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IDENTITY AND THE FORMATION OF THE NOTION OF  
OBJECT

*Or: The Identity of Indiscernibles – A Synthetic A Priori*

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The principle of the identity of indiscernibles says that two things that are indiscernible – that share all their properties – are one and the same thing. The principle was clearly formulated, and gained immense philosophical importance in Leibniz's thought. Turned round to read that identity is sufficient for indiscernibility, it seems compelling, and in this version it is connected with the principle of the substitutivity of identicals – that two terms which denote the same thing are substitutable for one another in any context *salva veritate*. We shall not concern ourselves here with this latter principle, but confine our attention to the original formulation – that indiscernibility is sufficient for identity.

The exact interpretation of the principle in Leibniz's philosophy is not entirely clear. It sometimes appears as a sort of empirical generalization. But this surely does not exhaust its meaning, for it is obviously connected with some of Leibniz's central metaphysical doctrines such as the notion of a (complete) individual concept, or the principle of sufficient reason. In fact, most commentators regard the principle as 'analytic', or 'logically necessary'.<sup>1</sup>

In this paper I shall not try to re-interpret the principle and its exact meaning in Leibniz; I shall completely ignore its metaphysical background, and its systematic status in his theory. I shall rather present a partial explication of the principle in more modern logical terminology, by which I shall contend that the principle is *not analytic*, that it is not "true by definition" or anything of the kind (sections II–IV), and yet that it is a necessary and a priori truth (sections V–VI). Under this particular interpretation the argument that the principle is not analytic is based on the difference between the notions of identity and indiscernibility, and the fact that identifying them in a particular language, is a step of great conceptual

and ontological significance. However, I shall argue, the principle is a necessary conceptual truth; its necessity, true, is not logical; it emerges rather out of an effort to explain the formation of our notion of an object in a particular language. In other words, my thesis here is that a certain stipulation of the identity of indiscernibles is an important element in an explanatory theory of the formation of the notion of an object.

Thus, we shall view the problem of the status of the principle of the identity of indiscernibles in the context of the general question: how do we form the notion of an object in a certain language? Or, more precisely, how is the ontology of the language? determined on the basis of some non-objectual (non-extensional) understanding of the predicates of that language?

My main thesis here is that there is an especially strong sense of "fixing identity for a language" – to be explained below – in which we may be said to determine the objectual content of a language by fixing the identity relation of that language.

## II. IDENTITY AND INDISCERNIBILITY

The connection between the notions of identity and object has a firm intuitive basis: intuitively we think of identity as the relation every object has to itself and to nothing else. This truism is so elementary that it is impossible to reduce it to even simpler terms. It formulates the hard core of our notion of identity, with which any explication of the concept must agree.

This banal observation, however, is important in discussing the relationship between identity and indiscernibility, for it need not be true with respect to the latter: indiscernibility has to do with the predicates of the language, whether they are interpreted objectually or not.

In order to make all this more precise, let us imagine that we are dealing with a first order language – or, it may be a portion of a natural language that can be modelled on a first order language. Let us also suppose that the language is finite, i.e., that the number of primitive predicates is finite. This assumption is justified, since our ultimate purpose is to understand some features of a natural language, and natural languages are finite in this sense. Thus we are envisaging a situation in which a language is syntactically analyzed to the extent that we can intelligibly talk of its pre-

dicates, of predicates of so and so many places, of logical connectives and operators, etc. Furthermore, in talking of the predicates of the language I shall *exclude in particular identity*.

I assume now that some kind of interpretation is given to the predicates. But this interpretation is not of the kind one usually finds in textbooks on logic; it is not a function that correlates with each predicate some set of sequences of objects of a given domain. Surely, any such interpretation would beg the main issue under discussion here, which has to do with what can, and what cannot be defined independently of a specification of the objects of the language. Hence, the kind of understanding of the predicates we assume need not be objectual. We can conceive of a more elementary kind of understanding: It may be *behavioural*, as when we associate a typical use of the predicate with a set of kinds of behaviour (e.g. à la Quine); or, it may be *verificational*, as when we determine the meaning of a predicate by the typical verificational procedures we associate with sentences in which it occurs (e.g. à la Dummett); or it may be *notional*, or intensional, where understanding a predicate amounts basically to grasping a certain concept it expresses (e.g. along the lines of Frege, or Carnap); or, it may even be some combination of these. The main point is that we should not think here of an interpretation given in terms of a presumed "given" domain of objects. I shall call this kind of understanding of the predicates "extensionally inarticulated". The assumption, though admittedly vague and problematic in the way it is presented here, seems to me innocent and plausible enough for my present purposes.

