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# **PRESENT AND ABSENT PROPERTIES\***

### 1. THE ASYMMETRY BETWEEN PRESENCE AND ABSENCE

I propose to advance the thesis that there is a fundamental resemblance between (what I shall call) full-fledged universals and particulars, and that this resemblance is singularly helpful in illuminating a large number of basic issues. The one aspect in which universals may be said to be most strikingly congruous with particulars is in the lack of complementarity between their absence and presence, that is, in the radical differences that exist between a situation in which a property is exemplified by a certain individual and one in which an individual lacks that property. To give a rough indication of what I mean, it will be best to begin by outlining the alternative view to mine, the view according to which there is a basic complementarity between the absence and presence of any given property. There are many philosophers who hold that properties or universals exist in pairs, each having its unique counterpart. The removal of a given property P from an individual that has been exemplifying it, automatically results in that individual's acquisition of the unique alternate of P, property P'. Everything has P or P', and never both. For example if we were to take a metallic assemblage m and drop it from a considerable height, then these philosophers would find the statement 'The impact of the solid floor causes m to acquire the property of nontypewriterhood' as appropriate as the statement which referred to m's loss of the property of typewriterhood. Then again, after having had m repaired, they will find 'm no longer exemplifies nontypewriterhood' just as acceptable as the statement 'm once more exemplifies typewriterhood.'

Admittedly, nontypewriterhood is not comparable in every respect to its complement; only the latter is a useful property and the set of particulars and the set of objects exemplifying it is far smaller than the set the members of which exemplify the former. The essential point, however, is that there is no basic qualitative difference between the two. Both of them have substance; both are genuine, full-fledged properties. In general, P and its negative substitute P', are just as

Synthese **68** (1986) 309–331. © 1986 by D. Reidel Publishing Company. determinate, their presence or absence are equally observable, and we fully expect a specific set of behaviour to be displayed by all those exemplifying either of them. And just as there is a specifiable set of causes which will bring about the acquisition of P by a given individual so is there a specifiable set of causes ensuring the acquisition of P'.

In this paper I am going to expound an essentially different view concerning the basic nature of properties, one according to which universals are very much like particulars with respect to complementarity. I shall attempt to show that given for instance that  $P_1 i = i$  is a typewriter, and  $P'_1 i = i$  is nontypewriter, then it is a very straightforward matter to determine that to assert  $P_1 i$  amounts to ascribing a genuine property to *i*, whereas the assertion  $P'_1 i$  ascribes no property of any sort to *i*; it merely denies that the property  $P_1$  is exemplified by *i*. As we shall see there are several criteria, each of which may clearly be formulated and easily applied with the aid of which one may decidedly establish that " $P_1$ " may therefore be aptly called a positive predicate, as it positively attributes a genuine property to its subject, while " $P'_1$ " just negates the presence of  $P_1$ .\*\*

#### 2. POSSIBLE WORLDS

We shall now examine the nature of different predicates. Our inquiry will reveal a considerable variety of predicates. Some of these are of little interest to the practical scientist either because they are nonphysical in the sense that it is not by physical operations that one determines whether they apply to a given particular or because neither they nor their negations implies anything significant about some other observable feature of a particular to which they apply. We shall begin by looking at a set which divides into positive and negative terms, the set of predicates that is of genuine concern to the working scientist.

Most philosophers hold that, for instance, Socrates – or at least a counterpart of Socrates – exists in many possible worlds. At the same time it is clear that there are infinitely many worlds in which neither Socrates nor any of his counterparts exist. Thus, we may describe one of the important features of the basic asymmetry between 'x is Socrates' and 'x is not Socrates' by saying that the former is false for any x in a large set of possible worlds, while the latter may be truly asserted about some x in every world. Suppose it were objected: what about a world in which absolutely nothing existed, but Socrates? The answer is that

Socrates has eyes, arms, legs and other bodily parts that are not themselves Socrates, and thus even that universe includes something that is not Socrates but merely an eye, etc. Furthermore, on adopting even just such a lenient essentialist criterion whereby nothing can qualify as Socrates unless it has at least a physical body and that such a body occupies space, it may be said that even in this bizarre world there would have to be space to accommodate Socrates and that space would be something not identical with him.

Obviously, here we are confronted by a striking parallel between universals and particulars. It is quite evident that while there are infinitely many possible worlds in which any specified positive term cannot be predicated of anything, there is not a single world in which any negative term that can be thought of, may not be predicated of something! Clearly, for instance, there are infinitely many possible worlds which do not contain a single individual to which the property of ravenness belongs. On the other hand, nonravenness must of necessity be exemplified by something in every possible world, since just as with Socrates, inevitably in every possible world there must be some thing that is not a raven.

To put it somewhat more perspicuously, as long as it is obvious that there is no possible universe in which everything without exception is a raven, it follows, for example, that in every universe there must be *some* thing that is not a raven. There is no room left for wondering if perhaps some possible universes are devoid of any substantial enough existent to qualify as a 'thing', for then in these peculiar universes there would be absolutely nothing exemplifying nonravenness – contrary to what has just been said. It is to be realized that in its present usage the word 'thing' is assigned the broadest possible sense; whatever can be made reference to, including absolute void, qualifies for that adjective. 'Nonravenness' may therefore legitimately be predicated of complete nothingness too.

I should like now to draw attention to the very useful fact that what has been said so far provides us with a concise definition of a positive term (denoting the exemplification of a substantial property by a particular) and a negative term (indicating that the particular in question is bereft of that property):

 $(D_1)$  A positive predicate is one that is inapplicable to *anything* in some possible worlds. A negative predicate has application in every possible world.

