilarities, therefore, between the determined sufficient descriptions of these secondary parts of $B$ must correspond to dissimilarities between the determinant sufficient descriptions of the primary parts, and all similarities which exist between some, but not all, of these sufficient descriptions of the secondary parts must correspond to similarities between some, but not all, of the sufficient descriptions of the primary parts. For such
dissimilarities and exclusive similarities cannot be determined by the two data which are the same for all the secondary parts in question, and must therefore be determined by the only datum which varies for the different secondary parts – that is, the various primary parts to which they correspond. Since the system of relations between B's secondary parts of the first grade will correspond in this way to the system of relations between the primary parts of the universe, it may be called homologous to it. Not only will the parts of B correspond to the parts of the universe, but some of the links which connect them together will correspond to some of the links which connect the primary parts together.16

The quality of having a set of parts, each member of which is homologous to the whole, we may call the quality of self-reflection. Any system which possesses this quality we may call a self-reflecting system, and the kind of unity determined by the relations between the members of such a system a self-reflecting unity. The difference between a self-representative unity and a self-reflecting unity might be summarised by saying that each part of a self-representative unity represents the whole, and that each part of a self-reflecting unity represents the nature of the whole.

In view of this distinction it might be suggested that the system of Leibnizian monads is more appropriately described as a self-reflecting system, than a self-representative system. There is, however, an important difference between the system of monads, and the system of determining correspondence of substance. This consists in the fact that the natures of the reflectant terms of a determining
correspondence system are intrinsically determined by the natures of the terms which they reflect'. And this implies that the system of determining correspondence is a much closer unity than the system of monads.

11. The assumption that the Universe is a self-reflecting system allows us to draw a further conclusion of importance. If we consider the members of the set of Primary Parts, not severally or in isolation, but in their existent relationships, then we will have the Universe as it is in itself. Similarly, if we consider the members of the set of Secondary Parts of the First Grade of any Primary Part in their existent relationships, then we will have that Primary Part as it is in itself. Now, insofar as the system of relations among the members of the set of Secondary Parts is homologous to the system of relations among the members of the set of Primary Parts, we may say that each Primary Part reflects the Universe as a whole; and that, insofar as the relations are determining correspondence relations, each Primary Part reflects the nature of the Universe as a whole.

We may conclude, then, that the Universe is a self-reflecting unity if the conditions (a) to (d), as set out in Section 8 of this chapter, are satisfied. But as McTaggart has argued in Chapter 31 of The Nature Of Existence, the fact that the Universe is a determining correspondence system is consistent with the denial of each and all of these conditions. Are there, then, any considerations, other than those of a strictly empirical kind, which, if taken into account, might give us reason to believe that the Universe is, in fact, a self-reflecting unity?
12. In the Introduction I argued that neither cosmological nor ontological knowledge can be reached by inductive reasoning. The presumption, then, was that genuine metaphysical knowledge is possible.

At this point, if, having reached certain conclusions about the nature of the Universe, we found that the truth of these conclusions is incompatible with the possibility of genuine metaphysical knowledge, we would be faced with a dilemma: either genuine metaphysical knowledge is not possible; or else the arguments which we have used to reach these conclusions are unsound. Now, the conclusion that genuine metaphysical knowledge is impossible is incompatible with the assumption that the arguments which we have used to reach that conclusion are sound, since some of the premisses of those arguments profess to be instances of genuine metaphysical knowledge. In general, we may say that any attempt to prove that genuine metaphysical knowledge is not possible cannot, as Bradley has argued\textsuperscript{11}, be based upon assumptions about the nature of reality.

The conclusions which we have reached, insofar as the arguments upon which they are based are sound, cannot, therefore, be incompatible with the possibility of genuine metaphysical knowledge. And if we take this fact into consideration, we can, I think, conclude that the conditions (a) to (d) listed in Section 8 of this chapter are satisfied, and that the Universe is, in fact, a self-reflecting unity. Any other conclusion, I would argue, is incompatible with the possibility of genuine metaphysical knowledge within a system of determining correspondence.
13. The claim that genuine metaphysical knowledge is possible might be understood to mean either (i) genuine ontological knowledge is possible; (ii) genuine cosmological knowledge is possible; or, (iii) both genuine ontological knowledge and genuine cosmological knowledge are possible. Clearly, if we can establish the conditions for both (i) and (ii), we will have established the conditions for (iii).

14. Let us consider, firstly, the conditions which are necessary for the possibility of ontological knowledge within a system of determining correspondence. Ontological knowledge is knowledge of a kind of characteristic, or of certain kinds of characteristics, which belong to all existents. In order for such knowledge to be possible it is essential that cognitive relations should exist between one existent and all existents. If we assume that the determining correspondence relations between the parts of the Universe within a Primary Whole are cognitive relations, then ontological knowledge is possible within a system of determining correspondence. But it is only possible if the Universe is a single Primary Whole, and not a Super-Primary Whole. The reason for this is that, in order for every part of the Universe to be cognised by some given part, every Primary Part must be both a determinant term of a determining correspondence relation, and have every Primary Part as a member of its Differentiating Group. And these two conditions, we have seen, can only be satisfied if the Universe is a single Primary Whole.

If we assume that the determining correspondence relations are cognitive relations, then we must also assume that these relations are of the same kind. The characteristics of all existents are, we
have argued, necessarily particular or item-specific. It follows that, if we are to have knowledge of a kind of characteristic, then such knowledge cannot be discursive - that is to say, it cannot consist in knowledge of abstract universal entities. Now, since we have assumed that there are only two general kinds of knowledge, the discursive and the intuitive, and since we have concluded that ontological knowledge can only be given by non-discursive knowledge, if genuine ontological knowledge is to be possible within a Primary Whole, then the cognitive relations between the parts within that whole must be of the non-discursive or perceptual kind. That is to say, the determining correspondence relations within the Primary Whole must be of the same kind throughout.

We have seen, then, that if genuine ontological knowledge is to be possible, then each of the conditions (a) to (d) for a self-reflecting system must be satisfied. The Universe must be a single Primary Whole; every Primary Part within that whole must be a determinant - i.e., every Primary Part must be an object of cognition; the Differentiating Group of each Primary Part must consist of every Primary Part, including itself; and, the determining correspondence relations must be of the same kind throughout the system. In other words, if genuine ontological knowledge is to be possible, then the Universe must be a self-reflecting system.

15. If we now consider the conditions for the possibility of genuine cosmological knowledge then we will see that such knowledge is possible only if the Universe is a self-reflecting unity.

Cosmological knowledge is knowledge of the Universe as a whole. Now, if we assume that the Universe is a Super-Primary Whole, and
that the determining correspondence relations within that whole are cognitive relations, then it is impossible for any proper part to have a cognitive relation to the whole. In order for any proper part to have a cognitive relation to the whole it is essential, as I argued in Sections 10 and 11 of this chapter, that the whole be reflected by that part. It is impossible, however, for the Universe to be reflected in any of its proper parts unless the following conditions are satisfied: (1) the Universe is a single Primary Whole; (2) the part in question is a Primary Part; (3) Every Primary Part is a determinant - i.e., is cognised by the part in question; (4) the Differentiating Group of the Primary Part consists of every Primary Part of the Universe; and (5) the cognitive relation is of the same kind throughout the system. That is to say, cosmological knowledge is possible within a determining correspondence system only if conditions (a) to (d) are satisfied, and the Universe is a self-reflecting unity.

