A REFUTATION OF THE

PRINCIPLE OF THE IDENTITY OF INDISCERNIBLES

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ABSTRACT

The principle of the Identity of Indiscernibles states that qualitatively indistinguishable objects are necessarily numerically identical. The purpose of this thesis is to offer what I believe is a conclusive refutation of this principle.

Since the principle of the Identity of Indiscernibles was first stated by Leibniz in 1684, a number of philosphers have argued that the principle is false. Central to their arguments has been the claim that it is logically possible for numerically distinct objects to be qualitatively indistinguishable and therefore qualitatively indistinguishable objects are not necessarily numerically identical. However, the difficulty with this argument is that it merely asserts that distinct indiscernibles are a logical possibility and this of course is something which proponents of the Identity of Indiscernibles would obviously deny. Thus type of argument, which is termed an individuation argument, does not then provide conclusive grounds on which to reject the Identity of Indiscernibles.

My argument against the Identity of Indiscernibles is not an individuation argument, that is, it does not seek to establish that distinct indiscernibles are a logical

possibility. Rather, what my argument endeavours to show is that the Identity of Indiscernibles implies an unacceptable view of the nature of objects. This argument is established, first, by indicating those features of recognized ontologies which are incompatible with the Identity of Indiscernibles and, therefore, through a process of elimination, those features which are compatible with the principle. These features together form the view of the nature of objects to which proponents of the Identity of Indiscernibles are committed, and which is in turn shown to be unacceptable.

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INTRODUCTION

The principle of the Identity of Indiscernibles was first stated by Leibniz in his correspondence with Clark in the following form: "there is no such thing as two individuals indiscernible from each other" (Loemker 1956, p. 1117). The basis of this metaphysical claim was the principle of Sufficient Reason. According to Leibniz, God could have no sufficient reason for putting one set of properties at one place and a second set of precisely the same properties at another place rather than the other way round. In contemporary philosophy, epistemological claims about how objects are identified have replaced the principle of Sufficient Reason and, as a result, the Identity of Indiscernibles has remained the subject of recurring interest. At the turn of the century, for example, G.E. Moore claimed to have refuted the principle (Moore 1901). This claim was further substantiated by Bertrand Russell's analysis of space and time in his Presidential Address to the Aristotelian Society (Russell 1911). However, by mid-century, epistemological considerations had led Russell

to abandon his early view of space and time and with it his case against the Identity of Indiscernibles (Russell 1948). Although Russell was to reaffirm this view (Russell 1959), his argument did not go unchallenged. In 1952, Max Black published what is widely regarded as the most successful attack against the Identity of Indiscernibles (Black 1976). However, many philosophers, such as A.J. Ayer and D.J. O'Conner, have remained unconvinced. A.J. Ayer, for example, has argued that despite all that Black urges against the principle he is still "inclined" to hold that the principle is necessarily true (Ayer 1976) while D.J. O'Conner has criticized not just Black but the general unwillingness of opponents of the principle to discuss further issues which might bear upon the validity of the principle (O'Conner 1976).

The purpose of this thesis, however, will not be to reach a consensus on the various issues involved, but to offer a conclusive refutation of the Identity of Indiscernibles, hereafter referred to as I I. This will be done by showing that the metaphysical conclusion that it is necessarily the case that "there is no such thing as two individuals indiscernible from each other" entails an unacceptable ontology. In order to establish this argument it is necessary to determine what I I asserts. But, before turning to this question, it is important to distinguish my

argument for this thesis from those of the early Russell, Black and Moore.

Both the early Russell and Black endeavour to show that two indiscernible objects are not necessarily identical. The reason, they suggest, is that it is in fact logically possible for there to be two qualitatively indistinguishable and yet numerically distinct objects. Consequently, if I I were true, there would be no basis for telling the two objects apart, as the objects would quite literally be indiscernible. This line of argument is commonly referred to as the "individuation argument". My argument for this thesis differs from the early Russell's and Black's thesis in three ways. First, I do not take the individuation argument to be strong enough to conclusively refute I I. (This may also explain Ayer's "inclination" to support I I.) Second, my case against I I rests on another argument: the argument from the nature of objects. This argument demonstrates that I I entails an unacceptable view of the nature of objects and therefore it is this argument, and not the individuation argument, which is conclusive. Thirdly, the view of objects to which my thesis reduces I I is not the view of objects which the early Russell and Black reject. In fact, this point can be stated more strongly than this. Those philosophers who have either accepted or rejected I I agree that I I implies that the nature of objects is such that if

two objects share all their properties then they are necessarily numerically identical. Opponents of I I have not then found this claim to entail an unacceptable view of the nature of objects. Rather, the ground of criticizing I I has been to show that if it is logically possible for two objects to be qualitatively indistinguishable and yet numerically distinct, then the qualitative indistinguishability of objects does not guarantee that they are numerically identical. Proponents of I I have accordinly defended I I by defending the view that qualitatively indistinguishable objects are numerically identical; in other words, they have denied that the individuation argument against I I has any force at all on the grounds that distinct indiscernibles are not a logical possibility. The point on which advocates andopponents of I I have traditionally disagreed, then, is whether this view of the nature of objects can guarantee the numerical distinctness of objects, but, more importantly, the point on which they do agree is that it is this view of the nature of objects which is entailed by I I. It is my argument that this view of the nature of objects is only superficially implied by I I and that the view of the nature of objects which is actually implied is unacceptable. Consequently, while my argument is consistent with the early Russell's and Black's in that it seeks to refute I I, it may also be taken as a

criticism of their arguments.

The connection between my argument and Moore's argument in 'Identity' is remote. It is evident that Moore finds the ontology implied by I I unacceptable. However, Moore's reasons for thinking this are not at all clear. It is possible that what Moore has in mind is an individuation argument not unlike the early Russell's or Black's. If this is the case, then it is not the nature of objects implied by I I which Moore finds unacceptable, but the inability of this sort of ontology to account for the difference between distinct indiscernibles. It is also possible that Moore is offering a more sophisticated argument in which the individuation argument is based on an analysis of the nature of objects implied by I I. There are two claims which Moore makes which suggest that this is the sort of argument he has in mind. The first claim is that sentences such as "A is red" present us with a linguistic picture of the nature of objects and, secondly, that the structure of this picture, with "A" on the one side and "red" on the other, indicates a relation between an individual object and a property. Moore therefore seems to believe that the nature of objects is such that they are not reducible to the properties which are predicable of them -- as this would transform predication from a relation between an object and its properties into a relation among a bundle of properties -- but that they are

in some sense distinct from the properties which are predicable of them. As Moore sees it, if two objects are numerically identical where the same properties are predicable of them, as advocates of I I claim, then the objects of I I cannot be distinct from their properties but must be reducible to them. Moore therefore concludes, first, that in reducing objects to a bundle of properties, the advocate of I I is forced to acknowledge that to a predicate red of A is really to predicate red of a constituent of A. In other words, rather than predicating red of the object A, the advocate of I I is forced to predicate red of a constituent of A such as square. The second conclusion that Moore draws is that this view of the nature of objects implies that objects are equivalent to a single property. That is to say, in predicating red of A where A is reducible to the properties red and square, the advocate of I I must identify the object A with the single property square. Consequently, not only is the advocate of I I committed to the absurd view that objects are equivalent to a single property but, as Moore suggests, it is considerably more difficult to individuate objects where objects are equivalent not to a bundle of properties but to a single property.

If this is in fact Moore's objection to I I, then, even though this argument appears impressive, it is extremely

weak. In the first place, Moore's argument requires that one's metaphysical analysis correlate entities to ordinary sentences such as "A is red" and, furthermore, that the relation between A and red must be one of predication, rather than a special relation which, for example, binds a bundle of properties. Consequently, if one takes the relation between A and red to hold between a bundle of properties rather than an individual object and a property, "A is red" will, when interpreted in accordance with Moore's requirement, express a relation between two properties, namely, a constituent of A such as square and red. Moore's objection to the ontology implied by I I is not then that this view of the nature of objects is unacceptable, but that in viewing objects in this way, his primitive theory of language is altered. However, it is not necessary to accept Moore's implicit theory that the structure of objects must mirror the structure of sentences. This theory is by no means obvious, nor for that matter does Moore defend the theory. A second reason for dismissing Moore's objection is that by rejecting ontologies which suggest that sentences of the form "A is red" tell us something about the constitution of objects, Moore is implicitly committed to regarding objects as undefinable. Consequently, while Moore claims to have refuted I I, it is clear that if Moore is offering something more than the individuation arguments offered by

the early Russell and Black, then it is not an objection to the nature of objects implied by I I but rather an objection to the view of language which is implied by an ontology of this sort.

No philosophers, then, including the early Russell, Black and Moore, have rejected I I on the grounds that it implies the unacceptable view of the nature of objects that I will show that it does in fact imply. The early Russell and Black reject I I on the grounds that the ontology which it implies cannot guarantee the identity of objects while Moore's grounds for rejecting I I are linguistic. The possibility of reducing I I to a view of the nature of objects which is unacceptable is not then a possibility which has been considered in the literature on I I. The purpose of this thesis is therefore to substantiate the claim that an unacceptable view of the nature of objects is in fact entailed by I I.

This argument requires an analysis of what I I asserts. One way of formulating I I is to assert that it is a necessary truth that two objects are numerically identical if and only if they are qualitatively indistinguishable. In other words, if two objects agreed exactly in all their properties so that they were indiscernible from each other, then there would not be two objects but only one. This principle is supported by epistemological claims pertaining to the identification of objects. Most objects that we

commonly observe are dissimilar enough as to present few difficulties as to their identity. However, where two objects are not readily distinguished, it is supposed that if the objects really are two, then a qualitative difference will emerge on closer inspection. Consequently, if everything that we can observe of an object can in principle be stated, then a complete description of the object will be sufficient to individuate the object beyond any shadow of doubt. In other words, epistemological claims about perceived differences in objects will support the view that identity consists in qualitative indistinguishability.

This argument rests heavily on the sort of things that are allowed to count as properties. If the property of being self-identical and the property of being different are allowed, then I I is clearly true. But as advocates and opponents of I I agree, this sense is trivial. To claim that "A has the property of being identical with A" and that "B has the property of being different from A" is merely to assert that A is A and that B is not A, that is, that different objects are different.

In order to avoid this triviality, advocates have interpreted I I as holding not between A and A but between A and B. Accordingly, A and B will be numerically identical if and only if they have all their properties in common. But, once again, this argument is contingent upon the sort of things which count as properties. If identity and difference

are again counted, then although I I will not be trivial, it will be self-refuting. For even though A and B may share all their non-relational properties such as colour, shape, size, etc., if A has the property of being identical with A and different from B and, conversely, if B has the property of being identical with B and different from A, then A and B will not be identical but numerically distinct. The philosopher who wishes to maintain that A and B are numerically identical is therefore represented as saying that he cannot distinguish A and B when he has already recognized A and B to be distinct.

However, proponents of I I have been quick to point out that the difficulty lies not so much in the properties of identity and difference as in the linguistic fact that the names "A" and "B" presuppose distinct objects. Advocates such as Ayer (Ayer 1976) have therefore proposed rephrasing claims about objects as claims about the properties which constitute them. In this way, any reference to an object by name or to a property which contains a name such as the property of "being-identical-with-A" or the property of "being-different-from-B" is cashed out in terms of a general description. Thus instead of asserting that the objects A and B are in fact numerically identical if they have all and only the same properties in common, the principle may be more plausibly taken to assert that one and only one object

satisfies a given general description. For example, if an object which, on one occasion, we named "A", and another object which, on another occasion, we named "B", turn out to satisfy the same general description, for instance

red
square
large
hard

then A and B are necessarily numerically identical.