Instead of  $(D_1)$ , which refers to linguistic entities, we may of course use  $(D'_1)$ , which makes an ontological assertion concerning properties rather than predicates:

 $(D'_1)$  A genuine property is present or is exemplified in some, but not in all possible worlds. Every possible world contains, however, something that fails to exemplify a given property; something from which a given property is absent.

We must make sure to realize that we determine for instance 'raven' to be a positive and 'nonraven' to be a negative predicate not on the basis of the presence of the negative 'non' in the latter and not the former. We do so with the aid of one of the several universally applicable clearly formulated definitions available for that purpose of which  $(D_1)$  is one.

It may also be pointed out that a statement parallel to  $(D_1)$  exists which conveys the asymmetry between absence and presence of particulars;

 $(D_1^*)$  Any given particular may be present in some, but not in all possible worlds.

Every possible world contains, however, something that is not that particular. It goes without saying that we do not require  $(D_1^*)$  to help us to determine whether we are confronted with a particular or not.  $(D_1^*)$  is however a useful expression to highlight a most important analogy between properties and particulars.

### 3. THE PRESENCE OF NEGATIVE TERMS

The elementary point made in the last section will be of great help in bringing clarity to basic issues involving physical properties. There is a time-honored theory according to which substances are not simply the properties we associate with them. They must contain something in addition to these, and that something is called a 'bare particular.' Thus, if we stripped a given individual of all its properties, we would be left with the empty bearer of these properties, a particular that was devoid of all properties. Douglas Greenlee dismisses this theory in a single sentence:

To accept . . . that there are particulars bare of properties ("bare particulars") would be to accept a contradiction, for if a particular is bare, then it has the property of having no

properties, and hence is not bare, in the general sense of "bare" (the sense of being stripped of all properties whatsoever) that is of interest in general ontology.<sup>1</sup>

One is bound to wonder whether such a historically important view held by a considerable number of thoughtful people is likely to be demolished so easily as this. Indeed, the more one thinks about it the more evident it becomes that some basic misapprehension must be underlying Greenlee's approach. For first of all, if we were to leave his assumptions unquestioned then we should be compelled to assign to bare particulars not the property of having no properties but instead indefinitely many other properties. Clearly, a bare particular is definitely not a raven, not a cheeseburger nor a battleship, etc., hence the properties of nonravenhood, noncheeseburgerhood, nonbattleshiphood, etc., are exemplified by it. Perhaps what is even more remarkable is that not only is it impossible to lay any particular completely bare, it is not even possible to decrease at all the number of properties it possesses! Inevitably, every time we remove a given property immediately another takes its place. Suppose we are confronted with a healthy, black, winged raven. Strip it of its health, it at once acquires sickness; of its blackness, automatically it picks up nonblackness; of its wingedness, it immediately gains nonwingedness. If we obliterate its ravenhood, thereby we turn it into a nonraven; should we stop it from being a bird we endow it with nonbirdness. Upon losing its animalhood it captures the property of nonanimalhood.

But perhaps the most puzzling feature of the situation we are facing (if we go along with Greenlee's basic presupposition) is that not only does the theory attacked by him turn out to be untenable but so do its competitors, in particular its major competitor, the 'bundle theory.' Very roughly, the essential difference between the two doctrines is that, according to the first, the many properties of a given individual are held together by something like an inert container, whereas the second, more parsimonious, doctrine dispenses with this featureless propertyreceptacle and holds that an individual is nothing more than the bundle of its properties. Consequently, while according to the first doctrine, removing all the properties of an individual results in being left with a completely barren particular, according to the second doctrine even this much we are not left with. But the question to be asked is how can any such thing be accomplished when the number of properties in any bundle can never diminish?

But now that we have reached this extreme point, it should be easier to see where we went wrong in the first place. Let us consider a region of space R which is completely devoid of everything. Not only is there no matter in R, but it is also free of all radiation and fields of force. Rshould be regarded as a perfectly barren region bereft of everything of substance. This being so it stands to reason that any term which can truly be predicated of R is a negative term denoting the absence of a property.

It should be obvious therefore that the ontological doctrines we have referred to are not in real jeopardy. Greenlee's phrase "the property of having no properties" is an abbreviation for the indefinitely long conjunction "having no ravenness and having no typewriterhood and etc., etc." Each of these conjuncts is negative in the sense that it signifies the absence of some genuine property. A bare particular is bare in the required sense, namely, in the sense of being stripped of *all* genuine properties, none of which are present in such a particular.

We are now in the position to formulate another concise definition:

(D<sub>2</sub>) Positive predicates are predicates that do not, while negative predicates do, apply to bare particulars or to an absolutely featureless void.

At this stage it will be enlightening to introduce the principle:

( $\emptyset$ ) "P" is positive if "-P" is negative.

On a superficial look  $(\emptyset)$  may appear to be false. For example, if 'transparent' stands for a property, then 'nontransparent' should denote its absence. But surely opaqueness or the ability to obstruct the passage of light is a positive power and should not arbitrarily be declared to amount to nothing but the lack of transparency.

Armed with our definition it is easy to achieve full clarity of this matter. There are many particulars, e.g., the Battle of Waterloo or my cousin's 21st birthday, of which neither transparency nor opacity can be predicated. Unquestionably a bare particular is one of these. It follows therefore that both 'transparent' and 'opaque' are positive terms. Only a term which denies the presence of both of them is a negative term. It should be noted that when in the course of a normal conversation we speak of a solid brick-wall as being opaque we do not merely claim the absence of transparency but in addition we also ascribe the property of opaqueness to it.