16. Having established the conditions under which both ontological knowledge and cosmological knowledge are possible within a determining correspondence system, we have thereby established the conditions under which metaphysical knowledge is possible within such a system. We have shown that metaphysical knowledge is only possible within a determining correspondence system if the Universe is a self-reflecting unity.

But we have, I think, established more than this. We have shown that, insofar as metaphysical knowledge is possible within a determining correspondence system, then the Primary Parts of the Universe have a status which is not shared by any other parts within
that system. We have also established that the cognitive relations between the parts of the Universe can only be of the intuitive or perceptual kind. This implies that each Primary Part has a system of cognitive relations among its parts which is homologous with a system of relations among the Primary Parts themselves. And this is a characteristic which is not shared by the members of any other sets of parts within the Fundamental System.

17. Insofar as the Universe is a self-reflecting system, it is a much closer unity than is consistent with the kind of unity which our everyday beliefs or perceptions might lead us to conclude that it is. And this implies that there is a difference between the nature which the Universe appears to have, and the nature which it actually has. Although we are entitled to conclude that there is some difference between the appearance and the reality, I do not believe that it is possible, independently of empirical considerations, to determine the precise extent of the difference. What we can conclude, however, at this stage, is that the actual nature of the Universe must be consistent not only with the possibility of metaphysical knowledge, but with the possibility of there being a distinction between appearance and reality. And this consideration, I would argue, implies that selves or minds are among the fundamental parts of the Universe.

If we now consider the unique status of the Primary Parts within the determining correspondence system, and their significance for the possibility of metaphysical knowledge, then it seems to me that we are justified in identifying these minds or selves with the Primary Parts of the Universe. In which case we may conclude that the
Universe is a Primary Whole, the content of which is divided among a number of Primary Parts or minds, which perceive themselves, each other, and the Universe as a whole, and which perceive nothing apart from themselves, each other, and the Universe as a whole.

18. The conclusions which we have reached in this chapter are, as might have been expected, similar to McTaggart's own. But there are a number of significant points of difference. Even after taking empirical evidence into account, McTaggart is unable to provide any grounds for concluding that the Universe is a single Primary Whole, rather than a Super-Primary Whole. Hence, he is unable to provide any grounds for concluding that the Universe is a self-reflecting unity. The Universe, on our view, is thus a much closer unity than either our commonsense beliefs or McTaggart's metaphysics would suggest.

A related, but more significant point of difference is that, insofar as McTaggart allows for the possibility that the Universe is a Super-Primary Whole, as well as for the possibility that not every Primary Part is a determinant, he undermines two of the conditions which, we have argued, are essential for the possibility of metaphysical knowledge within a determining correspondence system. A metaphysical theory may provide us with grounds for believing that the world is other than it appears to be. But if its conclusions are incompatible with the possibility of our knowing that it is other than it appears to be, then, even though it may be a source of inspiration, it cannot be a source of conviction.
NOTES

1. The Fundamental System is a classification of the content of the Universe into Primary Wholes, Primary Parts, Secondary Parts of the First Grade, Secondary Parts of the Second Grade, and so on. See The Nature Of Existence, Chapter 28.


3. We should distinguish the proposition that there can be a whole wherein the entire nature of each member of a set of its parts is intrinsically determined by the fact that it is a part of that whole, from the proposition that there can be a whole wherein the entire natures of some members of a set of its parts are intrinsically determined by the fact that they are parts of that whole. The former proposition is, I would suggest, self-evidently false. The latter proposition might in fact be false; but it is not self-evidently false.


6. It is interesting to note that this is the view of an organic unity which McTaggart appears to have endorsed in the earlier Studies In Hegelian Cosmology [§196]:

196. My contention has been, so far, that it is useless and misleading to call any unity organic unless we are prepared to maintain that it (and not merely something at present contained in it) is an end to itself, and to its own parts. Otherwise we shall include among organic unities systems which exist as bare means for the carrying out of ends which are indifferent, or even hostile to the unity. To call such systems organic would be improper, in the first place, because that word has always been employed to denote a relatively close unity, while such a use would extend it to all unities whatever. Every aggregate of individuals which were not absolutely isolated from each other, and in which the connection was not reduced to the level of mere delusion, would be classed as organic.

McTaggart's use of the adjective "organic" in The Nature Of Existence to describe all unities of manifestation is, as he himself admits (§154), not "without its inconveniences". One such inconvenience is, as I have suggested, that it obliges us to classify any whole as an organic unity - thus rendering the concept of an organic unity uninteresting.


There is evidence to suggest that McTaggart, himself, did not adopt a genuinely teleological view of the concept of Manifestation. In his discussion of Hegel's views on teleology in the *Commentary On Hegel's Logic* [§258-261] he seems to implicitly endorse the view, which he finds in Hegel, that the categories of End and Means are not essentially teleological - in the normal sense. Means and End are not, according to Hegel, distinguishable entities. They are simply different aspects of one and the same entity - the End is the aspect of unity, and the Means the aspect of differentiation. The parts of an organic unity might, in this sense, be described as the means to an end - namely, the existence of the whole. And, in this sense, they might be said to thereby "fulfil the function" of manifesting the whole. But as McTaggart admits, such a view of teleology differs significantly from the commonly accepted view.

Hegel departs considerably from the common usage in the meaning which he gives to the terms Teleology, End, and Means. What is generally meant by Teleology is what Hegel calls "finite and outward design", in which some independently existing object is used by some self-conscious being as a means for carrying out some plan which he has conceived. In "outward design" the Means and the End can exist independently; for the End can exist in the mind of the designer, even if there are no available Means to carry it out, while the objects which are used as Means do not derive their entire existence from that use, but may have existed before the End was formed, and might still have existed, if the End had never been formed. [*A Commentary On Hegel's Logic*, §252]

10. The relations between the members of $S$ and the members of $R$ must, of course, belong to the same kind.

11. It might be argued that Dedekind, himself, did not consider it to be a specifically mathematical concept, since the example he gives of an infinite - i.e. self-representative - system is that of one's own realm of thoughts.

66. Theorem. There exist infinite systems.
Proof.* My own realm of thoughts, i.e., the totality $S$ of all things, which can be objects of my thought, is infinite. For if $s$ signifies an element of $S$, then is the thought $s'$, that $s$ can be object of my thought, itself an element of $S$. If we regard this as transform 0$(s)$ of the element $s$ then has the transformation 0 of $S$, thus determined, the property that the transform $S'$ is part of $S$; and $S'$ is certainly proper part of $S$, because there are elements in $S$ (e.g., my own ego) which are different from such thought $s'$ and therefore are not contained in $S'$. Finally it is clear that is $a,b$ are different elements of $S$, their transforms $a'$, $b'$ are also different, that therefore the transformation 0 is a distinct (similar) transformation (26). Hence $S$ is
infinite, which was to be proved. [Dedekind, Essays On The Theory Of Numbers, p.64.]

The metaphysical significance of this proof is highlighted in Josiah Royce's essay "The One, The Many, And The Infinite" - included as a supplementary essay in The World And The Individual, First Series.