Ayer calls this version of I I interesting, that is, where qualitatively indistinguishable objects are numerically identical or A=B in order to distinguish it from the trivial claim that objects are identical with themselves or A=A. However, while it is this version which is of philosophical interest, not all advocates of I I have found this formulation satisfactory. D.J. O'Conner, for example, has argued that reference to objects cannot be entirely rephrased as a general description (O'Conner 1976). The reason, O'Conner suggests is that unlike non-relational properties which are general, spatial locations and temporal locations are unique. This uniqueness will then be reflected in their descriptions. For example, A might be described as red, square, and large, and as having the spatio-temporal co-ordinate X_1, Y_1, Z_1 at t_1 in a system of axes. Accordingly, I I will be definable in terms of a complete

description where a complete description includes relational as well as non-relational properties.

The most obvious difference between Ayer's version and O'Conner's version concerns the sort of things which the term "property" is taken to connote. For Ayer, spatio-temporal locations are forced outside the connotation of the term by the requirement that a complete description be a general description whereas for O'Conner this restriction does not apply. However, the fact that the difference between the two versions reduces to a question of whether spatio-temporal locations are properties does not imply that the difference is merely one of degree rather than kind, that is, that all that is at stake ontologically is the recognition of one more or one fewer kinds of entity.

On the contrary, these two forms of the interesting version of I I are ontologically incompatible. If, as O'Conner suggests, objects can be identified by their spatio-temporal locations, then in any given case an object will be identifiable independently of other objects by reference to its spatio-temporal location or co-ordinate. This view implies that space and time are absolute, that is, that the spatio-temporal position of an object will not be determined by reference to its relative position to other objects, rather, the object will be identifiable in its own right or absolutely as occupying a unique and numerically distinct

spatio-temporal position. Conversely, where spatio-temporal properties are excluded from the bundle of properties to which an object is reducible, the identity of an object will reside in the uniqueness of its bundle of non-relational properties. For example, A might be red, square, large and hard, whereas B is red, square, large, and soft. A may also be said to have a certain spatio-temporal location, but in order to determine this location we must first be able to identify A. In other words, spatio-temporal positions presuppose the existence of the object in question and are relative to the location of other objects. On Ayer's view, then, space and time are relative and thus of the form "to-the-left-of" or "above" while on O'Conner's view space and time are absolute and thus of the form "X_1, Y_1, Z_1 at t_1."

The analysis to date may therefore be summarized as follows. The important distinctions were made. First, the trivial version of I I was distinguished from the interesting version. The trivial version made I I true by counting as properties non-relational properties such as colour, shape, and size as well as the properties of identity and difference. The triviality of this version lay in the fact that by counting identity and difference as properties A and B could not possibly have all their properties in common as A would have the properties of being

identical with A and not being identical with B, which B could not share. The trivial version of I I therefore makes the obvious claim that objects are identical with themselves, that is, that A=A. Both advocates and opponents of I I agree that the trivial version of I I is true. But they also agree that this version is philosophically uninteresting. Thus in order to make I I interesting, I I has been interpreted as holding not between A and A but between A and B where identity and difference are not counted as properties. The interesting version of I I thus states that if A and B have all the same properties in common, with the exception of identity and difference, then A and B will necessarily be numerically identical.

The second distinction which was drawn differentiated two versions of the interesting form of I I, namely, Ayer's and O'Conner's. On Ayer's view, relational properties are not included in the bundles of properties to which objects are reducible on the ground that they presuppose the identities of the objects in question. This view commits Ayer to a relative view of space and time as it is on this view of space and time that relational properties presuppose the identities of objects. On O'Conner's view, on the other hand, relational properties are included in the bundle of properties to which objects are reducible. Consequently, if relations are to function as properties in the manner of

non-relational properties, relational properties must constitute rather than presuppose the identities of objects. Accordingly, O'Conner is committed to an absolute view of space and time as it is on this view of space and time that relations constitute rather than presuppose the identities of objects.

The argument of this thesis may now be more fully stated. If the identity of A and B depends solely on non-relational properties, then a particular ontology will be implied while if identity ultimately resides in common relational properties another ontology will be implied. The crucial point is that both versions of the interesting form of I I will imply a definite ontology and that both of these ontologies will be unacceptable. Consequently, any philosopher who supports I I is implicitly committed to an unacceptable ontology.

My argument for this thesis will be divided into three chapters. The first chapter defines the ontology which is implied by the interesting form of the relative space-time version of I I. This ontology can be explicitly defined. However, as I make the strong claim that only one ontology is implied by this version of I I and that this ontology is unacceptable, it is important to demonstrate why all other ontologies are incompatible with this version of I I.[1] The approach in this first chapter, then, will be to consider in

more detail what is asserted by I I. This will provide a basis on which to test ontologies for their compatibility with I I. In this way, through a process of elimination, it is possible to argue that only a certain sort of ontology is compatible with the relative space-time version of I I.

The second chapter attacks the ontology which is implied by the relative space-time version of I I and which is defined in chapter one. This section will be divided into three sub-sections. The first sub-section will consider Black's version of the individuation argument and, the second, an elaboration of an argument offered by R.M. Adams. Even though most philosophers would willingly grant that individuation arguments do not provide conclusive grounds on which to refute I I, there are a number of reasons for discussing this type of argument. First of all, the individuation argument is still though to offer the best ground for rejecting I I. Secondly, since the individuation argument remains at the forefront of the debate over I I, any systematic attack against I I must respond to this argument either by supporting it as most philosophers have done, or else by demonstrating that there is another line of argument which is more effective as is done in this thesis. Finally, while it is the argument from the nature of objects which conclusively refutes I I, it does not raise some of the issues which are raised by the individuation argument.

Therefore, the individuation argument must be included in an account of the issues surrounding I I if this account is to be complete. In the first two sub-sections of chapter two, then, an account of the individuation argument will be given as well as a brief account of the reasons why advocates of I I have found this type of argument inconclusive.

The third sub-section offers what has been termed the argument from the nature of objects. Unlike the individuation argument which offers essentially one objection to I I, the argument from the nature of objects offers a number of objections. These objections are not independent of each other, but form a continuum in which each successive objection reveals more of the ontology to which proponents of I I are committed. Consequently, while some advocates of I I might not find the first objection persuasive, the case against I I gets progressively stronger with each objection. The argument from the nature of objects might then be characterized as a series of objections in which the status of I I goes from bad to unacceptable.

The third chapter deals with the interesting form of I I where space and time are viewed as absolute and, in particular, the views of O'Conner and the late Russell. Unlike the relative space-time version of I I, which is shown to reduce to an unacceptable view of the nature of

objects, the concern of this chapter is limited to an examination of the nature of relational properties which are claimed to ultimately distinguish objects in absolute space and time. What this argument will show is that absolute spatio-temporal positions are not in fact unique and furthermore that the only sense in which they could be said to be unique is in a sense which is incompatible with I I. The absolute space-time version of I I will therefore be shown to be a view which does not support I I and, for that matter, a view which does not provide a safe retreat from the difficulties of the relative space-time version of I I.

Notes to Introduction

1. It is possible that two or more of the ontolgies that I claim to be incompatible with the relative space-time version of I I could be combined to produce another ontology. However, this is a possibility which is not of concern. In the first place, an ontology of this sort is not one which is likely to be held as the function of at least some of its components will be redundant and, secondly, insofar as it combines distinct ontologies which are themselves incompatible with the relative space-time version of I I, it follows that it too will be incompatible.

CHAPTER ONE

EU-ONTOLOGY

I I states that if two objects are qualitatively indistinguishable then they are necessarily numerically identical. The term "object" is taken to denote a bundle of properties which, in keeping with Ayer, is described in such a way as not to presuppose the identity of the object in question. Accordingly, A and B are numerically identical if and only if they satisfy the same general description. Although this formulation is most common, another way of stating I I is to assert, conversely, that if there are two numerically distinct objects, then one object must possess at least one property not possessed by the other.[1] If A is numerically distinct from B, then there is no difference between A and B that cannot be expressed as a difference between properties. For example, if A and B are both red, square, and large, then, if they are in fact numerically distinct, A will possess a property not possessed by B; for example, A might be hard whereas B is soft.

Of the two formulations of I I the second points more clearly to the ontology which I I entails; or, at least at

this stage, it indicates which ontologies will not be compatible with I I. To begin with, if the difference between objects is not expressed as a difference between properties, then the ontology implied will not be compatible with I I. In other words, if it is not a necessary condition for objects to be numerically distinct that they differ in a property, it will be logically possible for two objects to have all their properties in common and yet still be numerically distinct. Therefore, all ontologies which are incompatible with I I will postulate the existence of a component other than qualitative difference which is itself sufficient to distinguish objects. These components will by definition be capable of making objects unique and therefore while all the objects in the world may differ from one another in at least one property it is not necessary on these views that they do so in order to be numerically distinct. I will now consider a number of ontologies which postulate such a component and are therefore incompatible with I I. By doing this, I will indirectly narrow down the kinds of ontology that are compatible with I I.

I shall consider three kinds of components which have been claimed to be capable of individuating objects without relying on qualitative difference. These components, which will be examined in turn, are instantiated properties, bare

particulars and substrata.

Objects have sometimes been claimed to be reducible to instatations of properties where it is held that there may be numerically distinct instantations of the very same determinate property. For example, if A is reducible to the properties red, square, and large, then these properties will be particular in the sense that they are numerically distinct from the properties red, square, and large which constitute B. This ontology has been developed along four separate lines. Moore and the early Russel have argued that properties such as red are instances or particularizations of subsistent universals.[2] Instances are therefore easily defined by the way in which they differ from their subsistent universals. For example, subsistent universals do not exist in space and time and are akin to "forms" which are eternal and timeless whereas their instances exist in space and time. Although instances and subsistent universals differ ontologically, it is nevertheless in virtue of the form or subsistent universal red that an entity is said to be red and, further, that the similarity between two instances is accounted for. Therefore, while the red of A is numerically distinct from the red of B, and all other instances of red, it is by reason of their relation to the subsistent universal red that both instances are similar.

A second interpretation, which is offered by G.F.

Stout, differs from Moore's and the early Russell's in two respects. First, "red" is not taken to refer to a timeless entitty of which "this red" and "that red" are particular instances or examples, but to a class which is equivalent to the sum of all concrete instances of red. Secondly, Stout does not regard property instances as deriving their distinctness from the distinctness of the objects to which they belong, as Moore and the early Russell seem to believe, but as distinct in their own right. In Stout's words, a property of an object is "as particular as the thing or individual which it characterises" (Stout 1930, p. 386).

Finally, two other recognized versions of this ontology are suggested by D.C. Williams and R.I. Sikora. Both versions, in keeping with Stout, take properties to be particular in their own right. Where Williams' version differs is in his rejection of Stout's idea of the class as a unique form of unity, that is, as a unity which cannot be further reduced to similarity. Williams' version also differs in that he claims that instantiated properties or, what he terms, "fine parts" could conceivably exist by themselves and, therefore, contrary to Stout, the existence of properties is not dependent on the objects to which they belong. Sikora, on the other hand, argues that many of the traditional difficulties implied by class terms and the relation of similarity are eliminated if general terms are

viewed as denoting groups of logical possibilities and instantiated properties as instances of these possibilities.