To put it differently, by  $(D_1)$  for instance, if there exists some possible world in which a predicate 'P' has no application to anything at all, then it is a positive predicate; if no such world exists then it is a negative predicate. However, inevitably, such a world either exists or it does not exist – there is no third possibility. Consequently, a predicate cannot be anything else but either positive or negative. The predicate 'transparent' would for example be inapplicable to anything whatsoever in (one of the better known possible worlds described by Strawson) a world in which nothing but sounds of different pitch and timbre exist. How about 'nontransparent'? Obviously if 'nontransparent' is taken to apply to anything of which 'transparent' cannot be predicated, that is, not only to material which blocks the passage of light but also to particulars like events and musical notes then there exists no world where the predicate is inapplicable to something and is therefore negative.

Similarly 'blue' is positive. 'Nonblue,' if it is meant to refer to some color other than blue, is also positive. However, when it is used to apply to anything whatever of which 'blue' cannot be predicated it then obviously is a negative predicate.

# 4. ADDITIONAL KINDS OF PREDICATES

Let us look at three seeming objections to what has been said so far. It is to be hoped that a discussion of these will help in finding the correct answer to a few other objections that may look plausible to some.

**OBJ** 1: "Being a raven or a nonraven" appears to be a negative predicate. The term certainly satisfies  $(D_1)$  in order to qualify as negative. The same goes for "being identical with itself" or "not having a circular-square shape."

Such predicates may seem to constitute a source of difficulty to our approach. We have maintained that a negative predicate signifies the absence of a given genuine property. For instance 'nonraven' which  $(D_1)$  determines to be a negative term indicates that its subject stands for something that lacks the genuine property of ravenness. However, the predicates we have just mentioned seem bereft of this vital feature; it is hard to see what genuine property does a particular lack by virtue of, for instance, "being identical with itself" correctly applying to it. Admittedly ascribing that term amounts to denying of its subject that it

fails to be identical with itself. Many philosophers, however, would not feel comfortable with the suggestion that not being identical with itself is a genuine property comparable to redness or wisdom, in view of the fact that it is not exemplified by anything in any possible world.

The answer is, however, that all the predicates we have just mentioned have the significant characteristic of applying *necessarily*. Their status may be claimed to differ radically from the status of contingent predicates. It is not for example, part of an empirical scientist's business to advance a generalization like  $(x)(Px \supset Qx)$ , where Q necessarily applies to individuals exemplifying P. Necessary properties play no proper role in the physical sciences.

Another interesting point to be made is by mentioning (something to be discussed in greater detail later) that resemblance among particulars can be indicated with the aid of positive predicates only. For instance, upon hearing of two individuals that they are both ravens, we are bound to think of them as being alike to some extent. Suppose now that we were asked to name two particulars as dissimilar as possible. A fairly adequate reply could be: a and b, where a is the thirstiest water buffalo and b is my cousin's 21st birthday. Yet both a and b are nonravens, nonbattleships, nonwisdom, etc. Clearly, therefore, the fact that two individuals share infinitely many "property-absences" is compatible with their being even the two most dissimilar particulars in the entire universe. Nevertheless, negative predicates are not altogether useless for the purpose of comparing different particulars. They can be useful in indicating various degrees of *dissimilarities*. Suppose it is given that ris a raven. I could then impress upon my audience that b differs from rby asserting that b is a nonbird. Should I wish to indicate a greater difference I might say "b is a nonanimal," and yet a greater one by saying "b is a nonmaterial object." Even this much can, of course, not be done with necessary predicates; they are utterly useless as a tool for comparison.

Finally, it is obvious that of the three kinds of predicates so far mentioned, the positive ones are rarest; there are worlds in which they do not apply to anything at all, whereas negative predicates apply at least to something in every world. Necessary predicates are, however, perfectly ubiquitous; there is not a single thing in a single world to which they fail to apply.

OBJ 2: It seems highly reasonable to claim that terms like 'omnipotent'

and 'even' are positive. Now God has routinely been claimed to be a necessary being by theologians and therefore present in every possible world. Mathematicians, as a rule, have said the same about numbers. But then omnipotence which is one of the Divine attributes is exemplified in every possible world and so is evenness which is the property of many integers. By  $(D_1)$  therefore 'omnipotent' and 'even' must be judged to be negative terms.

The alert reader will probably have realized some time ago that all the claims made in the previous sections were confined to physical properties, that is properties exemplified by particulars that are part of the physical universe. Divine omnipotence is of course not exemplified by a particular contained by the material world and is therefore not a factor in determining whether omnipotence as such is, in a relevant sense, present in a given world. Evenness is altogether not the kind of property that can be exemplified by concrete particulars.

It may be worth pointing out that bare particulars – even by those who believe in them – are by no means to be counted among fullfledged physical universals. Nobody would claim for instance, about two perfectly vacant regions of space that here we have utter void but over there we have a bare particular – the two regions being absolutely indistinguishable physically.

It seems that now we have been led to yet another useful definition:

 $(D_3)$  Negative terms apply, positive ones do not, to abstract entities.

Definition  $(D_3)$  requires some elaboration. A number of objections seem possible. It could for example be asked, that physical bodies may have the property of being thought about by Fred and so, of course, may abstract entities? To this one may reply that what is being involved here is not a genuine, but merely what has been called a 'Cambridge' property, something we are going to discuss presently. But what about a property like having any two of one's sides larger than the third, or having more height than width which may be exemplified by abstract geometrical entities like a Euclidian triangle or a three-dimensional figure respectively, as well as by a concrete body, like a metal box?