I contrast this kind of understanding with the more standard "objectual" interpretation mentioned above. The term "objectual" is used with regard to the interpretation of the predicates, and more often, of the quantifiers of the language. These are not necessarily connected, but once the predicates of a language are interpreted "objectually", the corresponding interpretation of the quantifiers seems the more natural. I shall not be very strict in keeping the distinction in the sequel, and in case of doubt the reader should keep in mind that in using "objectual" I mean primarily the interpretation of the predicates.

We can now define the indiscernibility relation in such a language by a conjunction of equivalences exhausting all the possible substitutions of the terms in question, thus:

$$\text{In } (x,y) \stackrel{\text{def}}{\leftrightarrow} \forall u_1 \dots u_{k-1} ((F_1^1 x \leftrightarrow F_1^1 y) \& \dots \& \\ (F_1^k(u_1 \dots u_{j-1} x) \leftrightarrow F_1^k(u_1 \dots u_{j-1} y)) \& \\ (F_1^k(u_1 \dots u_{j-2} x u_{j-1}) \leftrightarrow F_1^k(u_1 \dots u_{j-2} y u_{j-1})) \& \dots)$$

where the  $F_i^j$  range over all predicates with the upper index indicating the polyadicity of the predicate. We assume that  $k$  is the maximum polyadicity, and that no function symbols are included in the language (this is not a very serious restriction for they can, in principle, be eliminated by predicates). The universal quantification is to be understood substitutionally, so that no commitment to a specific domain of objects is involved.

This definition is intelligible as it stands, with no presumptions about the "extensional", or, "objectual" interpretation of the predicates. Hence we can say that the relation of indiscernibility, i.e. the meaning of the indiscernibility predicate, together with the rest of the meanings of the rest of the predicates, is "extensionally inarticulated".

It should also be noted that this relation of indiscernibility is *relative* to a language in a straightforward way: different sets of predicates define different indiscernibility relations.

Now, does this definition define the relation of identity in that language? It should first be observed that the question is a philosophical rather than a logical one. For as far as the *formal* properties are concerned, the notion of identity can be proven to be fully definable in this way. In fact, our definition of indiscernibility is basically the "elimination" that Hilbert and Bernays suggested for identity.<sup>3</sup>

For a language of the kind we are considering, it can be proved that a relation satisfies the "axioms of identity"

- (i)  $(x)x = .x,$
- (ii)  $(x,y) (Fx \& x = y \rightarrow Fy),$

if and only if it satisfies the above definition of indiscernibility. Hence, as far as their formal properties are concerned the relations of identity and indiscernibility are indistinguishable.<sup>4</sup>

But philosophers may still diverge over the question whether or not these formal properties exhaust the full meaning of the notions involved. Russell and Quine, for instance, would answer in the affirmative. Wittgenstein and Ramsey would disagree and argue that the notion of identity is such that we may think of the possibility that two distinct objects are indiscernible.<sup>5</sup>

My previous remarks should make it clear that I side with the latter view. The indiscernibility relation of a given language is part of the "ideology" of the language; it can be fully defined by the set of predicates of the language with no presumption of the kind of interpretation these predicates get. Thus indiscernibility is a completely intelligible notion even when understood as extensionally inarticulated. But identity, on the other hand, is bound up with, and inextricable from the ontology of the language (this does not mean that it is relative to the ontology, but we shall come back to this point of relativity). It is therefore indefinable in terms of the predicates of the language, unless one assumes a fixed objectual interpretation of these predicates.

Thus, not only terms like "sweet", "hard", "juicy", "red" etc. can be interpreted in an extensionally inarticulated way. "Substance terms", so called, can also be interpreted in this way, when we conceive of them as "observational terms", in something like Quine's sense of this term.<sup>6</sup> As such, we assimilate them to "mass-terms", and regard the substance-involving element of their meaning to be a rather unnecessary hypothesis in explaining an elementary stage of our use of them. Thus, if the only predicates in the language were "sweet" and "juicy", the indiscernibility relation would be defined here as:  $x$  is indiscernible from  $y$  iff  $x$  is sweet iff  $y$  is, and  $x$  is juicy iff  $y$  is. And obviously it will not distinguish between different apples, different apple-parts, or an apple and a watermelon, etc. If you now add "red", "round" and "apple-like" to your language you will get a stronger indiscernibility relation. The more independent predicates you add, and the more "constraints" (behavioral, verificational, or notional) you put on their interpretation, the stronger the indiscernibility relation you can define by their means. But the indiscernibility relation thus defined – be it as strong as it may – still leaves ontology indeterminate. Consequently, it cannot be regarded as expressing the identity relation in that language for this notion is unintelligible when separated from a specified ontology.