Despite the obvious differences between these ontologies, they are similar to the extent that the properties of objects are in some sense particular. This means that on each view the red of A will be numerically distinct from the red of B and, therefore, where A and B have all and only the same properties in common, A and B will still be numerically distinct by reason of the numerical distinctness of their property instantiations. On these views, then, qualitative indistinguishability does not necessarily imply numerical identity and therefore ontologies of this sort, which postulate the existence of particular property instantiations, are incompatible with I I.

Over and above their other differences, these views also differ in their account of the similarity between objects. However, this is something which some philosophers feel that these ontologies cannot explain. According to E.B. Allaire (Allaire 1976, p. 282) there must be entities to account for A and B being the same, that is, there must be entities which are quite literally one and the same in both objects in order to explain the word "red" being truly predicated of A and B. Instantiated properties cannot then be particulars but must be entities which are capable of

enjoying a spatio-temporally divided mode of existence. Allaire therefore believes that the properties of objects must be universal. But, unlike the universals to which Moore and the early Russell refer, these universals do not subsist but rather exist and therefore may be termed "existent" universals. However, the difficulty with this theory is that while it accounts for the similarity between objects, it does not account for their difference. In other words, if it is logically possible for two objects to share all their properties and yet be numerically distinct, then this theory must provide some other basis other than qualitative difference on which to distinguish the two objects.

To solve this problem Allaire postulates the existence of a special kind of particular termed a "bare" particular which supposedly accounts for the difference between objects. Traditionally, bare particulars have been viewed with suspicion. The early Russell, for example, referred to them as

> a mere unknowable substratum, or an invisible peg from which propereties would hang like hams from the beams of a farmhouse (Russell 1959, p. 120).

However, the early Russell's view of bare particulars is not one which is shared by Allaire. Instead, Allaire characterizes bare particulars as "the carriers of numerical difference as directly presented to us" (Allaire 1976,

p. 290). This means, first of all, that bare particulars are not invisible pegs from which properties hang, but rather one of a number of properties which together form an object. It also means that bare particulars and existent universals are not properties of the same ontological type as existent universals are not carriers of numerical difference. For, even though existent universals such as red and green are themselves numerically different, the numerical difference of objects cannot be guaranteed by the possession of an existent universal.

Thirdly, while bare particulars cannot be identified in the manner in which existent universals are, they can be known. According to Allaire, the argument that bare particulars are unknowable fails to distinguish two senses in which things can be known. If by knowing something we mean that we are able to "recognize" it, then Allaire admits that bare particulars are not the sort of things that can be known. For example, if we are presented a second time with A and B, then, because we can only tell that the two objects that we now see have all the properties that the two objects that we saw earlier had, it follows that if each object contains a bare particular, the bare particulars in themselves are not recognizable. However, if by knowing something we mean that we are "acquainted" with it, Allaire then claims that we can know bare particulars. Allaire's

reasoning seems to be that if, in distinguishing A and B, we are presented with numerical difference and if bare particulars are carriers of numerical difference, then we must in some sense be acquainted with bare particulars. But as Allaire admits,

> I cannot get away with just maintaining that they [i.e., bare particulars] are merely numerically different. I must show in what sense one is acquainted with them. Not to recognize this obligation would be to confuse again the two uses of "know". Nevertheless, in pointing out that individuals [i.e., bare particulars] are not recognizable, i.e., are merely numerically different, one has arrived at the heart of the matter. Individuals [i.e., bare particulars] are just those entities which do ground the numerical difference of two things which are the same in all (nonrelational) respects (Allaire 1976, p. 288).

What these entites are, however, is still not altogether clear. But, as problematic as they are, it is nevertheless by reason of these entities that objects are ultimately said to differ. On a view such as Allaire's, then, it is possible for two objects to be qualitatively indistinguishable and yet numerically distinct by reason of their bare particulars and this, as we have seen, is contrary to I I.

The third type of individuating component is what is termed a "substratum". According to this theory, besides the various properties of an object, there is an entity that in some sense "supports" those properties. There are four ways in which one might come to hold this view. An advocate of this view might hold that the nature of language commits us

to an ontology of this sort. From the structure of sentences such as "A is red" it might seen to follow that an object is something different from the sum of properties which are predicable of it. A second reason is that substrata are thought to be necessary to bind the various properties of an object together. According to a third view, substrata are needed in order to make subsistent universals actual, that is, to instantiate them. And, finally, substrata might be regarded as the only sort of component which is capable of differentiating qualitatively indistinguishable objects. However, despite the diversity of reasons for holding the substratum theory, substrata are, on all four grounds, regarded as something which is not itself a property but as something which supports properties. The substratum theory is therefore incompatible with I I since it is logically possible for two objects to have all their properties in common and yet still be numerically distinct by reason of their substrata.

Although none of these reasons for holding the substratum theory influence the nature of substrata, they do in some cases influence the nature of objects. Of the four reasons, the first two do not have any bearing on the nature of objects. The first simply asserts a difference between substrata and properties based on features of language, and the second, the same difference, but based on the need to bind properties together. Objects, on these two views, may

therefore be composed of either instantiated properties or existing universals.

On the third view, objects cannot be composed of existent universals but must be composed of instantiated properties as substrata are specifically postulated in order to make subsistent universals actual. In other words, while subsistent universals are eternal and timeless, their instantiated properties cannot exist by themselves but require substrata in which to inhere. In keeping with Stout, Williams and Sikora, instantiated properties may be regarded as particular in their own right. But this view seems unlikely, for while substrata would still be required to instantiate existent universals, the difference between objects could be accounted for in terms of substrata as well as the particularity of their properties. The differentiating function of substrata would therefore be redundant. However, short of actually abandoning substrata, and offering an account of the nature of objects simply in terms of particular properties as Stout, Williams and Sikora do, the substratum theorist might argue that while properties are not existent universals they are not particulars either. A more plausible interpretation of this third view, then, is that instantiated properties are not entities which are particular in their own right but rather entities which derive their particularity from substrata. It is worth noting how closely this view resembles the view of Moore and

the early Russell. Both Moore and the early Russell claim that the red of A is numerically different from the red of B, but that properties such as red are not particular in their own right. But, since Moore and the early Russell explicitly reject the substratum theory, it would seem that rather than postulate the existence of an "unknowable substratum" from which properties could derive their particularity, Moore and the early Russell are content to leave the nature of objects unexplained. According to Moore, it is clear that something is true of a given object which is not true of other objects and that this cannot mean that the object has one or more properties which nothing else has. In fact, says Moore,

> there is an ambiguity in the expression, "that which is true of a thing," to point out which is all I can do in the way of defining a subject [i.e., object] (Moore 1901, p. 122).

The fourth reason for holding the substratum theory is that substrata are believed to be the only sort of components which are capable of differentiating qualitatively indistinguishable objects. This view immediately precludes construing properties as particular instantiations as objects could also differ by reason of the particularity of their properties. Properties must therefore be construed either as entities which derive their

particularity from substrata or else as existent universals. If properties are construed in the first way, then this interpretation entails an ontology which is implied by the third view and, as suggested, by Moore and the early Russell. However, while this interpretation is not inconsistent with the fourth view, it is not consistent with the reasons for holding it. Unlike the third view, which postulates substrata in order to give instantiations of subsistent universals something in which to inhere, the fourth view seeks to explain the similarity and difference between objects in terms of their properties. If the red of A and B are therefore in some sense particular, then the similarity between A and B cannot be explained in terms of their properties but must be explained by reference to their relation to another entity such as a subsistent universal.[3] On the other hand, if properties are regarded as existent universals, the similarity between A and B can be accounted for in terms of their properties since A and B will quite literally possess one and the same property. Substrata will then be postulated in order to differentiate qualitatively indistinguishable objects.

There is some suggestion that substratum and, in particular, this fourth reason for holding the substratum theory is what Allaire actually had in mind when he stated his bare particulars theory. Although Allaire explicitly

denies this interpretation, the bare particulars theory and the substratum theory share a number of similarities. First, both views explain the similarity between objects in terms of existent universals. Second, both views distinguish the component which differentiates objects from the object's existent universals. And, thirdly, both views regard the individuating component as propertyless. In Allaire's words, while existent universals such as red and green differ intrinsically (as well as numerically), bare particulars and substrata only differ numerically (Allaire 1976, p. 286).

Where the bare particulars theory and the substratum theory differ is in the way in which they conceive of the relation between an object's individuating component and its existent universals. On the substratum theory, substrata "support" existent universals or, conversely, existent universals "inhere" in substrata. Existent universals and substrata do not then combine to form a bundle. Rather, existent universals themselves form a bundle which in turn is supported by or which inheres in a substrata. In other words, on the substratum theory objects are not equivalent to a bundle of existent universals, but to a bundle of existent universals plus a substrata. Allaire, on the other hand, suggests that the individuating component, that is, the bare particular, is not "connected" with a bundle of existent universals but actually "contained" in it.

According to Allaire, in saying that an object (denoted by "this") is composed of the existent universals R, S and C, there is a temptation to

> claim that R, S, and C are the constituents of "this". But here we have identified description with predication and so have excluded the possibility of including in our description that which accounts for the "thisness" of "this". In describing a single thing, the omission does not disturb. But in describing two things having the same characters [i.e., properties], the omission does disturb. One thus says that things contain bare particulars, which are, like characters, presented. However, a particular is different in kind from a character and is thus squeezed out of the description. One cannot pedicate a particular of a thing. For particulars, being bare, cannot be named as characters can be. Particulars are in that sense ineffable (Allaire 1976, p. 290).

Although Allaire claims that bare particulars are contained in objects and not merely connected with them and therefore that bare particulars are not substratum, it may still be argued that the two sorts of entities differ only in name. The difference between Allair's theory and the substratum theory would not then lie in the nature of the individuating component, but in whether the individuating component is contained in or connected with objects. However, while bare particulars may well reduce to substratum, it is not important, for the purposes of this thesis, to either support or reject this claim. For whether or not bare particulars and substratum are the same, both

theories are incompatible with I I as on either view it is logically possible for two objects to have all their properties in common and yet still be numerically distinct by reason of their individuating component whatever their individuating may turn out to be.

This analysis thus substantiates the claim which gave rise to this discussion, namely, that ontologies which postulate the existence of an individuating component will be incompatible with I I on the grounds that it will be by reason of the individuating component, and not a difference in properties, that objects differ, thereby raising the possibility of distinct indiscernibles. But what this analysis also indicates are the types of properties which are sometimes claimed to constitute objects but which are incompatible with I I, and, in this way, it indirectly points to the ontology entailed by I I. By stipulating the sorts of properties which are incompatible with I I, it is therefore possible, through a process of elimination, to deduce the properties which are compatible with I I. The ontology entailed by I I can therefore be stated in this negative way as follows. (1) Since I I is incompatible with the existence of individuating components, the properties which constitute objects must be non-particular or universal. (2) Moreover, since universals are components of physical objects, they must exist. Accordingly, a property

such as red is an existent universal and therefore may be referred to as the "existent universal red". (3) This means that, because the properties of objects are not particular but universal and therefore capable of being shared by more than one object, properties such as the existent universal red are capable of enjoying a spatio-temporally divided mode of existence. (4) It also means that the red of A and the red of B cannot be distinct parts of the existent universal red: first, because it is one and the same property which is said to exist in spatio-temporally separate objects and, secondly, because if the red of A and the red of B were distinct parts of the same existent universal, it would be logically possible for two objects to be qualitatively indistinguishable and yet numerically distinct by reason of their parts. (5) Existent universals are therefore the only constituents of objects for if objects were composed of instantiated properties or contained bare particulars, it would not follow that qualitatively indistinguishable objects are necessarily identical. (6) Similarly, objects cannot be connected with anything such as a substratum as it would possible for two objects to have all their properties in common and yet still be numerically distinct by reason of their substrata.