13. Broad, Leibniz, p.95.

14. The natures of the monads are determined by God at the moment of their creation. Each successive state of the monad is completely determined by the preceding state in accordance with a general principle of immanent causation or appetition - which, in the self-conscious monads which Leibniz calls "souls", appears as a conscious striving. Although the states of each monad correspond to each other monad, the correspondence is determined by a pre-established harmony rather than a direct relation of causation or intrinsic determination.

15. This does not mean that the unities within the Universe, i.e., the monads, are not close. Insofar as each member of the infinite series of successive states of the monad is intrinsically determined by the preceding state, the unity of the monad might be said to be very close. The infinite complexity within each monad is not, however, an infinite complexity of parts, but an infinite complexity within its nature.

The plausibility of such a view ultimately depends upon the assumption that there are no incompatible simple characteristics predicable of a monad. But this assumption seems to be inconsistent with the assumption that some states of the monad precede others. If we assume that \( m' \), is the total state of a monad \( M_t \) at a moment of time, \( t \), then the characteristics of being precedent to \( m' \) and being preceded by \( m' \), are predicable of \( M_t \). But they also, presumably, incompatible characteristics - that is to say, they can only be true of different states of the monad, insofar as these states are among the monad's different parts, and not among its different characteristics.

17. The natures of the monads might be said to be intrinsically determined by the nature of their Creator, rather than the natures of the terms which they reflect.
18. F.H. Bradley, Appearance And Reality, Introduction. Whether or not any such attempt must, as Bradley argues, be based upon such assumptions, and is therefore self-defeating, is a question which I do not attempt to answer.
McTaggart's Immaterialism — A Reply To Nathan

1. In a paper entitled "McTaggart's Immaterialism", N.M.L. Nathan has argued that McTaggart's attempt to construct a mentalist or immaterialist metaphysic breaks down at a crucial stage in his theory of the Determining Correspondence of Substance. He states explicitly where he thinks McTaggart's argument breaks down, and then, rather than simply dismissing McTaggart's conclusion, claims to provide a better argument for immaterialism. In this reply to Nathan's article I will argue, firstly, that McTaggart's argument does not break down in the way in which Nathan claims that it does; and, secondly, that he has not provided us with a better immaterialist argument.

2. According to Nathan there are two premisses which are of central importance in McTaggart's theory of Determining Correspondence. The first is that substance is infinitely divisible or infinitely partitioned. The second is that the nature of a substance must imply, without including, sufficient descriptions of each of its infinitely numerous parts.

Nathan is prepared to accept the truth of the first premiss - given two assumptions. The first of these assumptions is that substances have a temporal dimension, and therefore have temporal parts. The second is that the terms of a series of temporal parts of a substance form a dense or compact series - according to which,
between any two terms of the series there is another term. He acknowledges, however, that these are not McTaggart's own reasons for accepting the principle that substance is infinitely divisible. We cannot, therefore, object to McTaggart's actual argument on the assumption that may involve the perhaps erroneous view that substances have a temporal dimension.

It is the second premiss, then, which, according to Nathan, marks the point at which the argument breaks down. This premiss involves two distinct principles. The first is that every substance, hence every part of every substance, has a sufficient description. The second is that the nature of a substance must imply, without including, such a description in each of its parts. Each of these two principles is discussed by Nathan. Again, he accepts the first, but rejects the second as probably false.

Since Nathan accepts the validity of the principle of sufficient descriptions I will not discuss that principle here. I believe that it is true, and that it can be demonstrated to be true. But for the sake of the present discussion I will simply assume that the principle is true.

3. This leaves us with the second principle— that the nature of a substance must imply, without including, sufficient descriptions of each of its infinitely numerous parts. Nathan criticizes this principle on two grounds. The first is that, even if we accept the principle as true, there are theories other than the theory of Determining Correspondence which satisfy the conditions which it imposes. The second is that the principle is not proven to be true by
McTaggart. I will now consider each of these criticisms and argue that they are unjustified.

4. Let us begin with the claim that McTaggart has not proven the principle to be true. Nathan does not make it entirely clear why he believes that McTaggart has failed to prove the principle. He seems to rely exclusively upon a criticism which he attributes to John Wisdom.

But, as Wisdom again saw, the trouble begins further back. McTaggart does not prove that the nature of an infinitely partitioned substance must imply rather than merely include sufficient descriptions of all its parts. McTaggart thought that if the nature of an infinitely partitioned substance merely included sufficient descriptions of its parts, then there would be no description of that substance which was adequate but no more than adequate for the purpose of giving sufficient descriptions of all its parts, no minimum adequate description for that purpose. And he took it as evident that given any description which is adequate for a certain purpose, there is a minimum adequate description for that purpose. But that principle seems evident only so long as we do not consider the case in which our purpose is to give sufficient descriptions of all the parts of an infinitely partitioned substance. Suppose that each part of an infinitely partitioned substance has a sufficient description. Then the whole substance will have a sufficient description, each element of which is a description of a description of a Set of Parts, and
each element of which is entailed by some further element consisting of a description of the parts of those parts. And then, of course, each element in the description is superfluous. If this seems odd, it is only because we are unconsciously setting our standards by cases in which there are only finite numbers of things to be described.

There are two things which ought to be taken into consideration when evaluating this criticism. The first is whether or not it provides us with an accurate account of McTaggart's actual argument. The second is whether, apart from the question of exegetical correctness, the line of criticism is itself consistent or cogent. It seems to me that Nathan's criticism fails on both counts.

In the first place, Nathan mentions only one of the arguments put forward by McTaggart to show that the nature of a substance must imply, without including, sufficient descriptions in each of its parts. There are, in fact, three distinct arguments which McTaggart uses to establish his conclusion. The first, which is to be found in Sections 189 to 191 of *The Nature of Existence*, is a general argument to show that the nature of a substance cannot presuppose sufficient descriptions in each of its infinitely numerous parts. The second, which is to be found in sections 192 to 193, and which does not profess to be conclusive, involves an appeal to the implausibility of the assumption that sufficient descriptions of each of the infinitely numerous parts of a substance can be determined independently of the fact that the parts have a particular place in the series of precedent and sequent sets of parts of the substance.
The third argument, which is discussed by Nathan, involves the concept of a Minimum Adequate Description, and is claimed to be conclusive. Now in order to understand this argument correctly it is essential that we understand the distinction which McTaggart draws between precedent and sequent sets of parts of a substance. To illustrate this distinction let us assume that we have two sets of parts, $S_1$ and $S_2$, of a substance, $A$. If no member of $S_1$ falls within more than one member of $S_2$, and if at least one member of $S_1$ contains two or more members of $S_2$, then $S_1$ is said to be sequent to $S_2$, and $S_2$ precedent to $S_1$. Let us assume, for example, that we have a square figure, $A$, which represents the substance $A$ [Figure 1].

Let us then divide $A$ into two halves, $B$ and $C$. $B$ and $C$ form a set of parts, $\{B,C\}$ of $A$, since, taken together, they make up $A$, and no more than make up $A$. Let us call this set of parts of $A$, $S_2$. Now if

![Figure 1](image_url)
we divide $C$ into two equal parts, $D$ and $E$, we will have a further set of parts of $A$, $\{B,D,E\}$. Let us call this set of parts of $A$, $S_1$. It follows that $S_1$ is sequent to $S_1$, since no member of $S_1$ falls within more than one member of $S_1$, and at least one member of $S_1$, namely $C$, contains more than one member of $S_1$; and, accordingly, that $S_1$ is precedent to $S_1$.