The answer to these kinds of objections is, that in general, all the characteristics of an abstract entity differ basically from those of a physical individual in that the exemplification of the former is determined by logical deduction or by stipulation, whereas, the exem-

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plification of the latter has to be established by some experimental method. Given, for instance, that a plane figure is an Euclidian triangle, we arrive deductively, from the axioms of geometry at the conclusion that any two of its sides are together larger than its third side; and whether or not a solid figure is of greater height than width depends on what we stipulate to be the case. To a concrete metal box we can, of course, not ascribe properties by anything like stipulation or logical maneuvering; we determine all its properties by observation. Because of the fundamental difference between the operations required for determining their properties it makes good sense to regard a statement ascribing, for instance, triangularity to an abstract figure and to a concrete physical body as having basically different meanings and thus, the properties of triangularities attributed to these different entities as being substantially different properties.

For a moment it may seem that one could object that being nontriangular should also be regarded as being a basically different property when exemplified by, say, an abstract geometrical circle and when exemplified by a metal box since these exemplifications are established by basically different methods. However, we must not forget that there is a unique method with the aid of which the nontriangularity of a particular may be established equally well in both cases. It is sufficient to be told that a certain positive term – e.g., 'circular' – is correctly predicated of something, to be able to infer, regardless of whether that thing is abstract or concrete, that the negative term 'nontriangular' applies to it.

OBJ 3: "Being within ten miles of a tree" seems to be a positive predicate; there are worlds in which it applies to absolutely nothing, i.e., in completely treeless worlds. We note, however, that the negation of that predicate is also positive by  $(D_1)$ . In a world in which trees are distributed close enough to one another, nothing may be situated further than ten miles from a tree, and thus there is nothing to which "Not being within ten miles of a tree" is correctly applied. But this violates our principle ( $\emptyset$ ).

Similarly "being thought about by a sentient creature" does not apply in every world. But it looks like we may coherently speak of a world which is inhabited by a sufficient number of sentient beings with adequate capacity for comprehension, appropriately situated with respect to all the contents of their universe so that nothing escapes at least

somebody's thought. Clearly in such a world "not being thought about by some sentient being" does not apply to anything whatever. Once more we have, in violation of  $(\emptyset)$ , a positive predicate whose denial is also positive.

This difficulty disappears upon the realization that both of our examples concern what have been called 'Cambridge properties.' Because of space limitation I shall have to confine myself to saying that Cambridge properties lack genuine substance since it makes no difference to a given particular itself whether they are present or absent from it. No amount of observation – even by an omniobserver – which focuses exclusively on a given particular can provide the slightest clue as to whether it does or does not possess a certain Cambridge property. It follows therefore that our distinction between positive and negative does not apply within the set of predicates whose members signify Cambridge properties.

### 5. THE INDIVIDUATION OF BUNDLES OF UNIVERSALS AND OF BUNDLES OF PARTICULARS

In general it is possible to individuate a given particular with the aid of just a few predicates that apply to it. For instance it is sufficient to be given that of a certain individual the terms 'Austrian composer,' 'outstanding child prodigy,' 'had a child prodigy for a sister' and 'dies in poverty from typhus' may be predicated, in order to realize that the individual in question is Mozart. Or upon merely being told of a particular that the terms 'mass of water with its surface 1292 feet below sea-level' and '25% of it consists of minerals' correctly describe it, knowledgeable people will be able to identify that particular as the Dead Sea. It is to be noted that it is never possible to individuate a particular by disclosing nothing but the negative terms applying to it. If for example we attempted to characterize Mozart in such a way, we could go on and name all the inanimate objects he is not and all the animals he is not, and we will not have achieved even as much as to make it clear that we are not characterizing a region of empty space! One might express this in a somewhat crude way by saying that we are able to identify an individual by knowing what it is, but not by knowing the infinitely many things it is not.

To put it more rigorously, suppose we enumerate n of the properties exemplified by a particular i. In case we have not yet succeeded in

individuating it, it must be because there exists some other particular j from which we have not yet differentiated it owing to the fact that j too has all these n properties. We must then ask: is there some additional property P which only i has but not j? If the answer is yes, then clearly by adding P to our description of the properties of i we will have succeeded in differentiating it from j and thus fully individuating it. If the answer is no, then by Leibniz's principle i and j must be identical, nothing is left from which i has to be differentiated.

On the other hand, when we enumerate n properties i does not have, then regardless how large n may be, i cannot be rendered distinct from absolute vacuum which too lacks all those properties.

We are to note that all this provides us with an additional definition:

 $(D_4)$  Positive terms are those without which it is impossible to individuate a given particular. Proper definite descriptions of particulars cannot be formulated in terms of negative predicates alone.

It will be specially instructive to look at the counterpart of  $(D_4)$ ,  $(D_4^*)$ , which makes a parallel assertion concerning particulars. In order to set matters in greater light I shall take the liberty of speaking of a given class as exemplifying a certain particular whenever a class has that particular among its members. Thus, the U.S. Supreme Court may be said to exemplify Judge Burger, and even that the Supreme Court is Burgerish. Thus, the name "Burger" will be used to characterize any set of which that personage is a member. It is worth noting that, for instance, the statement 'The U.S. Supreme Court is nonSocratic (i.e., does not include Socrates)' applies a negative term to the Court. No one is likely for a moment to interpret this as the ascription of some peculiar sort of individual, a negative or anti-person, to that judicial body. It is perfectly clear that what is meant is that the genuine person of Socrates is absent from the membership of the Court and that absolutely no individual of any kind is assigned as a substitute member. This is, of course, what I have argued is precisely also the case in the context of negative predicates signifying the absence of universals.