The ontology which is implied by I I can therefore be positively defined as follows:

(1) objects are composed of existent universals;

(2) existent universals exist rather than subsist;

(3) existent universals are capable of enjoying a spatio-temporally divided mode of existence;

(4) existent universals are not divisible into parts;

(5) existent universals are the only constituents of objects; and finally,

(6) objects are reducible to their constituent existent universals rather than requiring in addition a substratum.

This means

(7) that if A and B possess all and only the same properties, then A and B are necessarily numerically indetical or, in Leibniz's words, "there is no such thing as two individuals indiscernible from each other" (Loemker 1956, p. 1117).

Conversely,

(8) if A possesses at least one property not possessed by B, then A and B are necessarily numerically distinct and therefore there is no sense of difference other than a difference in properties, since "there is no such thing as two individuals indiscernible from each other" (Loemker 1956, p. 1117).

This ontology is readily distinguished from the ontologies of Moore, the early Russell, Stout, Williams and Sikora by its construal of properties as existent universals and from Allaire's bare particulars theory and the substratum theory by its reduction of objects to only existent universals. For ease of reference, it is appropriate to refer to this ontology as the EU-ontology,

that is, as the ontology of Existent Universals. The term "EU" or "EU-ontology", insofar as it denotes the ontology entailed by I I, will therefore be used synonymously with the term "Identity of Indiscernibles" or "I I". Accordingly, philosophers who subscribe to I I will be referred to as "EU-ontologists".

Notes to Chapter One

[1] Any reference to an object by name or to a property which contains a name such as the property of "being-identical-with A" or the property of "being-different-from-B" must be cashed out in terms of a general description. Where I I is stated in the converse, this means that the difference between A and B cannot lie in the fact that A possesses the properties of being identical with itself and different from B.

[2] Although Moore and the early Russell claim that one instance of red is numerically distinct from another instance of red, they do not indicate why the two instances are numerically distinct. Moore, for example, suggests that the particularity of property instances is derived from the uniqueness of the objects to which they belong. But, as Moore also admits, a bundle of properties is no more unique than each property singly. This point I will return to later in this chapter.

The nature of individuating components is also dubious where they are viewed as bare particulars or substrata. However, while a critical analysis of these properties would prove interesting, it is not within the scope of this thesis to do so. Rather, what this chapter seeks to establish is that, whatever their nature, individuating components are in principle incompatible with I I.

[3] Sikora argues that the similarity between objects can be explained by reference to logical possibilities instead of subsistent universals. In this way, one avoids postulating the existence of Platonic entities which many philosophers find problematic.

CHAPTER TWO

RELATIVE SPACE AND TIME

The early Russel and Black reject I I on the grounds that it is logically possible for two objects to have all their properties in common and yet be numerically distinct and therefore qualitatively indistinguishable objects are not necessarily numerically identical. However, before turning to this argument, which is termed the individuation argument, it is important to first dismiss what might appear to be two obvious and conclusive arguments against EU-ontology.

Some critics have argued that in order for universals to be shared by two or more objects they must be "abstract" and therefore, as abstract entities, in some sense less real than objects (Loux 1976, p. 11). The objection is that this leads to the absurd consequence that objects are composed of properties that are less than real. But clearly, as no EU-ontologist would knowingly hold this, it must be assumed that in referring to universals as abstract, the EU-ontologist is not claiming that universals subsist rather than exist, but that they can be shared by more than one object and, in this sense, they are not particular in the

manner in which objects are. R.I. Aaron, for example, remarks that

> I understand how particular things retain their particularity whilst yet being classed together, for they share some of their qualities in common. But I do not see how qualities, here in their bare simplicity, can be identified and yet remain distinct particulars (p.179, 1939).

The EU-ontologist's claim that existent universals are abstract or entities which are capable of enjoying a spatio-temporally divided mode of existence does not then mean that existent universals are in some sense less than real, but that existent universals are a different type of entity than physical objects.

A second objection to existent universals is that there may not be an instance of a spatio-temporally divided existent universal. In other words, if we were able to determine the precise shade of all occurrences of red, we might find that no two shades of red are in fact precisely the same. It might then be supposed that because the red of A is not one and the same with the red of B, red is not shareable but particular. However, this is not a good argument against EU-ontology for two reasons. First, as Dawes-Hicks notes, empirical evidence of this order is not possible (Dawes-Hicks 1923, p. 126). But, secondly, even if such evidence were possible, it would not indicate that properties are not shareable, but only that of all

occurrences of the property no two occurrences happen to be precisely the same. Empirical evidence of this sort would not then be sufficient to deny the logical possibility of existent universals.

EU-ontology cannot then be refuted on the grounds that existent universals are in some sense less than real or that the existence of entities which are capable of enjoying a spatio-temporally divided mode of existence is not a logical possibility. This means that criticism of EU-ontology must be based on whether a satisfactory account of objects can be given in terms of properties which are existent universals.

The common argument against the nature of the objects of EU-ontology is the individuation argument. Central to the many versions of this argument is the claim that it is logically possible for two objects to have all their existent universals in common and yet still be numerically distinct. In this chapter, I will consider Black's well-known version of this argument as well as a more elaborate version of an argument offered by Adams. The difference between the two versions lies in the use that is made of the argument's central claim. Black, for instance, devotes his article to constructing a meaningful example of two qualitatively indistinguishable but numerically distinct objects. Adams' version, on the other hand, suggests that if the EU-ontologist accepts the logical possibility of almost identical objects then he should also be willing to accept

the logical possibility of identical objects. The way in which I elaborate upon Adams' argument also differs from Black's argument in that I consider whether properties, as they are conceived of by EU-ontologists, are by their very nature capable of guaranteeing that numerically distinct objects are in fact qualitatively indistinguishable. However, despite the obvious difference between these two versions of the individuation argument, both versions are directed toward the same end, namely to demonstrate that distinct indiscernibles are a logical possibility and therefore that where two objects are qualitatively indistinguishable, the EU-ontologist has no basis on which to individuate or tell the two objects apart.

I. Black's Individuation Argument

In his paper entitled "The Identity of Indiscernibles", Black offers the following instance of two objects which have all their existent universals in common.

> Isn't it logically possible that the universe should have contained nothing but two exactly similar pheres? We might suppose that each was made of chemically pure iron, had a diameter of one mile, that they had the same temperature, colour, 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 (Black 1976, p. 253-54).

In other words what Black is claiming is that if it is not logically impossible for two numerically distinct objects to have all their existent universals in common, then qualitatively indistiguishable objects will not necessarily be numerically identical as the EU-ontologist claims. However, EU-ontologists have not found this argument persuasive. In fact, they flatly deny the logical possibility of distinct indiscernibles. According to the EU-ontologist, if A and B are, in fact, numerically distinct, then, by definition, A must possess an existent universal not possessed by B, otherwise A and B will be numerically identical. One reason for supposing this is that most distinct objects which at first sight appear to have the same properties in common prove to differ qualitatively on closer inspection. The EU-ontologist might then suppose that there will not actually be two objects in the world which are qualitatively indistinguishable and yet numerically distinct. However, if this is what the EU-ontologist takes I I to assert, then, while the EU-ontologist may be right, he is not making an interesting claim as the truth of I I will be contingent on whether at any given time there exist distinct indiscernibles. In other words, what the EU-ontologist would be claiming is not that there cannot be distinct indiscernibles, but that it happens to be the case that there aren't

any. Therefore, if the EU-ontologist wants to deny the logical possibility of Black's two qualitatively indistinguishable spheres, he must hold that I I is necessarily true and not merely contingently true. As Ayer states,

> Philosophically, the grounds for a denial of existence are always a priori. The proof that nothing does answer to a given description is that nothing could, and the proof of this is that the description in question is meaningless or self-contradictory (Ayer 1976, p. 264).

Another way of defending I I against the individuation argument, then, is to claim that not only does nothing answer Black's description, but that nothing could answer it. This, as Ayer states, means that Black's description of two numerically distinct but qualitatively indistinguishable spheres must be either meaningless or self-contradictory. But it is clear, first of all, that Black's description is not self-contradictory. For, as we have just seen, even though there may not be two objects with all their existent universals in common, it is not outside the bounds of logical possibility to say that at some other point in time there might be. However, what the EU-ontologist might question is the meaningfulness of Black's description. The EU-ontologist might argue, for example, that it is a misuse of the term "object" to speak of objects in the plural where

there is commonality. This sort of objection is raised by Ayer at the conclusion of his paper "The Identity of Indiscernibles". According to Ayer, Black's ability to create a counter-example to I I rests on his free use of the distinction between objects and the properties which compose objects. Because Black does not clearly equate objects with the bundle of properties which compose them, this in turn allows him to refer to two spheres and then raise the question of whether two spheres, which he has already distinguished, are numerically distinct even though they have all their properties in common. In this way Black takes for granted what I I is intended to deny, namely, the numerical distinctness of the two spheres. However, the fact that Black refers to two spheres is not in itself sufficient to differentiate the spheres. In fact, says Ayer, it is just this tendency to refer to objects without enumerating their properties which leads us to treat the spheres as numerically distinct. Ayer therefore claims that Black's use of the term "object" involves an illegitimate extension of the concept of number as it is only where there is a difference in properties that Ayer believes that it makes any sense to talk of the plurality of objects.

Although Black does not anticipate this objection, it is fair to assume that he would response by arguing that since it is logically possible for two objects to be

qualitatively indistinguishable and yet numerically distinct there may be plurality even where there is commonality. In fact, even though Ayer attaches some weight to the argument that plurality implies qualitative difference, he nevertheless concedes that this is not an altogether convincing argument. At the same time, however, Ayer is disturbed by the consequences of rejecting I I. If I I were false, then, in the words of Black's fictitious proponent of I I, we could not define identity since the fact that we see one object would not prove that there is only one object and not three or four more objects which are qualitatively indistinguishable but numerically distinct from each other. Proponents of I I consequently feel that it is only if objects differ in at least one property that they can be identified. As Ayer admits,

> It may be that I am unduly suspicious of the category of substance, but I still cannot see how asserting that an individual exists can be to assert anything more than that some predicate, or set of predicates, is instantiated. No doubt there are many philosophers for whom this question presesnts no difficulty; but I am not of their number. And the proof of this is that, in spite of all that can be urged against it, I am still inclined to hold that the principle of the identity of indiscernibles is necessarily true (Ayer 1976, p. 270).

Eu-ontologists such as Ayer therefore believe that while Black's line of argument is persuasive, the

difficulties which it raises for I I are far less severe than those which would arise if I I were abandoned.