### III. EXTENSIONAL INARTICULATION AND OBJECTUAL INDETERMINACY

I have explained the conceptual difference between identity and indiscernibility in terms of the notion of an extensionally inarticulated interpretation

of the predicates. The point may be further explicated by talking of objectual indeterminacy instead of extensionally inarticulated interpretation. For, to say that a notion is extensionally inarticulated is to say that it is objectually indeterminate; this, however, does not mean that there is no objectual interpretation that "fits" the notion in question, but that there are many equally good ones. For any language of the kind we are considering, we may conceive of a richer meta-language, in which several equivalence relations can be defined, all of which satisfy our definition of the indiscernibility relation. In other words, however strongly we may construe the interpretation of the original predicates, we may conceive, within the limits imposed by this interpretation, of several re-interpretations in which two distinct objects are indiscernible in terms of our original predicates. The original indiscernibility relation will thus be conceived as an equivalence relation weaker than identity.

Thus, consider a language whose sole predicates are 'wise' and 'fat'; such a language cannot itself distinguish between two persons who are wise and fat, but it can, of course, be modelled in a language that does provide means for such a distinction, or take a language that can distinguish only between word types, and then re-interpret it in terms of word-tokens, in which types are construed as equivalence classes of tokens, etc. The point here is the familiar Quinean thesis that the ontology of a language – the objects of which the predicates of the language are true – is indeterminate by a behavioral (or otherwise non-extensional) interpretation of the predicates, however strong we conceive such an interpretation to be.<sup>7</sup>

It may at this point be objected that while this is true and familiar, it does not corroborate my argument for the difference-in-meaning between the notions of identity and indiscernibility. For evidently, when we re-interpret a given language in a richer meta-language we should not be surprised to find that the notion of identity in the meta-language is different from that of indiscernibility in the original object-language. The thesis that the notions of identity and indiscernibility are the same, the protester may say, is confined to one and the same language. Distinguishing between two indiscernibles is possible only in the meta-language but when thus judged the objects concerned might as well be deemed discernible, and the same problem would be shifted to the metalinguistic level. Even someone who regards the notion of identity to be universal 'over languages' must certainly agree that in dealing with the question one

should stick to one and the same perspective – judging from the point of view of the object language itself we have not found any reason to distinguish between *its* notion of identity and *its* notion of indiscernibility.

In reply to this objection I would point out that although it is easy to imagine that in passing from one language to its meta-language the indiscernibility relation may change so that we can distinguish between previously indiscernible elements, my claim here is that this is not so with regard to identity. Our natural inclination is to preserve the identity relation as far as objects of the original language are concerned. In explaining the meaning of terms of the language we usually say things like "x's are y's" when "y's" are already understood, thus we carry over identity between y's to identity between x's. On a global scale it means that the identity relation of the language will be a restriction of that of the meta-language to a certain subdomain.

I am aware, of course, of the possibility of more sophisticated translations, or interpretations – usually encountered in formal systems – in which identity is not preserved. But this does not seriously threaten my argument; for the purpose of my argument the possibility of interpretations of the kind I described, and the fact that they are quite natural and ordinary, seem to be enough. Moreover, for reasons stated below, such preservation of the identity relation in interpreting a language seems to me not only natural but, on many occasions, desirable.

Thus, our most ordinary translations are such that if two objects are distinct in the meta-language, they cannot be identical in the object-language. It follows that when we say that the objects concerned are distinct, it would be true to indicate that this is a meta-linguistic truth, but this observation would carry little weight because, by the above argument, this truth is transformable to the object-language as well. Such a move, to repeat, is not open to us with respect to the corresponding indiscernibility judgement.