We should be able to see in a moment how to formulate  $(D_4^*)$ . If I am told that a given assembly consists of  $J_1, J_2, \ldots, J_9$  each of which being currently a Supreme Court Justice, then I shall realize that the assembly in question is today's Supreme Court. Suppose I attempt to give a proper definite description of the Supreme Court purely in terms of

physical objects that are not its members. I might name various ships, pieces of furniture, books, birds and millions of other items without ever accomplishing the task. Thus, in the context of bundles that are made up of physical properties, it is typically impossible to offer a unique characterization in terms of absences alone. As a rule one is not able to convey the precise nature of an assembly either by mentioning nothing else but objects that fail to belong to it.

Thus the following expression suggests itself:

 $(D_4^*)$  It is impossible to individuate a set of particulars in terms of ones that are not its members.

6. THE LOGICAL RELATIONS AMONG THE FOUR DEFINITIONS AND SOME ADDITIONAL PRINCIPLES

It will be useful to look at the following principles concerning the two kinds of predicates. The first one has been noted before<sup>2</sup> and refers to an asymmetry between those predicates:

(α) Both negative and positive terms will be entailed by a given positive term. Negative terms only, can be entailed by a negative term.

That a negative term cannot imply a positive one follows directly from  $(D_2)$ . According to that definition no positive predicate applies to featureless void. But if even just a single positive term, P, could be inferred from any number of negative ones, then since every negative term applies to absolute void, P too would apply to it, in violation of  $(D_2)$ .

We would also note that  $(\alpha)$  ties in well with  $(D_4)$ . As we saw, the basis for that definition was that negative terms on their own are of no use for the individuation of particulars since after enumerating n properties an individual lacks, regardless how large n may be, that particular "cannot be rendered distinct from absolute vacuum". This is ensured only by the fact that not a single positive term is entailed by all those negative terms indicating the absence of those properties.

Yet another significant link in our web of definitions and principles is the connection between  $(\alpha)$  and the principle mentioned earlier that necessary predicates form a separate category, where the distinction between positive and negative does not hold. In fact, that principle follows logically from  $(\alpha)$ . For suppose N was a necessary predicate. Then of course N applies to everything but that fact implies the presence of no specific negative predicate as would be required by  $(\alpha)$  if it were an ordinary term falling under  $(\alpha)$ .

( $\beta$ ) A positive term is always incompatible with some other positive term. A negative term is compatible with every other negative term.

Both parts of ( $\beta$ ) can be derived from ( $\alpha$ ). Principle ( $\alpha$ ) states that any positive term, P, implies some negative term  $\overline{Q}$ . But  $P \rightarrow \overline{Q}$  is equivalent to  $\sim (P \& \sim \overline{Q})$ , which by  $\emptyset$  amounts to  $\sim (P \& Q)$ , i.e., P is incompatible with the positive term Q.

The second part may be established as follows: let both  $\overline{P}$  and  $\overline{Q}$  be negative terms. Assume that, contrary to the last sentence in  $(\beta)$ ,  $\overline{P}$  is in fact incompatible with  $\overline{Q}$ . This is to say that  $\sim(\overline{P} \& \overline{Q})$  which by definition amounts to  $(\overline{P} \rightarrow \sim \overline{Q})$ . But by principle ( $\emptyset$ ) this is equivalent to  $(\overline{P} \rightarrow Q)$  which would violate ( $\alpha$ ). By reductio, therefore,  $\overline{P}$  is not incompatible with  $\overline{Q}$ .

A third principle may be formulated as follows:

( $\gamma$ ) When given that a certain positive term may be predicated of a specific individual then it may be the case that a negative predicate is incompatible with some other negative predicate with respect to that individual.

Suppose P has been predicated of *i* and now we add  $\overline{Q}$  as well. Should  $\overline{R}$  too be predicated that would mean applying  $\overline{Q} \& \overline{R}$  where the conjunction may add up to  $\overline{S}$ , a third negative term such that it is incompatible with P. An illustration, let 'P' stand for 'raven', ' $\overline{Q}$ ' for 'not weighing more than 4 lbs' and ' $\overline{R}$ ' for 'not weighing less than 5 lbs'. Clearly P is compatible with both  $\overline{Q}$  on its own or  $\overline{R}$  on its own but not with both of them together, since a raven must have some weight.

It seems that with the aid of the previous definitions and the principles we have just enumerated we are able to determine the status of even the more problematic terms. Suppose someone should be wondering if "being a particular" is a positive predicate? The answer may be inferred among others from Principle ( $\beta$ ). It is impossible to think of a single predicate that is excluded by virtue of applying that predicate to anything. That is, 'being a particular' is compatible with any other genuine positive predicate. Another argument leading to the

same conclusion is to start by asking: what is it precisely to which we ascribe the property of being a particular? Surely our answer will concern plain tautology stating that it is a particular to which we assign the property of particularness. But then as pointed out earlier, only contingent predicates divide into positive and negative ones, and the term 'particular' applies *necessarily* to a particular.