II. A Second Individuation Argument

In stating his version of the individuation argument, Black sought to describe a logically possible world in which two objects were qualitatively identical and yet numerically distinct. Black's assumption was that if such a word could be described in a way that was meaningful and not self-contradictory, then there would be no logical reason why it could not exist. While Adams' argument also seeks to establish the logical possibility of distinct indiscernibles, it goes about doing this in a different way. Rather than attempting to describe a fantastic world similar to Black's, Adams shows that the logical possibility of distinct indiscernibles can be plausibly inferred from the logical possibility of almost identical objects. Where my argument elaborates on Adams' argument and, for that matter, Black's argument, is in the stress it places on the nature of existent universals which are claimed to constitute objects.

As we have seen, existent universals are defined in EU-ontology as entities which are capable of enjoying a spatio-temporally divided mode of existence. This means that

the red of A is quite literally one and the same as the red of B. It also means that it is logically possible for A and B to share other properties such as their shape, size, texture, and so on. For example, it is possible for A and B to both be square and large as well as red.

In fact, says Adams, if we accept the possibility of A and B sharing all but one existent universal, we can infer the possibility of A and B sharing all their existent universals without loss of their separate identities. The question is, then: how would the EU-ontologist individuate A and B? Or, to put it less tendentially, how would the EU-ontologist go about enumerating the objects which satisfy a list such as this:

red
square
large
hard

It is clear that the EU-ontologist would argue that if red, square, large and hard are together apt for existence, then only one object can satisfy this list. This does not mean that B cannot have these properties, but only that if B does, then, if B is numerically distinct from A, B must possess a further property which A does not possess, otherwise A and B will be numerically identical. But suppose that the only qualitative difference between A and B is that A is

hard whereas B is soft and, further, that it was only after long and close examination that this difference emerged, say, at t_1.[1] If we consider A and B at t_1, the EU-ontologist would readily agree that A and B are numerically distinct objects as it is at this point that their numerical distinctness is established by reason of their qualitative discernibility. On the other hand, if we consider A and B prior to t_1, the EU-ontologist is committed to regarding A and B as numerically identical as there is no qualitative difference between A and B. The EU-ontologist is therefore forced to claim that A and B are identical prior to t_1 yet numerically distinct at t_1 even though the constitution of A and B has remained unchanged. The EU-ontologist may of course argue that in determining the numerical distinctness of A and B at t_1 he is really affirming the separate identities of A and B even though he thought the two objects were identical prior to t_1. But, as Adams points out in the case of the twins, the numerical distinctness of two objects already existing cannot depend on something that has not yet happened. In other words, A and B are already distinct from each other though nothing has yet happened to distinguish them qualitatively. The numerical distinctness of A and B must therefore be independent of the qualitative difference which later arises at t_1. Consequently, it is logically possible for two objects, such as A and B prior to

t_1, to be qualitatively indistinguishable and yet numerically distinct.

However, the EU-ontologist may respond to the claim that difference is independent of qualitative discernibility by arguing that the above list of properties does not include relational properties and that it is these properties which are capable of differentiating objects. Therefore, while A and B may have all their non-relational properties in common, such as colour, shape, size, and texture, etc., A and B will not be numerically identically unless they also have the same spatio-temporal location. According to this argument, then, only one object can satisfy a list which includes a relational property.[2] For example, only A can satisfy the list:

red
square
large
hard
to-the-left-of

However, even if we assume that relational properties are in some sense unique, we can never say that A differs from B in virtue of having a different spatio-temporal location. In other words, if we assume that "there are two objects, A and B" is equivalent to "A has a property B does not have" and that this unshared property is relational, the fact that this relation is unshared cannot serve to describe A in a

way which does not also describe B. For if A is to-the-left-of-B is to say that the complex of existent universals: red, square, large, and hard, is to the left of the complex of existent universals: red, square, large, and hard, then whatever we say about the complex A, will also be true of the complex B. Or, to put it less charitably, one and the same complex of existent universals will be to the left of itself.

The EU-ontologist is consequently faced with the following dilemma. If objects are composed only of existent universals, then strictly speaking relational properties must also be existent universals and so, like red, square, large, and hard, they must be capable of enjoying a spatio-temporally divided mode of existence. Therefore, while the apparent difference between A and B is that A is to-the-left-of-B, B may also be described as possessing the property to-the-left-of, even though it is to C that B has this relation. However, if we ignore the requirement that relational properties must also be capable of a spatio-temporally divided mode of existence and grant, as above, that there is some sense in which relational properties are unique and, further, that their uniqueness provides a basis on which to individuate objects, then it must be in the sense that they are symmetrical. That is, there must be some sense in which A has this relation to B but which B does not

have to A, otherwise it could be one and the same object which stands in this relation to itself. But in assuming this one assumes that there are two objects to begin with, that is, that A and B are distinct objects and that A happens to be to-the-left-of-B. In short, if relational properties are existent universals, then, like non-relational properties, they can be shared by more than one object and therefore a list which uncludes relational properties will be no more unique than one which does not. On the other hand, if relational properties are not existent universals, then, while this claim requires that we overlook the fact that relational properties are particular and therefore, strictly speaking, incompatible with I I, relational properties will not constitute but rather presuppose the identities of the objects in question. Consequently, something other than a difference in either non-relational or relational existent universals must provide the basis for individuation. For example, objects might be claimed to differ in virtue of their containing particular properties or bare particulars or else they might be claimed to differ in virtue of their being connected with a substratum. But, in this case, a further sense of difference emerges: differing with respect to such individuators as distinct from differing in an existent universal. But this, as we saw in the previous chapter, is unacceptable to the EU-ontologist since it implies that it

is logically possible for two objects to be qualitatively indistinguishable and yet still numerically distinct by reason of their individuating components. The EU-ontologist's only recourse, then, is to contend that entities other than existent universals need only be recognized once the possibility of distinct indiscernibles has been admitted and this of course is something which the EU-ontologist does not do. Although EU-ontologists such as Ayer feel some discomfort in simply denying this possibility, Ayar's rationale is that the consequences of defending I I are far less severe than those of denying it. Consequently, while Ayer would no doubt find my elaboration of Adams' individuation argument persuasive, he would, as in the case of Black's argument, remain inclined to accept I I as a necessary truth.

The shortcoming of individuation arguments, then, is that they are not able to generate consequences that would make I I unacceptable to any philosopher. As a result, the debate between advocates and opponents of I I has remained alive.

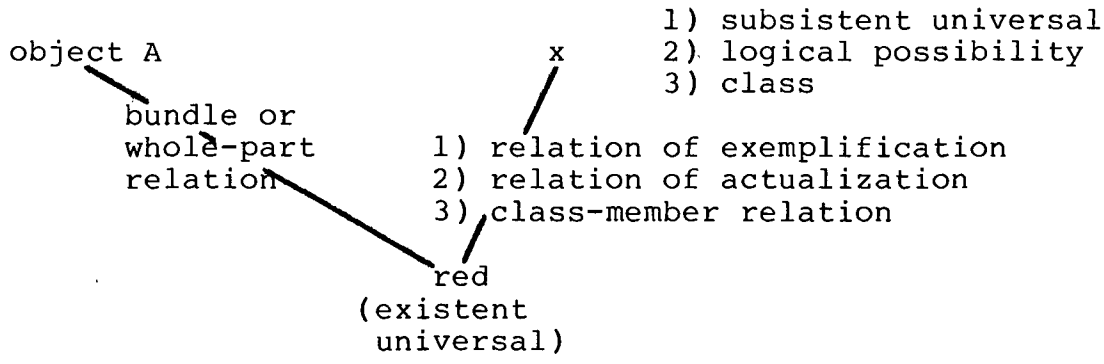
In the next section I offer an argument which philosophers will find conclusive and which has not been offered any place else. This is achieved through a close examination of EU-ontology, specifically, the relation between objects and their properties or existent universals.

III. The Argument From The Nature of Objects

The purpose of the argument from the nature of objects is to show that the ontology which I I entails is unacceptable. As the focus of this argument is on the nature of objects implied by EU-ontology, it is not important to consider here, as in the individuation argument against I I, whether it is logically possible for two numerically distinct objects to be qualitatively indistinguishable. The question is rather whether a plausible ontology can be reconciled with this view. All the argument from the nature of objects requires is that we grant that the EU-ontologist is committed to the six tenets set out at the conclusion of the Introduction.

The argument from the nature of objects is divided into two stages. The first stage establishes that the only entities to which existent universals are related are the objects to which they belong. In other words, existent universals do not have a second relation to subsistent universals, logical possibilities or classes. This is shown by considering what it means to claim that properties are existent universals. The second stage of the argument examines the relation between objects and their existent universals where, as the first stage shows, this is the only relation in which existent universals are relata. The first stage of the argument from the nature of objects therefore

examines the right hand side of the diagram below and the second stage of the argument, the left hand side.



The first stage of the argument from the nature of objects rests on an examination of existent universals. As we have seen, objects are defined in EU-ontology as equivalent to the properties which constitute them. These properties are in turn defined as entities which are capable of enjoying a spatio-temporally divided mode of existence, that is, as universals which exist rather than subsist. The red of A and the red of B are therefore held to be quite literally one and the same. Or, to put it another way, no distinction is made in EU-ontology between the denotation of "red" where is it used as a general term and the denotation of "red" where it is used in sentences such as "A is red".[3] In both cases, "red" denotes a single entity which exists and which is capable of being a constituent of more than one object at one and the same time. This view of properties therefore precludes the EU-ontologist from recognizing

subsistent forms of properties, first, because properties are not spatio-temporally divided and therefore numerically distinct exemplifications of subsistent universals, but one and the same in all their instantations and, secondly, because properties do not exemplify subsistent universals but are themselves universals, in this case, universals which exist rather than subsist. In other words, what the EU-ontologist is claiming is that Plato's realm of eternal and timeless forms is in fact existent. The postulation of a realm of subsistent universals, which are in turn exemplified by existent universals, would therefore be superfluous. The claim that universals are logical possibilities is also incompatible with EU-ontology because it contrues universals as existent and logical possibilities are not existents.

A third sort of relation which might be claimed to hold between the existent universal red and x in the diagram above is a class-member relation. The red of A and the red of B might be thought of as members of the class of red properties which is denoted by the general term "red". However, there are a number of reasons why this view is incompatible with EU-ontology. First, as we have seen, the difference between "red" as it appears in the sentences "A is red" and "red is my favourite colour" is not ontological. In both sentences, "red" refers to the existent universal

red. In the first sentence the existent universal red is attributed to a particular object and in the second sentence it is merely referred to. Secondly, property classes would not be an informative feature of EU-ontology. Each property class would always have one member, as all properties exist, and no more than one member, as all occurrences of a given property are one and the same. Property classes would not then tell us anything about properties that is not expressed by the term "existent universal". And, finally, the function of classes in ontology has traditionally been to account for the similarity between numerically distinct occurrences of a given property. For example, Stout argues that the reason why r_1 and r_2 are red is that they are members of the same class.[4] But, since the Eu-ontologist does not think of r_1 and r_2 as numerically distinct but as one and the same, he does not need to account for their similarity. The class-member relation, like subsistent universals and logical possibilities, is therefore incompatible with EU-ontology.