I have dwelt upon the nature of this distinction at some length because it is not a distinction which Nathan acknowledges in his exegesis; and yet it is, I would maintain, an essential feature both of McTaggart's argument to show that the nature of a substance must imply sufficient descriptions in each of its parts, and of his theory of Determining Correspondence.

5. Having considered the nature of the distinction between precedent and sequent sets of parts of a substance we are, I believe, in a better position to appreciate the cogency of McTaggart's argument. I will now give my own account of that argument.

To understand, firstly, the concept of a Minimum Adequate Description, we must understand that, according to McTaggart, a description of a substance can be either adequate, or more than adequate, for a particular purpose. For example, the description, "The only Australian state which is surrounded by water", is adequate for the purpose of providing an exclusive description of Tasmania. A minimum adequate description is a description which is adequate for a given purpose, but no more than adequate for that purpose - i.e. it does not include any characteristics which are superfluous for the given purpose. The description, "The only Australian state which is surrounded by water, and the only Australian state which lies to the
south of Victoria", is more than adequate for the purpose of exclusively describing Tasmania; and we can obtain a minimum adequate description for that purpose by omitting either of the conjuncts which make up that description.

The next step in the argument is to point out that, for every description which is adequate for a given purpose, there must be at least one minimum adequate description for that purpose. The latter will be either identical with the former, or else it will differ from it by the omission of those characteristics which are superfluous for the given purpose.

We are then asked to consider what could serve as a minimum adequate description for the purpose of providing sufficient descriptions of each member of the infinite number of precedent and sequent sets of parts of a substance. McTaggart argues that it cannot consist of sufficient descriptions of the members of any set of parts which is precedent to some other set of parts, since sufficient descriptions of the latter will imply sufficient descriptions of the former. Hence, sufficient descriptions of the members of the precedent set of parts are superfluous for the given purpose, and cannot form part of the minimum adequate description for that purpose. However, since we know that every set of parts is precedent to some other set, sufficient descriptions of the former will always be superfluous for the purpose, and cannot, for this reason, be included in the minimum adequate description. This implies that there cannot be a minimum adequate description for the purpose of providing sufficient descriptions of each member of the infinite number of sets of parts of a substance. But if we assume that the nature of a substance can include, without implying, these sufficient
descriptions, then there must be a description which is adequate for the purpose of providing such descriptions. Hence there must be a minimum adequate description for this purpose. And thus, as McTaggart points out, we have a contradiction.

6. In view of this account of McTaggart's argument it is difficult to see that Nathan's claim that McTaggart does not prove that the nature of an infinitely divisible substance must imply, rather than simply include, sufficient descriptions of each of its parts, is justified. The point of the argument which I have outlined above is that if we assume that the nature of a substance supplies sufficient descriptions of each of its parts by inclusion only, then we reach the contradictory conclusion that a substance must have, and yet cannot have, a minimum adequate description. McTaggart then concludes that since the nature of a substance can supply sufficient descriptions of each of its parts either by inclusion or by implication; and, since it cannot, as we have seen, supply them by inclusion only, it must imply them. The theory of the Determining Correspondence of Substance is McTaggart's explanation of the only way in which such descriptions can be supplied by implication.

It is equally difficult to justify Nathan's further claim that the principle of Minimum Adequate Descriptions is evident only so long as we do not consider the case in which our purpose is to give sufficient descriptions of all the parts of an infinitely divisible substance. It seems to me that this criticism simply misses the point of McTaggart's argument. We have agreed that every substance, hence every part of every substance, must have a sufficient description. And it is clear that any substance can be sufficiently described by
means of sufficient descriptions of the members of a set of its parts - namely, as that whole which is made up of the parts with those sufficient descriptions. It is also clear that a sufficient description of a substance which is made up of sufficient descriptions of the members of a set of parts of that substance will be adequate for the purpose of providing sufficient descriptions of each of those parts. Now such a description will either be adequate for that purpose, or more than adequate for that purpose. If it is adequate, but no more than adequate for that purpose, it will be a minimum adequate description for the purpose of providing sufficient descriptions of the members of a set of parts of the substance. Hence, every substance must have a minimum adequate description for the purpose of providing sufficient descriptions of the members of any set of its parts. And if it must have a minimum adequate description for that purpose, it follows that it must have a minimum adequate description for the purpose of providing sufficient descriptions of the members of each of its sets of parts. Every substance must, therefore, have a minimum adequate description for the purpose of providing sufficient descriptions of each of its parts. Whether or not the substance is infinitely divisible does not affect the validity of this principle.

A problem does arise, however, when we realise that the parts of an infinitely divisible substance can be ordered in terms of precedent and sequent sets of parts. Since every substance can be sufficiently described by means of sufficient descriptions of the members of a set of its parts, and since the sufficient descriptions of the members of a set of parts which is sequent to some other set imply sufficient descriptions of the members of the precedent set,
sufficient descriptions of the members of any set of parts of the
substance which is precedent to some other set will always be more
than adequate for the purpose of providing sufficient descriptions of
each of the parts of the substance - hence they cannot be included in
the minimum adequate description for that purpose. But if we accept
that every substance is infinitely divisible, it follows that every
set of parts is precedent to some other set of parts. Thus,
sufficient descriptions of the members of no set of parts can be
included in the minimum adequate description for that purpose. The
substance cannot, therefore, have a description which is adequate,
but no more than adequate, for the purpose of providing sufficient
descriptions of each of its parts - i.e. it cannot have a minimum
adequate description for that purpose.

The essential point of the above discussion is that the principle
of minimum adequate descriptions is valid independently of whether we
assume that a substance is infinitely divisible; and the cogency of
McTaggart's argument derives from the premiss that the sets of parts
of an infinitely divisible substance can be ordered in terms of
precedence and sequence. Unfortunately, this premiss is not discussed
in Nathan's paper. His exegesis and subsequent criticism of the
argument suffer, I would suggest, for this reason.

7. It might be pointed out that we reach a contradiction only if
we assume that the nature of a substance must supply sufficient
descriptions of each of its parts by inclusion only. And this is,
indeed, the conclusion which McTaggart claims we must reach. To avoid
this contradiction we must, therefore, assume that each substance has
a minimum adequate description, and that this description is capable
of supplying sufficient descriptions of the members of each of its sets of parts by implication, rather than by inclusion only. As McTaggart concludes in Section 194 of *The Nature of Existence*:

A chain of implications must run downwards from precedent sets to sequent sets, such that sufficient descriptions of the members of the precedent set imply sufficient descriptions of the members of the sequent sets. In this case the inclusion of the description of the precedent set will render inclusion of the descriptions of the sequent sets unnecessary, since they can be deduced from it. And thus the minimum adequate description of $A$ which is adequate for providing sufficient descriptions of all its parts will be the description of the precedent set, from which the chain of implications starts.

8. Having argued that McTaggart's argument to show that the nature of a substance must imply sufficient descriptions in each of its parts does not break down in the way in which Nathan claims it does, I will now consider the claim that there are theories other than the theory of Determining Correspondence which satisfy the condition of implication.