To amplify this argument I should add that not only is it possible to interpret a language so that its identity and its indiscernibility relations differ, but that on many occasions it is very desirable. P. Geach, for instance, has argued against a methodological version of the "identification of indiscernibles", which he ascribes to Quine and which says that we should always construe the ontology of our theories in such a way that indiscernibility will be identity.<sup>8</sup> Geach holds that though this course is

evidently possible, it is very awkward, for it would result in an extreme version of "ontological revolutionism": the ontology of a theory would change wherever the addition of some predicate to the language resulted in a significant change in its "ideology" – in its descriptive power – and consequently also in its indiscernibility relation.

Geach does not explain why he regards this result as so awkward, but it seems to me that one could suggest at least two reasons.

(i) First, for a relativist like Quine (and, of course, Geach himself) changes in ontology imply that different meanings should be ascribed to the logical terms of the theory, e.g. the quantifiers.<sup>9</sup> But I take it that no one would want this situation to arise from every change in ideology.

(ii) Secondly, intuitively speaking, we regard our theories as describing objects of certain kinds in a way that not only can turn out to be false, but more profoundly, to be inadequate, as when we realize that we may have been lacking some predicates for a suitable and adequate description of these objects. Yet to regard any theoretical change, in particular changes in the descriptive machinery we use, as a change in subject-matter, seems, in this perspective, absurd. This intuitive point has been recently developed and amplified in connection with problems in the theory of reference, mainly by Putnam and Kripke.<sup>10</sup>

It should be noted that in itself Geach's argument does not, and was not, intended to establish the distinction between identity and indiscernibility. Geach himself has adopted an altogether different approach, which involves the abandoning of a general notion of identity and replacing it by his "relative identities". But taken together with my previous point it does lend additional force to the contention that identity and indiscernibility are different notions.

#### IV. NOTIONS AND SCHEMES

One could distinguish here between two kinds of notion that are manifested in a language. The first consists of "internal notions" which are descriptive in a straightforward way – our notions of cat, table, red, are such instances. These notions are internal to the language in the sense that it is entirely conceivable that they are confined to a particular language. There is no need to think of them as universal over languages in any sense. The meanings of such notions are determined by the criteria and conditions of their proper application in that language.

The second kind of notion consists of what has been called "transcendental notions" – notions like truth, object, existence. These are not internal to the language in the way the notions of the first kind are. They rather define the *ontological framework within which the language in question is understood*. Consequently, they cannot be "internal", or specific to a particular language, but are, in a way, universal, and meaningful over languages.

This distinction, which I find very hard to draw in precise terms, is somewhat akin to Wittgenstein's distinction (in the *Tractatus*) between saying and showing. Transcendental notions define the nature of what is shown by a language. Internal ones belong to what is said, or described in it.

Now, indiscernibility is, I suggest, such an internal, descriptive notion, whereas identity is a transcendental one.

The idea of transcendental notions is, of course, problematic. One peculiar aspect it has which makes it unintelligible to many people is the sort of double role these notions play in a language: they both belong to it and at the same time transcend it; on the one hand they seem to be confined to a language, to be expressed by its predicates, and to form part of its descriptive machinery, while on the other, they seem to provide the basic conceptual means by which we can compare languages, interpret one by the other, and so on.

Some philosophers, notably Quine, have insisted on splitting these two roles: the predicates we use for identity, truth, etc. are confined to our language; they are relative to the language exactly as the rest of the predicates are. What remains common to two different languages is just the *formal* properties of these notions – a formal scheme. So, truth-in-a-language is what satisfies Tarski's inductive scheme in that language; truth-in-general, what may be common to two languages, is the inductive scheme itself. Similarly for identity: identity in a language is its indiscernibility; what corresponds to our transcendental notion of identity is, according to this view, only the formal scheme exhibited by the "axioms of identity".<sup>11</sup>

Other philosophers again have regarded the notion of identity as entirely without meaning, even within a particular language. Two outstanding examples (though immensely different) are Wittgenstein's doctrine, in the *Tractatus*, of the meaninglessness of identity, and P. Geach's early position that identity is meaningless unless relativized to a sortal predicate.

All these views it seems to me are untenable, but I cannot enter here into a detailed discussion of them.<sup>12</sup> Instead, I shall merely indicate, rather dogmatically, the main points where my use of "the notion of identity" differs from these relative and schematic alternatives.

(i) Identity statements (and, hence, the notion of identity) are not *meaningless*. They may convey genuine information about the world, and are objectively true or false.