However, the fact that these three relations and, in particular, the relations of exemplification and actualization are incompatible with EU-ontology, commits the EU-ontologist to the view that even though there may not be any objects which possess the existent universal red, red,

as an "existent" universal, must nevertheless exist. In other words, because the EU-ontologist defines properties as existent universals, he cannot hold that where no object possesses a given property that property does not exist as this would be tantamount to claiming that some existent universals do not in fact exist. The EU-ontologist is therefore forced into the untenable position of claiming that all logically possible shades of red exist, and, further, that these shades exist even though they may not be possessed by an object.

The EU-ontologist might object that all shades of red can exist because their existence is not dependent on objects. This line of argument is similar to Williams' view that properties such as red are fine parts where the term "part" is used in its ordinary sense to refer to an existentially independent entity or an entity which is apt for existence by itself. However, the two views are not identical. Where Williams' view differs from EU-ontology is in what Williams takes "existentially independent" to mean. According to Williams, a property is existentially independent if in principle it can be removed from the object to which it belongs without loss of identity. Williams therefore implies that existentially independent parts must first be parts of objects. For example, if red is

existentially independent, then it must first have belonged to an object, for instance, it must have belonged to a piece of cloth in the form of red dye from which it was then extracted. Williams also holds that once the red dye has been extracted from the cloth, the residue of red dye assumes the status of an object. However, this view is incompatible with EU-ontology. For, first of all, the existential independence of properties cannot depend on their belonging to objects from which they may then be extracted since this implies that in order for a property to exist it must first belong to an object and, therefore, where no object possessed a given property, the existent universal could not be said to exist. Secondly, existentially independent parts cannot be equivalent to objects for if the residue of red dye from one piece of cloth is an instance of the existent universal red and the residue of red dye from a second piece of cloth another instance, then the two spatially separate residues must be one and the same. In other words, if both residues are objects, then, as qualitatively indistinguishable objects they are necessarily numerically identical. Or, conversely, if the two residues are not numerically identical, as the Eu-ontologist would no doubt want to claim, then the only way in which the distinctness of the two residues can be explained is if something other than an

existent universal were to account for their distinctness. But this, too, would be incompatible with EU-ontology since it would be logically possible for two objects to be qualitatively indistinguishable and yet numerically distinct by reason of their individuating components. The EU-ontologist must therefore reject Williams' definition of an existentially independent property as a property whose existence is tied to its belonging to an object from which it may then be extracted. Instead, the EU-ontologist must claim that properties are capable of existing by themselves, per se and in se.

Some advocates of I I may find this feature of EU-ontology unacceptable. Other advocates may remain inclined to accept I I on the grounds that this consequence is still less severe than the difficulties which arise as soon as I I is abandoned. These EU-ontologists might argue that while they are forced to claim that all logically possible properties eixst, it is only if properties are construed as existent universals that the identity of objects can be guaranteed. In other words, these EU-ontologists might claim that if objects are not composed only of existent universals but existent universals plus, for example, a bare particular, it will be logically possible for two objects to be qualitatively indistinguishable and

yet still be numerically distinct by reason of their bare particulars. Consequently, one's observation of a red object would not be sufficient to guarantee that what one in fact observed was one object and not two.

EU-ontologists of this sort are therefore willing to accept the claim that all logically possible properties exist in order to account for the identity of objects. The EU-ontolgist's inclination to hold this view rests on two assumptions. The first assumption is that identity and difference cannot be accounted for in terms of properties which are less problematic. This is an assumption which I do not intend to challenge as the problems of identity and difference are contingent upon whether distinct indiscernibles are a logical possibility, and this, as we have seen, is something which the EU-ontologist flatly denies. The second assumption is that an acceptable account of the nature of objects can be given in terms of existent universals. Advocates of I I clearly see EU-ontology as offering a superior account of objects than other ontologies despite the cotroversiality of the claims that all logically possible properties exist and that these properties are capable of enjoying a spatio-temporally divided mode of existence. In this second stage of the argument from the nature of objects, which corresponds to the left hand side

of the diagram above, I will show that even if the controversiality of these claims if ignored, an acceptable account of the nature of objects cannot be given in terms of existent universals. This will be done by examining the relations which might be claimed to hold between objects and their existent universals, in particular, the whole-part relation and the bundle relation.

As we have seen, the EU-ontologist is committed to regarding properties as entities which are capable of existing by themselves, per se and in se. However, in order to distinguish the whole-part and bundle relation, I will use the term "part", as it is ordinarily understood, to refer to an entity which is a bundle of properties and which is capable of existing independently of the object of which it is said to belong. The whole-part relation will therefore be said to exist between a bundle of properties, such as a steering wheel, and a car. The term "property", on the other hand, will be used to refer to a single existent universal. The bundle relation will therefore hold between a bundle of existent universals which constitute an object and one such existent universal. Another way of distinguishing the whole-part and bundle relation, then, is to say that while both are bundling relations, "whole-part" denotes a relation on which holds between an object and a part which is itself

a bundle of existent universals whereas the term "bundle relation" is reserved for the relation between an object and a single existent universal. Accordingly, the whole in the whole-part relation is composed of parts whereas the bundle in the bundle relation is not composed of parts but of single properties.

In order for the whole-part relation to be compatible with EU-ontology, wholes and parts must themselves be existent universals. There are two reasons for this. First, a bundle of existent universals is no less apt to exist in discontinuous regions of space and time than is a single existent universal. Secondly, if the bundle of existent universals which form a part of one whole were claimed to be numerically distinct from the same bundle of existent universals which form a part of another object, then the difference between the two bundles could not be accounted for in terms of a property of difference, as both parts are bundles of the same existent universals, but must be accounted for in terms of an individuating component such as a bare particular. In this case it would be logically possible for two wholes or parts to be qualitatively indistinguishable and yet numerically distinct by reason of their bare particulars. The whole-part relation must therefore be described as holding between bundles of

existent universals which constitute an object and one such bundle where both the whole and its parts are themselves existent universals. In the case of the car, for example, the bundle of existent universals which constitute the steering wheel form a part of the car. The other bundles of existent universals such as the chassis and engine are also parts of the car; and, thus, together with the steering wheel they constitute the whole of the car.

An immediate objection to this view is that if parts are existent universals, and therefore capable of enjoying a spatio-temporally divided mode of existence, then it is logically possible for car A and car B to have all their parts in common and yet be numerically distinct. But, as we saw earlier, the EU-ontologist might object that this is merely another version of the individuation argument, that is, it raises the possibility of their being two qualitatively indistinguishable objects which are not numerically identical, and this, as we have seen, is a possibility which the EU-ontolgist denies. According to the EU-ontologist, if car A and car B are in fact numerically distinct, then there will be at least one part which A and B do not share. But this claim raises a second and more persuasive problem. Unless the two cars overlapped spatially, and therefore could quite literally be said to share a part, it is not

clear what it means to say that car A and car B are capable of sharing a part let alone all but one part. The notion of a shared or common part is therefore enigmatic.

The second sort of relation which might be claimed to account for the nature of objects is the bundle relation where the term "bundle relation" is used in the restricted sense to denote the relation between an object and a single property. On this view, the existent universal red is said to combine with the existent universals square, large, and hard to form a bundle. It is also possible for the existent universal red, as an entity which is capable of existing in discontinuous regions of space and time simultaneously, to combine with other existent universals such as square, large and soft to form another bundle, B. The bundle relation is therefore compatible with EU-ontology as it supports the EU-ontologist's claim that spatio-temporally separate objects can share one and the same property. However, as we have seen, both the whole-part and bundle relation are bundling relations where the difference between the two relations lies in the complexity of the entities between which the relations hold. Consequently, while we cannot talk of the whole-part relation as holding between an object and a single property if the term "part" is used in the ordinary sense to denote an entity which is capable of existing

independently of the object to which it belongs, we can talk of the bundle relation as holding between an object and a bundle of existent universals. In other words, bundles of existent universals which are themselves apt for existence can in turn combine to form still larger bundles. But, at this stage, bundles are equivalent to parts, that is, like parts, they are capable of existing independently of the larger bundle. In fact, this is just the sense in which the whole-part relation is said to be a bundle relation. However, because the relation between a complex bundle and a smaller existentially independent bundle is equivalent to the relation which we termed the "whole-part relation", the same difficulties arise. In other words, where the connotation of the term "bundle relation" is extended to cover not just the relation between an object and a single property but the relation between a complex bundle and a smaller existentially independent bundle, it is unclear what two complex bundles could have in common unless they overlapped spatially. The EU-ontologist is therefore forced to make the more modest claim that while he is able to account for the relation between an object and a single property, he is unable to account for the more complex bundle relation, or what has been termed the "whole-part relation", which holds between objects and smaller

existentially independent bundles of existent universals.

The EU-ontologist might respond to this objection in one of two ways. He might argue that to say that there exists a commonality between two objects is to say that the two objects share one or more existent universals and therefore to say that two objects have a part in common is really just to say that the two objects share a number of existent universals. But, suppose that A and B are spatially separate objects and that a, b, c, etc. are properties which constitute A and B.

A		B
a	1	a
b	2	b
c	3	c
d	4	d
e	5	e
f	6	f
g	7	g
h	8	h
i	9	i
x	10	y

If we consider properties (a) through (i) separately, the Eu-ontologist would agree that each one of these properties is common to A and B. In fact, he would want to make the stronger claim that the first nine properties are common to both objects and that it is only by reason of a difference

in the tenth property that A and B are numerically distinct. However, if the existent universals 1-5 and 6-10 form parts which constitute A and B in the ordinary sense that they are capable of existing independently of A and B, then the EU-ontologist, because he regards properties 1-5 as common to A and B, is committed to the view that spatially separate objects can have a common part.

The only means by which the EU-ontologist can avoid making this claim is by simply denying it. This would mean that while objects can be composed of parts, parts would be defined as numerically distinct entities, that is, as entities which are incapable of being shared by spatio-temporally separate objects. The grounds for this second argument might then be that because parts, like objects, are existentially independent, they must either be numerically identical and therefore qualitatively indistinguishable or else numerically distinct by reason of a difference in at least one property. The fact that A and B are numerically distinct is therefore taken to imply that the parts of A will be distinguishable from the parts of B; or, more precisely, two otherwise qualitatively indiscernible parts will be distinguished by the fact that one has the property of belonging-to-A whereas the other possesses the property of belonging-to-B. However, this definition of parts is far

too strong. In the first place, where two objects such as A and B overlap spatially, the shared part could not be said to be common to A and B for if the entity is a part of A, then, by definition, it must be numerically distinct from the entity which is a part of B even though the entity is one and the same in both A and B. Secondly, as we have seen, any reference to an object or, in this case, a part in a way which presupposes the identity of the part in question must be cashed out in terms of a general description if I I is to be more than trivially tue. The identity of a given part cannot then lie in the fact that it has the property of belonging-to-A as this immediately presupposes that it is numerically distinct from the part which belongs-to-B by virtue of its possession of this property. In the case where A and B overlap spatially, this is of course something which the EU-ontologist would want to deny.[5] Finally, if parts are claimed to be numerically distinct not by reason of the uniqueness of the properties which compose them but by definition, it will be logically possible for two objects to be qualitatively indistinguishable and yet numerically distinct by reason of the numerical distinctness of their parts. Consequently, the problem which the Eu-ontologist faces is that in claiming that properties are capable of existing in discontinuous regions of space and time

simultaneously, he is also committed to the view that parts, as bundles of existent universals, are also capable of enjoying a spatio-temporally divided mode of existence. The EU-ontologist must therefore settle for the more modest claim that it is only the nature of non-complex objects, that is, objects which are not composed of existentially independent bundles or parts, and not complex objects that he is able to account for. What the argument from the nature of objects must now show is that even this modest version of EU-ontology us unacceptable.