Nathan mentions two such theories. The first is a theory which he attributes to C.D. Broad. The second is John Wisdom's Method of Echoes. I will now consider each of these theories, and argue that neither ultimately satisfies the condition of implication.

9. Let us begin with Broad's theory. Although this theory is ultimately rejected by Nathan himself, an independent discussion of
the theory is, I believe, justified for two reasons. Firstly, Nathan's criticisms are based upon two principles, the revised principles of Infinite Partition and Sufficient Descriptions, which might not have been accepted by either Broad or McTaggart. And the failure to accept either or both of these revised principles would render those criticisms somewhat doubtful. Secondly, apart from Nathan's discussion, Broad's theory has not received any critical attention since it was originally published in 1933. An independent discussion of this theory might dispel any impression that, with this example, Broad has refuted McTaggart's theory.

Broad claims that McTaggart's condition of implication can be satisfied by an example which (a) is not a determining correspondence system; and (b) satisfies the condition in the case of a substance which has spatial and/or temporal dimensions - i.e., in the case of a material substance. The example we are asked to consider is that of a finite straight line, $AB$, which has a sufficient description, $\emptyset$, determined independently of sufficient descriptions of its parts. $AB$ is divided into two adjoining parts, $AX$ and $XB$. $AX$ is red, and $XB$ is blue. If we call these parts $P_1$ and $P_2$, respectively, then $P_1$ can be sufficiently described as "the longest red part of the line which is the only instance of $\emptyset$", and $P_2$ as "the longest blue part of the line which is the only instance of $\emptyset$". $P_1$ and $P_2$ make up a set of parts of $AB$, $P$.

Now we can get a series of sequent sets of parts of $P$ [i.e. $AB$] in the following way. $P'$ is to consist of the adjoined halves $AU$ and $UX$ of $P_1$ and the adjoined halves $XB$ and $VB$ of $P_2$. Call these respectively $P_{11}$, $P_{11}$, $P_{11}$, and $P_{22}$. Then $P'$ is the group of
which these are the only members. $P^1$ and subsequent sets will be constructed on precisely the same plan. We have now got an endless series of sequent sets of parts of $P$.\footnote{1}

Broad then claims that sufficient descriptions of the members of each sequent set of parts of $AB$ are implied by the sufficient descriptions of $P_1$ and $P_2$ in the following way.

Take $P_{11}$. This can be exclusively described as the half of $P$ which is co-terminous with both $P_1$ and $P_2$. On substituting in this the sufficient descriptions of $P_1$ and $P_2$ we shall get a sufficient description of $P_{11}$. $P_{11}$ will be sufficiently describable as "that half of the longest red part of the line which is the only instance of $\phi$ which is co-terminous both with the longest blue part of this line and with the longest red part of it". $P_{11}$ can be exclusively described as the half of $P$ which is co-terminous with $P_1$ but not with $P_2$. This exclusive description can be made into a sufficient description by the same means as before. In the same way, \textit{mutatis mutandis}, $P_{11}$ and $P_{11}$, the remaining members of $P^2$, could be sufficiently described in terms of the sufficient descriptions of $P_1$ and $P_2$. Now consider a member of $P^3$, e.g., $P_{111}$. This can be exclusively described as that half of $P_{11}$ which is co-terminous with both $P_{11}$ and $P_{11}$. Since $P_{11}$ and $P_{11}$ have already been sufficiently described in terms of the sufficient descriptions of $P_1$ and $P_2$, we can get a sufficient description of $P_{111}$ by substituting these sufficient descriptions of $P_{11}$ and $P_{11}$ in the above description. And so $P_{111}$ will be sufficiently described in terms
of the sufficient descriptions of $P_1$ and $P_2$. It is quite clear
that in this way any member of any term in the series could be
sufficiently described, that the descriptions would involve six
and only six characteristics, viz., $\emptyset$, red, blue, longest, half
of, and co-terminous with; and that the derivation follows a
general rule. 1

10. There are a number of reasons why this example fails to
satisfy McTaggart’s condition of implication. The first is that Broad
has not, I think, distinguished two senses in which a description, $\emptyset$,
might be said to imply sufficient descriptions of each member of each
set of parts of a substance. In the first sense, which we might call
the analytic sense, $\emptyset$ might be said to imply such descriptions only
insofar as it implicitly or explicitly includes such descriptions.
For example, "$\emptyset$" might be the name of a compound characteristic
comprising the characteristics $A, B,$ and $C$ – where $A, B,$ and $C$
are sufficient descriptions. And if we assume that $A, B,$ and $C$
are sufficient descriptions of the members of a set of parts of a
substance with the sufficient description, $\emptyset$, then $\emptyset$ might be said to
imply these descriptions of the members of a set of its parts in much
the same way that the description of a substance as chequered implies
that at least two of its parts have contrasting colour descriptions.

In the second sense, which we might call the synthetic sense, a
description, $\emptyset$, of a substance might be said to imply sufficient
descriptions of each part of that substance only insofar as it does
not include these descriptions among its parts or elements. It is in
this sense that the characteristic of being coloured implies the
characteristic of being spatially extended.
Now, I maintain that in Broad’s example, the description of \( AX \) and \( XB \) as “the longest red part of the line which is the only instance of \( \varnothing \)”, and as “the longest blue part of the line which is the only instance of \( \varnothing \)”, respectively, imply sufficient descriptions of the members of each of the sets of parts of \( AB \) in the analytic sense only — i.e., in the sense that they implicitly include such descriptions among their parts or elements. I would further maintain that we are able to derive such descriptions in accordance with a general rule only because the sufficient descriptions of the members of any set of parts imply sufficient descriptions of the members of any precedent set of parts. In other words, the initial descriptions of \( AX \) and \( XB \) imply that there are sufficient descriptions of the members of each of their sets of parts without directly implying the determinate nature of any particular part. That is to say, the initial descriptions presuppose sufficient descriptions of the members of any sequent set of parts. But in the case of an infinitely divisible substance, such as the line \( AB \), the fact that the nature of that substance presupposes sufficient descriptions of the members of any set of its parts leads to a contradiction, as McTaggart points out in Sections 189–191 of *The Nature of Existence*.

11. I would further suggest that Broad’s proposed alternative example was more or less anticipated by McTaggart. In Section 356 of *The Nature of Existence* we find the following points being made.

.. it is clear that the spatial qualities of the members of a set of parts imply the spatial qualities of the whole of which they are a set of parts. If we know the shape and size of each
one of a set of parts of $A$, and their position relatively to each other, we know the shape and size of $A$. On the other hand, the size, shape, and position of the whole implies that it has parts which have size, shape, and position — for otherwise it could not be divided into parts in respect of its spatial dimensions. And if does not also imply what the size, shape, and position of these parts are, it presupposes them. We shall thus have an infinite series of terms, in which the subsequent terms imply the precedent, while the precedent presuppose the subsequent. And, as was shown in Section 191, such a series will involve a contradiction, since every term in it will have a presupposition, and yet will have no total ultimate presupposition.