Let us look briefly at two more noteworthy logical connections. On a slightly closer examination,  $(D_1)$  will be seen to entail  $(D_3)$ . We recall that according to  $(D_1)$  if P is a positive term then there exists some possible world in which P has no application at all. Now abstract entities like statements are not subject to the vicissitudes of physical reality and thus statements form just as much a part of the conceptual component of one world as of another. Consequently, a predicate that is typical to entities like statements, for example, 'true', has an application in every possible world, and so of course does its negation 'nontrue', neither of which could therefore be regarded as positive. No difficulty is created however, if there is a rule that predicates that are typical to abstract entities never qualify as positive, something that is asserted by  $(D_3)$ .

It is also easy to see that what we have said in the previous section concerning the basically different status of necessary predicates which unlike standard predicates are not divisible into positive and negative ones follows logically from  $(D_1)$ . 'Being a raven or a nonraven' applies to every thing without exception in every possible world and that disqualifies it by  $(D_1)$  from being a positive predicate. The denial of that predicate on the other hand applies to nothing in any world and thus by  $(D_1)$  it cannot be admitted as a negative predicate.

## 7. BEING AT DIFFERENT PLACES AT THE SAME TIME

At this stage we may touch upon an often discussed objection as to how it is possible for one and the same universal, which the realist treats as an existing entity, to be wholly present in a multitude of places at the same time? The usual reply has been that it is only particulars that have the limitation of not being capable of residing in two places simultaneously, but not universals. Properties, it has been maintained, which have a basically different mode of existence, do not share even this important feature of particulars.

By saying this, of course, the realist just concedes a considerably

significant point in which universals and particulars differ from one another and thus makes his own position that much more tenuous. One way in which the realist may avoid making such a major concession is by adopting Moravcsik's extraordinary view who holds that when it comes to the question of spatial location there is nothing to set universals apart from particulars. Moravcsik insists on there being nothing wrong for instance in simply saying that universals have scattered location, different parts of which occupying different discontinuous regions in space:

The location of the universal justice, for example, is the locality of all the locations of all its instance.<sup>3</sup>

Moravcsik claims that treating universals in this manner amounts to attributing to them nothing that would give them in a different category from particulars:

For not only universals have "scattered" spatial location. Germany before WW2 was not spatially continuous, the headquarters of many companies, not to mention Oxford colleges or American universities, need not be in continuous regions of towns.<sup>4</sup>

It is not difficult to see that the two situations are by no means comparable. An international company's headquarters in Alaska will look and actually be, very different from its headquarters in Equatorial Africa, and no one is likely to mistake the Danube meandering through Germany's Black Forest for the Königstrasse winding its way across the center of Berlin. Now admittedly we should be also unlikely to mistake a red typewriter for a red cabbage, but this is so because of the great many other differences these two particulars display – their redness may be perfectly identical. Indeed the nature of redness is precisely the same wherever it is instantiated.

However, there is very good reason to assign different parts even to particulars radically less heterogeneous than a company or a country like Germany, e.g., a perfectly uniform slab of metal. The upper edge of the sheet may be physically indistinguishable from its lower edge, yet remove half of the sheet and the remainder will not merely have decreased in area but also in mass, weight, capacity for heat, etc., etc. On the other hand, if 99% of all bright red objects disappeared from the world, the nature of bright redness exemplified by the remaining such objects would not in the least be affected.

Unquestionably then, the two basic elements of reality display a

substantial contrast with respect to spacial deployment. All the features of wisdom, for example, are present in a single individual who truly exemplifies that property. Socrates, who is traditionally regarded as a paradigm of a wise man, is known to us as someone who has displayed such characteristics as the readiness to confess his own ignorance; an uncompromising devotion to justice; an ability to face death with equanimity and so on; in short all the characteristics associated with wisdom. Thus, even though there have been thousands of wise individuals during the history of mankind, each one has manifested all the rich variety of aspects of this universal. In this sense, therefore, it is quite appropriate to say that the universal wisdom in its entirety resides in Socrates.

On the other hand it makes no sense to postulate that the whole of Germany was located in the Black Forest or that it was located in its entirety in Königstrasse. Clearly not all the features that characterize Germany are displayed by those famous geographical spots. For example, the property of being highly industrialized or of being greatly devoted to the arts, especially to music, is utterly unexemplified by the Black Forest; and no traces of being agriculturally productive or of having the facility for very speedy intercity travel are to be found in Berlin's Königstrasse. To speak meaningfully and truthfully we must say that both these spots are situated *in* Germany, forming a different part of Germany.

In view of what has been said in the previous section, however, it is evident that the realist may avoid making any concessions without having to commit himself to any indefensible or strange position. He may point out that the significant relation which truly parallels the exemplification of a universal by a particular is what we have called the exemplification of a particular by the sets of which it is a member. Not only does there then remain no difficulty for the realist but in fact another significant parallel to strengthen his position becomes evident: the two basic entities resemble one another with respect to multiple presence as well. As we know the very same particular can belong in its entirety to any number of widely differing aggregates. One and the same ship may wholly be owned by the Spanish government and thus be a part of that government's property and at the same time be also a full member of the class of instruments of war as well as the class of wooden vessels, class of floating things and so on.

I am aware of the possibility that some readers may feel less than

enthusiastic about the new analogy I am claiming just now to have discovered and may find it quite unilluminating. Universals' being wholly *present* wherever they are *exemplified* may not seem to them helpfully compared to particulars' being wholly *members of* whatever sets they are *members of*. To offer a brief argument so as to allay such misgivings, let me allude to the much discussed thesis expressly stating that particulars are nothing more and nothing less than bundles (or sets) of universals. Thus, any given raven amounts to a set which includes blackness, wingedness, etc. It should therefore be quite in order, instead of 'blackness is wholly present in raven r' to speak of 'blackness is wholly a member of the set of universals constituting r.'