As we have seen, the claim that objects are composed only of existent universals is central to the defense of I I. Unless properties are capable of existing in two places at one and the same time, objects which have all their properties in common will not necessarily be numerically identical. The red of A, for example, is therefore claimed to be quite literally one and the same with the red of B and A and B in turn numerically identical if they share not only the property red, but all their other properties as well. However, this view, that objects are bundles of existent universals, entails two additional claims, both of which are untenable. If "red" denotes an existent universal which is one and the same in all the objects in which it is present, then first of all, the amount of red in the world is not

increased by the number of objects in which it is found and, secondly, there must be as much red in a small object as in a large one. In other words, because all occurrences of red are identical, there will be as much red in the world if there is one red object as if there are one hundred red objects. Similarly, even though the surface of A is smaller than the surface of B, the amount of red will not vary since the red of A is identical with the red of B. These two claims are also true of other properties such as sound, heat, weight, etc. For example, the amount of heat at seventy-five degrees is the same whether there are one or one hundred ovens at seventy-five degrees and, secondly, the total amount of heat present in one oven at seventy-five degrees is one and the same with the amount of heat present in one hundred ovens at seventy-five degrees. Consequently, the EU-ontologist is forced to claim that what appear to be diverse occurrences of varying amounts of red are in fact one and the same.

This consequence is the result of construing properties as existent universals. But, as we have seen throughout this thesis, properties must be construed in this way if I I is necessarily true. The difficulty which confronts the Eu-ontologist is therefore one of explaining what it means to say that A is red without implying that properties such as red do not increase in number or amount with an increase

in the number or size of objects which possess them. In other words, the EU-ontologist must reconcile the fact that A in some sense possesses red with the fact that, given the nature of existent universals, the red of A is identical with the red of B even though the amount of red possessed by B is greater than the amount of red possessed by A. There are two ways in which the EU-ontologist can go about this. He can argue that while red belongs to both A and B, existent universals can be defined in such a way as to allow for the varying number and amount of their occurrences or else he can argue that red is not in fact a component of A. In this next segment, I will consider these two arguments in turn. The first argument, which examines two alternative definitions of existent universals, will be shown to be unacceptable on the grounds that it is not compatible with the tenets of EU-ontology spelled out at the the conclusion of Chapter One. The second argument, on the other hand, is compatible with EU-ontology. It is therefore to this view that all remaining EU-ontologists will be committed. However, as I will also show, this view of the nature of objects is unacceptable.

The first alternative definition of existent universals suggests that if B is treated as containing a second occurrence of the same existent universal red and, furthermore, a larger amount or more of the existent

universal red than A, then properties such as red can be claimed to vary in number and amount. However, this argument is misleading. If all occurrences of red are in fact numerically identical, there cannot be a second occurrence of red and therefore the existent universal red cannot increase in number or amount. Or, to say the same thing differently, if properties such as red were capable of increasing in number and amount, all occurrences of red would not be numerically identical but numerically distinct. In this case, it would be logically possible for two objects to be qualitatively indistinguishable and yet numerically distinct on the grounds that either the red of B would not be one and the same with the red of A but more of the same sort of red which is present in A or else the amount of red present in B will be greater than the amount of red present in A.

The second definition of existent universals is essentially a more elaborate version of the above view. Instead of claiming that the red of A and the red of B are themselves identical occurrences of the existent universal red, what is claimed is that the two occurrences are of one and the same shade. In other words, unlike the above view, it is the shade of red and not the actual occurrences of red which are identical and therefore various occurrences of red may be claimed to differ in number and amount. However,

while it is not the actual spatio-temporal dimensions of the red of A and the red of B which are claimed to be identical but the shade of the two occurrences, the fact that two numerically distinct objects are of one and the same shade must lie in something else. In other words, if the two spatio-temporal expanses of a given shade of red are not themselves identical, then the fact that the two occurrences are of the identical shade must lie in the fact that they possess the same relation to something else. For example, the shades of the two spatio-temporal expanses of red which belong to A and B may be claimed to be identical on the grounds that they are instantations of the same subsistent universal or logical possibility or else on the grounds that they are members of the same class. However, as we saw earlier, these three accounts are incompatible with Eu-ontology. For if A and B are claimed to be of the identical shade of red by reason of their relation to a subsistent universal, logical possibility or class, then the red of A will not be one and the same with the red of B. Or to say the same thing differently, properties such as red will not be capable of enjoying a spatio-temporally divided mode of existence and therefore, contrary to I I, it will be logically possible for two objects to be qualitatively indistinguishable and yet numerically distinct by reason of the numerical distinctness of their properties. The

EU-ontologist is therefore unable to avoid claiming that the number or amount of red in the world does not increase with the occurrence of additional red objects by arguing that there is a sense of the term "existent universal" which does not have this implication.

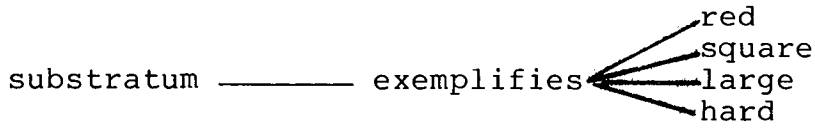
As we saw earlier, the EU-ontologist is unable to account for the nature of complex objects, that is, where the bundling relation is one of whole to part; and, as we now see, in accounting for the nature of non-complex objects, where the bundling relation holds between an object and a single property, the EU-ontologist is committed to supporting the numerical identity of the red of A and the red of B even though B has a greater complement of red than A. The EU-ontologist's inability to offer an acceptable account of both complex and non-complex objects is the result of two claims. The first claim is that properties are existent universals and, the second claim, that objects are bundles of existent universals. In the case of the whole-part relation this means that it is logically possible for spatially separate objects to share one and the same part while, in the case of the bundle relation which holds between an object and a single property, this means that the red of A is numerically identical with the red of B even though the surface area of B is greater than that of A.[6] The EU-ontologist is of course unable to deny the first of these

two claims as it is only if properties are existent universals that I I will be necessarily true. However, the Eu-ontologist may argue that it is not incompatible with the tenets of EU-ontology to deny the second claim that properties are components of objects. In other words, the EU-ontologist might argue that he is only committed to the untenable position that the number and amount of a property does not increase with an increase in the objects which possess the property if existent universals are components of objects. Therefore, by denying this second claim, the EU-ontologist might hope to avoid this unacceptable consequence. This defense might then be supported on the grounds that sentences such as "A is red" do not indicate a relation between an object A and one of its component properties, but a relation between an object and a property where the property is not a component of A but, rather, is exemplified by A.[7] In this way, the EU-ontologist does not commit himself to the view that the red of A and the red of B are numerically identical even though B's complement of red is greater than A's since red is not claimed to be a component of A or B. This view therefore appears to have the advantage of explaining the relation between objects and their properties without implying that properties cannot vary in number or amount. The question is, does this view entail an acceptable ontology?

The view that properties are not components of objects is a view that has been espoused most notably by substratum theorists. Substratum theorists argue that, among other reasons, substrata are needed to hold together the various properties attributed to objects. This view has four implications. First, contrary to the theory of bundle relations, objects are not reducible to the properties which compose them, but to a group of properties plus a substratum. Second, although the group of properties and their substratum are said to form an object, strictly speaking, the term "object" denotes the substratum and the term "property" the properties which are attributable to the object or substratum. (Some substratum theorists claim that this ontological distinction is determined by the nature of ordinary language. For example, sentences such as "A is red" are claimed to imply that the object itself must be distinct from all of its properties.) Third, properties are not components of objects. According to the substrata theorist, objects or substrata are propertyless. And, fourthly, the group of properties which are attributable to an object do not themselves form a bundle which is in turn supported by a substratum. Rather, it is substrata and not a bundle relation which binds properties together. In Dr. Sikora's words, substratum can be thought of

> as if it were a lump of modelling clay and properties as the shapes that may be given to the modelling clay (Sikora undated, p. 2).

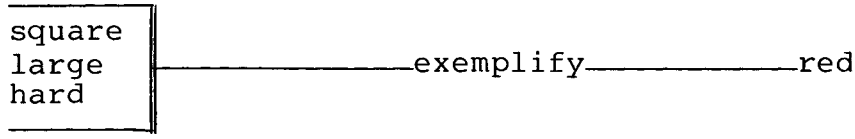
Therefore, while the substratum has properties, these properties are not components of the substratum in the sense that substratum, or modelling clay, is not reducible to its properties. Another way of characterizing the substratum theory, then, is to say that the substratum or modelling clay exemplifies its properties. For example,



The feature of the substratum theory which is most attractive to the EU-ontologist is the claim that properties are not components of objects but rather exemplified by objects. However, it is also clear that the substratum theory and EU-ontology are not compatible. For, as we saw earlier, it is logically possible on the substratum theory for two objects to be qualitatively indistinguishable and yet numerically distinct by reason of their substratum or, in terms of Dr. Sikora's analogy, by reason of the numerical distinctness of the clay from which properties such as shape

and size emerge. Therefore, in order for the EU-ontologist to preserve the claim that properties are not components of objects, objects must be characterized in some other way than as substratum.

There are three ways in which the properties of objects might be claimed to be exemplified by objects. The first way is to argue that if red, square, large, and hard are attributable to A, then sentences such as "A is red" mean that square, large, and hard exemplify red, i.e.,



Accordingly, if red is not a component of the object A but exemplified by A and if the object A is, in this case, identified with square, large, and hard, the colour red must emerge when the existent universals square, large, and hard are combined together. However, this view, which is termed the principle of emergence, is incompatible with EU-ontology. To begin with, an account of what binds square, large, and hard together is required. If it is a bundle relation, then square, large and hard must be components of A. On the other hand, if it is a substratum, square, large

and hard will be supported by an entity which is capable of individuating qualitatively indistinguishable objects, and therefore qualitatively indistinguishable objects will not necessarily be numerically identical. Moreover, the EU-ontologist cannot assume that square, large, and hard in some sense form an object which is distinct from red since A can be said to exemplify square or large or hard. In other words, if A is claimed to be square or large or hard, then the problems stated with regard to the exemplification of red will also apply to these properties as well.