The conclusion to be drawn, then, is that unless the parts of a spatial whole are differentiated by characteristics which are other than spatial, then the nature of that whole presupposes sufficient descriptions of these parts — and this, as we have seen, leads to a contradiction. So, unless each of the parts of $AB$ are differentiated by non-spatial characteristics, $AB$ will presuppose, rather than imply, such descriptions. Now, as we have assumed that only two parts of $AB$ — viz. $AX$ and $XB$ — are differentiated by non-spatial characteristics, we must conclude that $AB$ does presuppose sufficient descriptions of the members of each of its sets of parts which are sequent to the set $\{AX, XB\}$. And, since it presupposes these descriptions, it cannot imply them. Hence, Broad's example fails to satisfy McTaggart's condition of implication.
It remains only to point out, in reply to Nathan's proposed revision of this example, that similar objections can be made, *mutatis mutandis*, to the attempt to derive sufficient descriptions of the parts of a temporal, rather than a spatial, whole.

12. There is a further problem with Broad's example. The example involves the assumption that the substance $P$ (i.e. the line AB) is spatially extended, that it has a spatial dimension. Now it is essential, if a series of sufficient descriptions of all its parts is to be generated, that it have only one dimension - i.e., it must have length but no breadth. If it has breadth as well as length, then any member of the hierarchy of sets of parts of $P$ will be divisible through each of two different dimensions; and, while Broad's example might provide sufficient descriptions of the parts of $P$ which make up one dimension, viz. length, it will not provide sufficient descriptions of those parts of $P$ which make up another dimension, viz. breadth. Unfortunately, the fact that $P_1$ and $P_2$ are coloured, and the fact that these qualities enter into their sufficient descriptions, as well as into the sufficient descriptions of the members of all sequent sets of parts of $P$ - e.g. $P'$, $P''$, and $P'''$, implies that $P$ must have both length and breadth. Colour, as Broad himself points out elsewhere, is an *extensible* quality; and any substance which has such an extensible quality must occupy at least two dimensions - i.e. it must have an area. However, since Broad's method provides sufficient descriptions of the parts of $P$ throughout only one dimension, it fails to provide sufficient descriptions of all the parts of $P$. It therefore fails to provide us with an example which satisfies McTaggart's condition of implication.
It might be suggested that, even though $P$ has an infinite number of parts in one dimension, the fact that these parts have an area does not imply that they are not sufficiently describable unless they are divisible throughout that other dimension. Now, this suggestion might seem plausible if that other dimension of $P$ were other than a spatial dimension. But this is not the case with $P$, since the second dimension which it occupies is a spatial dimension; and if it is infinitely divisible throughout one spatial dimension, it must be infinitely divisible throughout the other.

Finally, it might be suggested that any coloured substance must be made up, not of infinitely divisible coloured areas, but of finite, indivisible, coloured areas. But this suggestion is contrary to the initial hypothesis that $P$ is infinitely divisible, and that it has an infinite number of parts.

13. If we now consider the second proposed alternative to McTaggart's theory of Determining Correspondence, John Wisdom's Method of Echoes, we shall see that it, too, fails to satisfy the condition of implication—although for quite different reasons.

The suggestion is this. Let $A$ be a substance which has a set of parts, $a$, the members of which have the sufficient descriptions $\phi_1, \ldots, \phi_n$. Below $a$ there is a series of sets of parts of $A$, $\Sigma$, such that each member of the series is immediately below the precedent term. Each set of parts in $\Sigma$ has the quality $\psi$. There are two qualities $\chi_1$ and $\chi_2$ which echo down the series.

\[ \ldots \text{this means that if you take any set of parts } a_1 \text{ in the series and the set of parts } a_2 \text{ immediately below it and take } x \]
any member of \( o_1 \) and \( y \) and \( z \) the two members of \( o_2 \) which are parts of \( x \), then \( y \) has \( x_i \), and not \( x_i \), and \( z \) has \( x_i \), and not \( x_i \).

Let us express all this by saying that \( A \) has an Echoing Quality.... Any echoing quality is an indicator. For any member \( x \) of any set of parts in \( \Sigma \) will have a quality such that (i) its application is entailed by the fact that something has \( Q \), the echoing quality which \( A \) has; and (ii) it is a sufficient description.

For let \( x \) be any member of the set of parts, \( \beta \), next below \( \alpha \). Then \( x \) has the compound quality \( q \) of being (a) a part of the thing which has \( \alpha_1 \), (b) having \( x_i \) (or, if not, \( x_i \)), and (c) being a member of the set of parts which has \( \psi \), and is next to the set of parts (viz., \( \alpha \)), described by \( \alpha_1 \ldots \alpha_1 \). That \( q \) applies to something is entailed by "\( A \) has \( Q \)". Further if \( Q \) is an echoing quality \( q \) applies to only one thing. For any member of \( \beta \) other than \( x \) is either also a part of the member of \( \alpha \) of which \( x \) is a part or not. If it is it has \( x_i \) and not \( x_i \). If it is not it not part of what has \( \alpha_1 \). Similarly, let \( y \) be a member of \( \gamma \) and a part of \( x \). Then \( y \) has the compound quality, \( q' \), of (a) being a part of the thing which has \( q \), and (b) having \( x_i \) (or, if not, \( x_i \)), and (c) roughly, being a member of the second set of parts from \( \alpha \) which has \( \psi \).

14. The objection to this method of attempting to satisfy the condition of implication is, it seems to me, quite obvious. The fact is that \( q \), the quality of \( x \) which is implied by \( Q \), the echoing quality of \( A \), is not a sufficient description of \( x \). And there are two reasons why it is not a sufficient description of \( x \). Firstly, \( q \) is
applicable to more than one member of $\beta$, the set of parts of $A$ of which $x$ is a member. The reason why it is applicable to more than one member of $\beta$ is that, insofar as it is a quality of $x$ which is implied by $Q$, it is a disjunctive quality. Strictly speaking, $x$ has the quality $q'$ of (a) being a part of a thing which has $\varphi_1$; (b') having $x_1$ or $x_i$; (c) being a member of the set of parts of $A$ which has $\psi$, and is next to the set of parts which have the sufficient descriptions $\varphi_1...\varphi_i$. The important difference is the difference between (b) and (b'). The fact is that $Q$ implies the disjunctive quality (b'), but it does not imply which member of the disjunction $x$ in fact has. Rather, $Q$ presupposes that $x$ is $x_1$ or that it is $x_i$ - which ever it, in fact, is. And unless $Q$ implies one or the other of these two qualities, $x$ will not have a sufficient description implied by $Q$. Hence $Q$ cannot be, in Wisdom's sense, an indicator. But if it is not an indicator, then the Method of Echoes will not satisfy McTaggart's condition of implication.

The second reason why $Q$ is not a sufficient description of $x$ is that (c) can only be an exclusive description of a set of parts of $A$ if (i) the series, $\Sigma$, is a discrete, rather than a compact or dense series; and (ii) every member of $\Sigma$ is either directly above or directly below, some other member. Now, Wisdom makes both of these assumptions. There is, however, given the premiss that all substances are infinitely divisible, no reason to accept either. If we assume that below is equivalent to sequent, then the series of sets of parts of any substance, when ordered in terms of the relations of precedence and sequence, is a compact series - i.e. between any two terms in the series there will always be another term. And if it is a compact series, then there will be no set of parts of $A$ which can be
exclusively described as "next below" some given set - in which case (c) cannot be either an exclusive or a sufficient description of a set of parts of A. Hence q cannot be a sufficient description of x. Furthermore, even if the series of sets of parts of A were discrete, it would not follow that, for any two given sets of parts, one must be below or above the other. Consider the line AB below [Figure 2].