But regardless how unilluminated one may still feel about this analogy, one point will definitely have to be decidedly conceded: it is of great heuristic value; a large number of confusions may be overcome by its use. The reason is simply this: it is not so easy to achieve clarity when thinking of particulars as amounting to the very special aggregates they are supposed to be, namely aggregates of universals. One of the major impediments for smooth reasoning consists in the fact that unlike in the familiar cases of sets, here the constituent members never present themselves to us as independent, distinct entities. It is impossible to encounter redness, hardness or opaqueness as such; they do not occur in nature, and it is even impossible to imagine how they could occur, unaccompanied, set apart on their own. There are no such difficulties with collections of particulars, members of which may be separated and contemplated as individuals. Thus we can make use of our familiarity with aspects of aggregates of concrete entities in order to overcome difficulties we may experience with the more elusive nature of what are said to be bundles of universals.

For a truly remarkable illustration we may turn to one of the best known writers on the subject, D. M. Armstrong, who resolutely rejects the thesis that a particular is nothing but a bundle of universals. He claims to be offering a 'simple refutation' of that thesis by arguing:

If this is a true account of what a particular is, then some relation or other tie must hold between those and only those universals which are 'properties of the same thing.' Call this relation or tie 'co-instantiation' and symbolize it by 'C'. It, too, is a universal. Suppose, now, that there is an object, a, which has properties P and Q and an object, b, which has P but lacks Q. If this is so, then P and Q must be related or tied by C. Only so can a be Pand also be Q. But if the universals P and Q are so related, then how is it possible that bshould have P and lack Q? Either P and Q are related by C or they are not. If they are so

related, how can they ever be disjoined? So b cannot have P but lack Q, a conclusion which is obviously absurd.

It may be replied that C may be interpreted as the relation of co-instantiation in some bundle. But this is simply a way of saying 'co-instantiation in some particulars.' (There are no bundles independent of the co-instantiation relation.) Then, however, the analysis has reintroduced the notion of a particular, and has reintroduced it as a primitive. The moral seems to be that if we start simply with the class of all universals, it is impossible to find any way of organizing or bundling them by means of a single relation, yet allow for the fact that some bundles must contain members which are disjoined in other bundles.<sup>5</sup>

In reply to this it is sufficient to say: whatever the source of the idea that we are impaled on the horns of a dilemma, let us look at the parallel situation involving bundles of particulars. Suppose both a and b belong to S, the soccer players of our township, while a – but not b – is also a member of set S', consisting of all alderman. Does a have the relation of 'being a co-member of' to b? The indubitably correct answer is, of course, that a does have a relationship to b in S and lacks the same in S'. Now that we have established this, does it follow that the notion of a set, class or assembly of human beings must be treated as a primitive notion? It is hard to imagine that anyone should fail to see clearly in the context of this familiar kind of situation that there are not the slightest grounds for such claim, as it is so simple to give a full extensional definition of S by naming all the individuals that are its members, and do the same for S'. As soon as this definition is given it becomes evident by itself that a has the relation of co-membership to b in S, but lacks it in S'.

Thus whatever may have been worrying Professor Armstrong, I am sure he agrees that there are such things as associations or bundles of human beings and also that he agrees that such associations need not be treated as irreducible primitives and require nothing but their constituent elements for their full definition. Little scope remains now for raising the spectre of any dilemma that if particulars were bundles of universals then either we are involved in a contradiction of assigning and not assigning a certain diadic relation to various particulars or else particulars must be treated as primitive.

# 8. PRACTICAL IMPLICATIONS

There is a feature of properties and particulars whose significance probably merits greater attention than anything discussed so far. It involves the question of what criterion we use when classifying different

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individuals as belonging to the same species. For example the Supreme Court and an exclusive club seven out of whose nine members are on the current Supreme Court, would be regarded as social entities that bore a resemblance to one another. Associations of human beings that share such high proportion of their members with one another will be looked upon as displaying significant kinship. It would however hardly occur to anyone to claim great affinity between the Supreme Court and, say, the Spanish Armada, even though it could be claimed that they resemble one another in infinitely many more ways than they differ! There are for instance millions of insects in the world and each one of them is equally absent from both the Court and the Armada; not a single item of food, piece of furniture, mountain, river, planet or galaxy is a member of one assemblage or the other. In brief, virtually 100% of the contents of this vast universe of ours are absent from both of these assemblages. Clearly then, resemblances between ordinary classes of individuals are generated by common presences found in them and not by common absences.

Once more we are presented with a parallel between the two basic elements of reality. The significance of this parallel is that it provides a rather surprising illustration of how abstract considerations of ontology may have quite practical ramifications affecting the actual methods by working scientists. As will be recalled the celebrated paradox of confirmation advanced by C. G. Hempel begins with the innocuous assumption that

- (1) If a sentence S confirms a generalization G, and  $G \leftrightarrow G'$ , then S confirms G' to precisely the same degree.
- (2) "All ravens are black"↔ "All nonblack things are non-ravens".
- (3) The generalization " $(x)(Ax \supset Bx)$ " is confirmed by "Ai & Bi" (Nicod's Criterion).

Thus it follows that the observation of a white shoe (which is an instance of a nonblack nonraven and confirms the latter) should also confirm "All ravens are black." Virtually everyone, however, finds it unacceptable that a white shoe might confirm the last generalization to any degree.