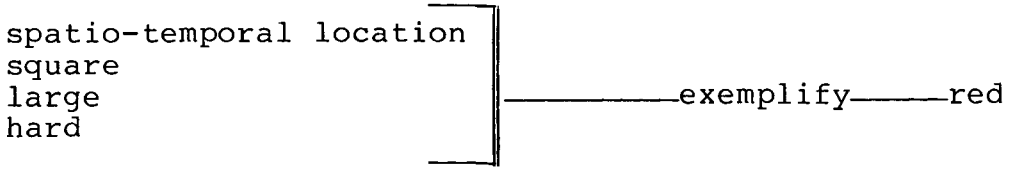
A second and similar concept of objects is the view that square, large, and hard do not exemplify red as a group but individually. Unlike the preceding view, the EU-ontologist is not required to provide a binding relation such as a substratum, or bundle relation as there are, strictly speaking, no properties to bind together. A diagram of this view would look like this:

square——————exemplifies——————red
large——————exemplieies——————red
hard——————exemplifies——————red

According to this view, square, for example, is in some sense accompanied by large and hard but, more to the point, square is claimed to exemplify red. It is therefore possible on this view for an existent universal such as square to be colour, shape, size, etc. However, this claim if clearly

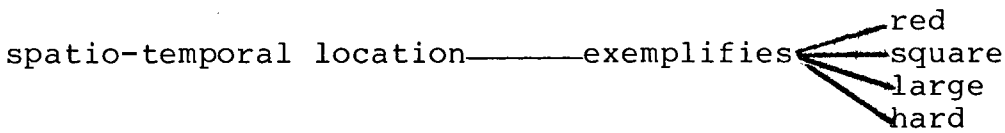
unacceptable. First of all, it is not clear what sense square is accompanied by large and hard. And, secondly, not only is it absurd to say that a single existent universal such as square can be red, but if we described A as red, square, large, and hard and then said that A was also green, it would follow that each of the existent universals would be green including the existent universal red.

Finally, the third and most plausible version of the theory that the properties of objects are not components of objects is the view that A denotes a spatio-temporal location. Sentences such as "A is red" are therefore interpreted as stating that red occupies a certain spatio-temporal location. Similarly, square, large, and hard will also be claimed to occupy the same position in space and time. However, there are two ways in which the relation between spatio-temporal locations and properties can be construed. First, the spatio-temporal location together with square, large, and hard can exemplify red. For example,



But, in this case, the EU-ontologist incurs the difficulty

above, namely, that spatio-temporal location, square, large, and hard must either form a bundle or else be supported by a substratum. The second way is to claim that the spatio-temporal location exemplifies red as well as square, large, and hard. In other words,



Sentences such as "A is red" would therefore imply that properties like red are distinct from but attributable to A in much the same way that properties are distinct from but attributable to substratum. However, the difficulty with this view is that we cannot say that a given spatio-temporal location exemplifies red, square, large, and hard since location does not constitute the identity of objects but presupposes it. In other words, it is only after we have first identified an object as red, square, large and hard and then determined its spatio-temporal position with respect to other objects that we can say that an object has a certain position. Moreover, this position will be relative to the positions of the objects with which it is compared and therefore the same object may be variously described as occupying the positions left, right, above, and below

without ever moving.[8]

This latter view, which asserts (1) that properties are not components of objects and (2) that objects are spatio-temporal positions, is the most plausible ontology to which the relative space and time version of I I can be reduced. However, the difficulty with this view is that it does not offer an account of the nature of objects let alone an acceptable account. This is due to the fact that spatio-temporal positions cannot be identified with objects since they presuppose rather than constitute the identities of the objects in question. The EU-ontologist's final line of defense might then be to argue that it is only if spatio-temporal positions are placed within a framework in which they constitute the identities of objects that it is possible to offer an account of the nature of objects which is compatible with I I. Some philosophers such as D.J. O'Conner feel that absolute space and time provides just such a context.

Notes to Chapter Two

1 This argument parallels Adams' case of twins whose lives are qualitatively indistinguishable until at the age of 27 they have different dreams (Adams 1979, p. 17-19).

2 The principle which this argument is required to preserve is that descriptions or lists must be general in order to avoid presupposing the identity of the object in question. A list may not then contain reference to any object which is not itself cashed out in this general way. A's having the relation of being identical to itself or the relation of being different from B are not then acceptable. Similarly, specific spatio-temporal co-ordinates such as x_1, y_1, z_1 at t_1 are also unacceptable as they are not general but particular.

3 The EU-ontologist can of course use "red" as a general term. However, the difference between the two uses does not lie in the type of entity denoted, but rather in what is said. For example, the statement "A is red" attributes red to a particular object whereas "red is my favourite colour" merely refers to the colour red without attributing it to any object.

4 It is worth noting that Stout does not regard the class-member relation as a relation but as a "fundamentum relationis" or fundamental unity and that Williams in turn claims that Stout's fundamental unity can be reduced to a relation of resemblance. But, here, too, the concept of resemblance would not be of use to the EU-ontologist.

5 A further problem is that if parts are claimed to be numerically distinct by virtue of belonging to numerically distinct objects, then the same will be true of single properties. For example, the red of A will be numerically distinct from the red of B by virtue of its belonging to A and this of course is contrary to the EU-ontologist's claim that properties such as red are capable of enjoying a spatio-temporally divided mode of existence.

6 This argument may also be used against complex objects. In this case, it would be claimed that the number of parts, which are composed of all and only the same existent universals, is always the same. Similarly, two parts, which are composed of all and only the same existent universals, are numerically identical even though one part may be consierably larger than the other.

[7] The term "exemplify" can be used in one of two ways: (1) as expressing a relation between an object and a property where the property is contained in the object or (2) as expressing a relation between an object and a property where the property is not contained in the object. In the argument that follows, I will use the term in the second sense.

[8] A fuller account of the conditions which the relative view of space and time imposes an EU-ontology is given in Chapter One.

CHAPTER THREE

ABSOLUTE SPACE AND TIME

In his paper in support of the controversial form of I I, D.J. O'Conner argues that there are other factors which bear upon the truth of I I but which have generally been thought of as peripheral. One such factor concerns the denotation of the term "property". Traditionally, the term has excluded the relational properties of spatial location and temporal location, since these properties have been felt to presuppose the existence of objects such that if A exists then and only then can A be said to have a given relation. Relations have therefore been considered as irrelevant to the identity of objects and therefore to the constitution of objects. But, according to O'Conner, this custom begs the question in favour of opponents of I I. For, if spatio-temporal properties were recognized properties of objects, then distinct objects would have different spatio-temporal locations. A difference between objects would therefore necessarily imply a difference between properties.

O'Conner's view is similar to EU-ontology in one

important respect: O'Conner does not regard instances of non-relational properties as in some sense numerically distinct as this, rather than spatio-temporal location, would provide a basis for individuation. Like EU-ontologists, O'Conner construes non-relational properties as existent universals. However, despite this agreement on the nature of non-relational properties, it is evident from O'Conner's recourse to relational properties that he does not feel that non-relational properties can guarantee the truth of I I. According to O'Conner, this guarantee must instead come with relational properties but, more importantly, with relational properties which do not presuppose the identity of objects.

As we have seen, this type of analysis has been rejected on the grounds that relational properties such as "to-the-left-of" presuppose the identity of A as well as the identity of B to which A is to the left. However, O'Conner argues that the spatio-temporal position of A need not be determined by its relative position to B, but that the position of A can be stated independently of B, that is, it can be stated in its own right or absolutely. The sort of system O'Conner has in mind is one in which the spatio-temporal positions of objects are assigned a co-ordinate in a network of axes in absolute space and time. For example, A, which is red, square, and large, might have the

assignment x_1, y_1, z_1 at t_1 whereas B, which is also red, square, and large, might be found at x_2, y_2, z_2 at t_2. Any object will therefore be identifiable by reference to its co-ordinate. But, more importantly, the validity of I I will be guaranteed by the fact that spatio-temporal properties are intrinsically incapable of being shared by more than one object. In other words, contrary to the relative space-time version of I I, identical objects must share their relational as well as all their non-relational properties. Conversely, a difference between individuals will be expressed as a difference between properties where those properties are ultimately spatio-temporal.

Unfortunately, O'Conner does not offer an account of absolute space and time. In fact, he doesn't explicitly mention it other than to say that considerations of space and time clearly bear upon the truth of I I. However, an account has been offered by the late Russell (Russell 1948). According to Russell's analysis, objects form a "complete complex of compresence", that is, a compresence which consists of both non-relational properties such as colour, shape and size and the relational properties of space and time. As we have seen, non-relational properties are not sufficient to distinguish objects for even though the time order of my experience of colours might be the existent universals red, green, red, it will follow that the

existent universal red is experienced before itself. Similarly, if the three colour experiences are left, center, and right in my visual field, the existent universal red will be to the left (or right) of itself. This, however, is not the case with relational properties. If A is at t_1 and B is at t_2, then A will precede B. Similarly, if A is to the left of B, then A cannot also be to the right of B. According to Russell's theory, then, it is necessary to establish a space-time order in order to distinguish objects or individual experiences, that is, in order to as it were tie non-relational properties to points in space and time which are intrinsically unique. A complete complex of compresence is therefore enumerated by listing both its non-relational and relational properies. For example, A might be described as consisting of the existent universal red and left at t_1, where "left" denotes the left side of my visual field and t_1 either the time on a clock or a sense of subjective past or presentness. Thus, instead of saying "This is red", we might say that "Red is compresent with left at t_1".

There are, however, a number of serious objections to this analysis. First of all, it is not clear what exactly would make distinct points in space and time different. We could not, for example, say that the spatio-temporal location of A is different from that of B, that is, that A is either to the left of or before B, as this would imply

that A's position is determined by reference to its relation to B. Rather, we must be able to determine spatio-temporal positions outright or in themselves. The sort of thing Russell has in mind relies heavily on our perception of space and time. For example, although my perception of the non-relational properties of A yesterday may be qualitatively indistinguishable from my perception of B today, as a complete complex of compresence, that is, as a bundle which includes relational properties, A will differ from B insofar as it was perceived yesterday. Similarly, if A occupied the left of my visual field, then even though B, which is located to the center of my field of vision, has the same non-relational properties, A will be distinguished by its position. A can therefore be described as occurring yesterday or as located to the left of my visual field without reference to its relative position to B.

There is perhaps some sense in which objects of perception have the character of obsoluteness. For example, in recalling my perception of A yesterday, it is not necessary to add that this occurred prior to my perception of B today. But this is not the point of the objection. The point is that if spatio-temporal locations are properties as Russell claims, then how is one space-time point distinguished from another? What, for example, is the difference between the properties t_1, t_2, and t_3 or left,

center, and right or, for that matter, left on one occasion and left on another occasion? Put in this way, it is evident that there is no difference, that space-time points are voids in which non-relational properties inhere and in this sense they are qualitatively indistinguishable. This means that spatio-temporal properties do not constitute the identity of objects as spatio-temporal positions are, first of all, qualitatively indistinguishable and secondly, something which all spatio-temporally located objects have in common.

A further consequence is that absolute space-time bears adversely upon the I I. If A is constituted by red, square, left at t_1, then A will be qualitatively indistinguishable from B although B is reducible to red, square, center at t_2, for not only will A and B share the same non-relational properties but the same relational properties insofar as "left" and "center", "t_1" and "t_2" denote qualitatively indistinguishable voids. In other words, the late Russell and O'Conner will be forced to say that even though A and B are located at a different time and at a different place they are identical. Conversely, if it is argued that left and center and t_1 and t_2 are in some sense distinct, then, contrary to I I, spatio-temporal locations will be distinct even though they are qualitatively indistinguishable. Accordingly, if the voids to which the relational properties

of A and B are reducible are indiscernible but distinct, then if A and B also have their non-relational properties in common it will be possible for two objects to be qualitatively indistinguishable and yet numerically distinct. Consequently, if spatio-temporal properties are indiscernible and therefore identical, they will not constitute the identity of objects. On the other hand, if they are indiscernible but not numerically identical, then, contrary to I I, it will be logcally possible for two objects to be qualitatively indistinguishable and yet numerically distinct.

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