Let us assume that it has a set of parts \{AX,XB\}, and "below" that two sets of parts \{AD,DX,XE,EB\} and \{AF,FX,XG,GB\}. Let us call the first set \(S_1\), and the two sets below \(S_1\), \(S_2\) and \(S_3\) respectively. Each of these last two sets is directly below \(S_1\), since there is, we will assume, no set of parts of A below \(S_1\) which has members which are parts of the members of \(S_1\), and which has fewer members than either \(S_2\) or \(S_3\). But neither \(S_2\) nor \(S_3\) is below the other. The description "the

| A | D | F | X | G | E | B |

Figure 2

set of parts of A immediately below \(S_1\)" will thus apply to both \(S_2\) and \(S_3\). Hence it cannot be either an exclusive or a sufficient description of a member of \(\Sigma\), the series of sets of parts of AB. But unless it is either an exclusive or a sufficient description of a member of \(\Sigma\), q cannot be a sufficient description of x.
Thus the Method of Echoes does not satisfy McTaggart's condition of implication.

15. Having argued that neither Broad nor Wisdom has provided us with an alternative theory which satisfies McTaggart's condition of implication, I will now consider whether Nathan, himself, has put forward a sound alternative to the theory of Determining Correspondence as the basis of a mentalist or immaterialist metaphysic.

16. In Section 3 of his paper Nathan argues that nothing but a self is capable of satisfying his revised principles of Infinite Partition and Sufficient Description. And these principles, he maintains, must be satisfied by any existent substance. This, in brief, is the basis of his argument for immaterialism.

It is clear, then, that unless we accept these revised principles, Nathan's argument is inconclusive. So, what are these principles, and what reasons are given for accepting them? The following statement of the principles is to be found on page 452.

[We must say first] that every entity has temporal parts which it still would have had even if nothing other than that entity and its parts existed, and second, that those entities which are temporal parts would still have had sufficient descriptions even if nothing had existed other than the wholes of which they are immediate parts.13
We are given two reasons why we ought to accept these principles. The first is that, by accepting them, we are able to circumvent Broad’s proposed alternative theory. The second is that the principles are independently reasonable. Regarding the first of these reasons, I have argued above that Broad has not presented us with a sound alternative which satisfies the condition of implication. So, by rejecting Broad’s theory on independent grounds we need not accept Nathan’s revised principles in order to avoid his criticisms.

17. Regarding the second of these reasons, it is not clear what Nathan means by describing the principles as “independently reasonable”. They can hardly be considered self-evident - since neither Broad nor McTaggart would have accepted them. But we are not given any other reason why we should accept them. Furthermore, I believe that the principles are demonstrably false. My reason for saying this is as follows.

Let us assume that we have a substance, $A$, which has a temporal dimension - i.e. which has temporal parts, $B$ and $C$. $B$ and $C$, we will assume, in accordance with Nathan’s revised principles, depend upon no substance other than $A$ for their existence. Let us now assume, in accordance with the principle of infinite divisibility, that $B$ and $C$ have temporal parts. Let $\{D,E\}$ be a set of parts of $B$, and let $\{F,G\}$ be a set of parts of $C$. Now, since $B$ depends upon the existence of $A$ - the whole of which it is a part - for its existence, $B$ depends upon $C$, the other part which makes up $A$, for its existence. But $B$ itself is a whole, made up of the parts $D$ and $E$. Therefore $D$ and $E$ can exist independently of any substance other than $B$, the whole of which they are parts. That is to say, $B$, which is made up of $D$ and $E$, can exist
independently of $C$ - which contradicts our initial assumption. And so we have shown, by *reductio ad absurdum*, that the principles are false.

The only way of trying to avoid this contradiction, whilst adhering to Nathan’s principles, is to assume that every substance, hence every part of every substance, is an independent existent. But the principle of infinite divisibility maintains that every substance has parts. And since it is clear that a whole cannot exist independently of its parts, no substance, therefore, can exist independently of its parts. That is to say, every substance is dependent upon some other substance for its existence. No substance, therefore, is an independent existent.

In other words, unless we reject the principle of infinite divisibility, and endorse some form of metaphysical atomism, Nathan’s revised principles must be rejected. But if we reject either the principle of infinite divisibility, or Nathan’s revised version of that principle, we have no reason to accept the kind of immaterialist metaphysic which he outlines in the concluding section of his paper.

I conclude, therefore, that Nathan has neither refuted McTaggart’s theory, nor provided us with a more satisfactory basis for a mentalist or immaterialist metaphysic.

**NOTES**

There are a number of points which ought to be made concerning the relation of presupposition. The first is that it is essentially a relation between quality-instances, rather than between qualities per se. The second is that it is a one-many, rather than a one-two relation - i.e. there need not be only two relata in any relationship of which it is a constituent. The third is that the referent and relata in any such relationship need not belong to one and the same substance.
Does McTaggart's Proof Of The Unreality Of Time Involve An Indexical Fallacy?

1. E.J. Lowe has argued that McTaggart's proof of the unreality of time involves an indexical fallacy. Once this fallacy is made explicit, and the correct indexical expressions substituted for McTaggart's own descriptions of the nature of the time-series, the reality of time as we know it - i.e. as involving change and an A-series of events - is, according to Lowe, vindicated.

I will argue that McTaggart's argument does not, in fact, involve such a fallacy; and, that the use of indexical expressions, such as those proposed by Lowe, does not resolve the contradiction which McTaggart has uncovered.

2. The first question to be asked of Lowe is whether he has provided us with an accurate restatement of McTaggart's argument. The basic structure of McTaggart's proof is outlined by Lowe on page 63 of his article. The proof, according to Lowe, involves the following steps.

(1) Time essentially involves change.

(2) Change can only be explained in terms of A-series expressions.
(3) The use of A-series expressions involves a contradiction, and so they cannot be predicated of reality.
(4) Therefore time is unreal.

For the sake of present discussion Lowe accepts (1) and (2), but he disagrees with (3). He argues that the use of A-series expressions to describe time does not necessarily involve a contradiction; and that, for this reason, McTaggart's argument is unsound.

I do not wish to criticise Lowe's account of McTaggart's argument here other than by remarking that the contradiction which McTaggart professes to find in time is not, as Lowe seems to suggest, to be found merely in A-series expressions; and, that the terms past, present, and future are not merely predicates which we use to characterise events, but actual characteristics of the events themselves. The problem with time, according to McTaggart, lies not simply in the way it is described, but in the very nature of the temporal series itself. The importance of this point is that we do not necessarily avoid the contradiction which McTaggart professes to find in the time-series by changing the way we talk about or describe that series. If the characteristics past, present, and future (a) are essential to any genuine time series; (b) are genuinely incompatible; and (c) actually belong to every member of that series, then we do not avoid the contradiction thus generated by merely choosing an alternative way of describing that series. If the time-series is described as a B-series, for example, then we may appear to avoid the contradiction involved in an A-series. But we do so only if the time-series is not also an A-series.
To illustrate this point let us consider the following example. Three events $E^1$, $E^2$ and $E^3$, we will assume, form a time-series. Let $E^1$ be past, $E^2$ be present, and $E^3$ be future. The events thus form an $A$-series. Accordingly, we may correctly describe these events by using $A$-series expressions or predicates. But it is clear that these events, in virtue of their forming an $A$-series, also form a $B$-series: $E^1$ is *earlier than* $E^2$ and $E^3$, $E^2$ is *earlier than* $E^1$ and *later than* $E^3$, and $E^3$ is *later than* either $E^1$ or $E^2$. Now, if we describe our series of events using only $B$-series expressions or predicates we may avoid any explicit contradiction, such as that allegedly involved in the use of $A$-series expressions or predicates. But we do not, thereby, avoid the actual contradiction involved in the time-series. The contradiction in the $B$-series, we may say, is in this case implicit.