In order to solve the paradox we must recall Hume's description of the essence of inductive reasoning:

I have found that such an object has always been attended with such an effect . . . . and I

foresee that other objects which are in appearance similar will be attended by similar effect.

Thus what is relevant for the purposes of empirical generalizations is not the way we talk about particulars and not what predicate is applied to them but whether or not they themselves 'are in appearance similar.' The basic principle that governs inductive practices is that individuals resembling one another (irrespective of the way they happen to be referred to) are expected to exhibit further substantial resemblances. Clearly, however, we do not regard items having in common nonravenness (which amounts merely to having the same negative term predicated of them) as sharing a substantial property. Individuals do not bear a significant resemblance to one another by merely lacking the same property.

Thus it is an error to suppose that every generalization of the form  $(x)(Ax \supset Bx)$  is supported to some degree by an individual *i* such that Ai & Bi. For of course this is not unqualifiedly so. Different individuals do not necessarily become similar to one another just because the same term A or B may be predicated of every one of them. The basic Humean principle underlying inductive reasoning, as mentioned before, is that individuals which have exhibited similarities with respect to their observed properties are expected to have further similarities. The members of the class of individuals of which A may be predicated have however not really exhibited significant similarities unless A stands for the presence of a substantial property, nor will B denote further similarities unless B denotes the presence of a substantial property.

What might an ultra-nominalist, anxious to preserve the idea that everything hinges essentially on linguistic usage and not on what one may believe words stand for, say to all this? He is likely to claim that terms like 'raven' and 'nonraven' are really to be treated as symmetrical opposites. He may also point out that it is not hard to imagine a society where the predicate 'nevar' denoted everything we speak of as *lacking* ravenhood, while its negation 'nonnevar' stood for what we call 'raven'. In our reply to this we should, of course, cite  $(D_1), (D_2), (D_3) & (D_4)$ , showing that in the present context (unlike in the case of electricity, for instance) negativity and positiveness is rooted in radical ontological differences. After all, nobody would want to deny that our talk of the *presence* of Burger and of the *absence* of Socrates from the Supreme

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Court is justified by solid facts. Thus our refusal to treat Professor Hempel's white shoe as substantially similar to, say, the Statue of Liberty by virtue of their shared lack of ravenhood, is just as warranted as our refusal to treat the Court and the Armada as significantly similar by virtue of all their shared absences.

## 9. CONCLUSION

It is crucial to realize that contrary to what may appear to some, my proposed solution is decidedly not that of rejecting the equivalence condition (i.e., that evidence for G is evidence for all equivalent hypotheses). It amounts rather to rejecting Nicod's principle that a generalization of the form  $(x)(Px \supset Qx)$  is confirmed by observing some *i* of which Pi & Qi is true. Nicod's principle has to be qualified by the proviso 'unless P or Q are negative predicates.' Thus clearly 'All nonblack things are nonravens' is precisely in the same boat as 'All ravens are black' and it too is confirmed by the observation of a black raven and not by observing any nonblack nonraven.

Perhaps the most noteworthy differences between the present suggestion for dealing with Hempel's paradoxes and other known suggestions is, first, that even those philosophers who took as their starting point the statement that there is a significant dissimilarity between terms like 'raven' and 'nonraven' have arrived at their position only after a great deal of observation and experience. For example that the term 'raven' is entrenched in the language while the term 'nonraven' is not, or that the number of ravens in the universe is relatively very small can of course not be known prior to experience; on the other hand, our approach was a purely a priori approach. As soon as we were given the definition of the term 'raven' we were able to conclude that ravens are absent from infinitely many worlds, whereas nonravens must be present in every single universe. What we are bound to find and what we are bound not to find in various worlds other than our own is, of course, determined through conceptual analysis alone.

Secondly, it is certain that no one is going to impute any ad-hocness to the present solution. Unlike most other solutions, ours is pivoted on a point that has not been specially tailored for the purpose of dealing with Hempel's problem. Our solution is really a by-product of a purely metaphysical inquiry into the question of which linguistic entities do and which do not represent genuine properties.

This is why what we have said might be interpreted as having the encouraging implication that reality may not be as complex – because so fragmented or disconnected – as it appears on the surface. Here we have had an illustration of how abstract ontological inquiry, normally thought of as belonging to the most rarefied regions of metaphysics, may have direct bearing on concrete questions about scientific methodology.

#### NOTES

\* I have greatly benefited from discussions I have had with David Sanford and Tom Moody.

\*\* These two expressions have of course been used by a number of philosophers before. Most of them have however not held that a positive term always stands for the presence of a genuine property while its negation indicates the complete absence of the same property. There have been some for instance who have maintained that a negative predicate designates a substantial property except that it is a negative one (cf. R. Gale, *Being and Non-Being*, p. 24).

<sup>1</sup> Douglas Greenlee: 1974, 'Particulars and Ontological Priority', *Metaphilosophy*, p. 227.

<sup>2</sup> By David Sanford in his 'Negative Terms', *Analysis*, 1967, p. 203. It is interesting to note that even though Sanford has some instructive things to say, he himself admits to being unable to give a definition of the difference between positive and negative terms. <sup>3</sup> Moravcsik: 1981, 'Universals and Particulars', *Philosophia*, p. 153.

<sup>4</sup> Ibid., pp. 154–5.

<sup>5</sup> D. M. Armstrong: 1975, 'Towards a Theory of Properties', *Philosophy*, p. 147.

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