With this qualification we can, for the sake of this discussion, accept Lowe's account of the basic steps involved in McTaggart's proof.

3. The second question to be asked of Lowe is whether he has, in fact, uncovered a genuine fallacy in McTaggart's argument. And I don't believe he has done this for the following reasons.

According to Lowe, the fallacy in McTaggart's proof arises from the failure to acknowledge certain facts about the use of tenses and indexical expressions when describing events in time. McTaggart, he insists, has committed the obvious, if excusable, error of inferring that, if an event is future, then it will be present.

Consider this: is it true to say of a future event that it *will be present* (is 'present in the future')? One might on first
reflection be inclined to say yes, but in fact the answer is surely no. What may be correct is something significantly (though not unmistakably) different, namely, that if \( e \) is a future event, then there will be a time when the sentence 'e is present' is true (expresses a true statement). Similarly, rather than saying of a past event \( e \) that it was present (or is 'present in the past'), we should at most say that the sentence 'e is present', though now false, was true. I shall suggest that by emphasising distinctions like these we may avoid the entanglements in which McTaggart tempts us to become ensnared.

I believe that Lowe's "solution" is unsatisfactory. But before I explain exactly why I believe that it is unsatisfactory I think we should briefly consider McTaggart's reasons for claiming that every event in a genuine time series does have each of the characteristics past, present, and future; and that this fact involves a contradiction.

McTaggart's proof of the unreality of time includes the premiss that the characteristics past, present, and future are incompatible. This premiss is based upon the conclusion, reached as the result of the arguments to be found in Sections 307-324 of *The Nature Of Existence*, that, unless the characteristics in question are incompatible, there can be no real change and hence no real time. Lowe does not directly question the truth of this premiss, and so I will not defend it here. Having established this premiss, McTaggart then points out that each of these characteristics can be predicated of every event in a genuine temporal series'.
If [an event] $M$ is past, it has been present and future. If it is future, it will be present and past. If it is present it has been future and will be past. Thus all three characteristics belong to each event.\textsuperscript{5}

However, since the characteristics are incompatible, no event can have them all. And thus, according to McTaggart, we have a contradiction.

4. Let us now consider Lowe's reply to McTaggart's argument. His reply, in effect, amounts to a denial of the truth of the premiss that every event has each of the characteristics past, present, and future. Lowe suggests that we can avoid the contradiction by denying that a future event will be past or present; that a present event has been future and will be past; and that a past event has been present and future. Instead, he suggests that we say, concerning some future event $F$, for example, that the sentence "$F$ is present", though now false, will be true; and concerning some past event $D$, for example, that the sentence "$D$ is present", though now false, was true\textsuperscript{6}.

But have we avoided a contradiction by adopting this strategy? I suggest that the contradiction is merely transferred from events to sentences, and, ultimately, to moments of time. I will now explain my reason for saying this.

Let us consider the following statement which Lowe makes.

...the sentence '$e$ is present', though now false, was true.
On the face of it this statement commits Lowe to the view that sentences can, and in this case do, have incompatible qualities, viz., true and false. So we have not avoided a contradiction.

The obvious reply is to point out that no sentence has these qualities simultaneously; it has them at different moments of time. The sentence "e is present" is true at \( t \), and false at \( t' \), where \( t \) is a past moment, and \( t' \) is a present moment of time. Now, such a reply might be acceptable if every moment of time is either merely past, merely present, or merely future. But as McTaggart points out in Sections 331-332 of *The Nature of Existence*, every moment, like every event, is past, present, and future. And so, in attempting to avoid the ascription of incompatible qualities to events, we have, following Lowe's strategy, involved ourselves in a new contradiction. The dilemma we have reached is clearly described by McTaggart in the following passage.

The attribution of the characteristics past, present, and future to the terms of any series leads to a contradiction unless it is specified that they have them successively. This means, as we have seen, that they have them in relation to terms specified as past, present, and future. These again, to avoid a like contradiction, must in turn be specified as past, present, and future. And, since this continues infinitely, the first set of terms never escapes from the contradiction at all.

In other words, the sentence "e is present" is not a "timeless" truth - its truth is determined by the relation of token utterances
to moments of time. But each moment of time is past, present, and future; and if we attempt to avoid the contradiction involved in ascribing these incompatible characteristics to each moment of time we must stipulate that each moment has these characteristics successively — i.e., in relation to terms which are past, present, and future. The vicious regress of such a strategy is, I think, obvious.

Now, if we attempt to avoid the contradiction thus generated concerning moments of time in a way analogous to that in which Lowe suggests we are, I maintain, no further ahead. Rather than saying that every moment is past, present, and future, we might wish to say, of a past moment, M, for example, that the sentence "M is present", though now false, was true. But we are still faced with the fact that the sentence in question bears incompatible truth values; and we can only avoid contradiction by saying that it has these qualities successively — i.e. in relation to moments which are past, present, and future. And of course, as McTaggart has pointed out in the above passage, we are thereby involved in a vicious infinite regress.

5. I have given one reason for believing that Lowe's strategy for avoiding the ascription of incompatible qualities to events is unsatisfactory. But there is another. Let us assume that there are two simultaneous future events, F and F'. Let one of these events, F, be an utterance of the sentence "F is present". Now, since F is simultaneous with F', Fi is therefore true. In other words, F, an event which is, ex hypothesi, a future event, is also, we are forced to conclude, present. So, even if we do not appeal to the regress generated by the ascription of incompatible truth-values to
sentences, Lowe's strategy does not necessarily avoid a contradiction.

Lowe might, of course, reply to this second objection, and, incidentally, to the first, by denying that future or past events have any reality or existence. And, in the final paragraph of his article he does, in fact, mention such a view without actually endorsing it. But this recourse would have two implications which, I am sure, he would wish to avoid. The first is that reality or existence would be reduced to the content of a durationless or instantaneous present. It would not even be contained in a specious present - since the specious present is generally assumed, by its advocates, to contain past and present (and perhaps future) events. The second is that, unless past and future, as well as present events have a reality of some sort or in some degree, there simply cannot be a time series. A series cannot exist unless the terms of that series, and their connecting relations, exist. Now Lowe might wish to deny that time has a serial nature; but if he does the whole point of paper seems lost. If he had been successful he in his strategy Lowe would have shown that the use of A-series expressions does not involve any contradiction. But if A-series expressions do not describe the actual nature of time, what is the point in trying to vindicate their use? A more fruitful course would have been to argue that time is not constituted by an A-series of events; and that, rather than being fallacious, McTaggart's proof is simply irrelevant.

2. I will use the term "characteristic" to cover relations and qualities, including the relational qualities, of entities.


4. Unless that term is the first or last of a bounded series.