(ii) The notion of identity is not "schematic": its meaning cannot be exhaustively described by a formal scheme, in which all extralogical constants occur as "dummy letters". In other words, I want to suggest that any satisfactory explanation of the meaning of identity must involve some ontological features.

This distinction between a formal scheme and a genuine logical notion seems so elementary that I find difficulty in explaining it in any illuminating way. I do not mean it to correspond merely to the customary distinction between descriptive, non-logical constants, and logical or "structural" constants (even though I doubt whether even this distinction can be explained in a general and satisfactory way). For the gist of my proposition here is that *logical* notions are also "genuine notions", whose meaning transcends what may be captured by a formal scheme. This, of course, is a substantial and debatable point. Much depends here on one's philosophy of logic: if one believes (as I do) that logical notions can only be explained in terms of concepts such as truth, and if one construes "truth" in an ontologically significant way (and not merely as a dummy predicate which is governed by such and such axioms in some given language) then one is committed, it seems to me, to regarding logical notions as genuine, non-schematic notions, which have ontological significance.<sup>13</sup>

(iii) Transcendental, such as logical, notions are *meaningful over languages*, i.e. their meanings are not confined to a particular language, and cannot be defined relative to a certain set of predicates of a particular language. In speaking here of the "same notion" being common to various languages, I am evidently using "notion" in an intensional way, in which co-extensiveness (being true of the same objects) is neither a sufficient nor a necessary condition. (Co-extensiveness is usually considered to be a necessary condition for two concepts being the same within one language.) A notion, here, cannot be characterized by the things of which it is true, but by the particular *role* it plays within a certain conceptual framework.

Truth, object, existence, all belong to such a framework, and identity, I maintain, also belongs there, alongside other logical notions. This framework is not confined to a particular language, but is common to and functions in the same way in different languages. Hence, I speak of the notions themselves as being "the same" in various languages. For, to repeat, what is thus common to various languages cannot be adequately characterized in formal terms only, by a formal scheme. It has a substantial ontological significance within each language, and it has the same such significance in various languages.

#### V. THE IDENTITY STIPULATION

Up to now I have argued that the identity of indiscernibles is not analytic. Identity and indiscernibility are different notions, which, in spite of their formal affinity, play completely different roles in our "conceptual scheme". The first is bound up with the ontology of the language, the second, with its "ideology" – its descriptive predicates. Identifying the indiscernibles is, therefore, an important and significant step, which far transcends whatever is given, or implied by the notions involved. How should we understand such a move? What exactly does it accomplish, and how can it be justified? To these questions we turn now.

My main thesis here is that there is a special sense of "fixing the identity predicate for a given language" (to be described and explained below) in which we determine the ontology of a language once we fix its identity predicate. This fixing of the identity predicate has to do with the identity of indiscernibles, and this, I suggest, is where the main significance of the latter principle lies.

Determining the ontology of the language means simply fixing a particular set of objects, or objects of particular kinds, as the values of the variables of the language in question, as the objects of which the predicates of the language are true. Hence our thesis ascribes a significant role to the notion of identity and to the principle of the identity of indiscernibles in the conceptual formation of a basic ontological category – that of objects.

One major aspect of the problems involved in understanding our notion of object can be put thus: how do we form the notion of an object in a language (or, how do we determine its objectual ontology) on the basis of an extensionally in-articulated understanding of its predicates? In the

background of this question are two remarkable facts about the understanding of our language: the first is that we understand it objectively – we construe (most of) our predicates as being true of, or applying to objects; we regard our statements as being about objects, etc.

The second is that given some plausible empiricist assumptions, there seems to be nothing inherent in our use and understanding of language to necessitate this objectual interpretation. It can be argued that on these same plausible empiricist grounds, we could have understood our language in a non-objectual, or non-extensional way. Hence, in trying to understand our notion of an object and the way we actually understand our language, we are faced with the problem: how do we form that notion of an object in a given language on the basis of such a non-extensional understanding of its predicates.

We have seen that the identification of indiscernibles is not logically necessary and that it would be awkward to *define* identity in a given language as its indiscernibility predicate. It has also been noted, however, that such an identification is always *possible*. If we wish, we *can* always manipulate our ontology in such a way that whatever is indiscernible in terms of the predicates of that language would be deemed identical. Manipulating our ontology in this way is a course open to us in a richer meta-language in which our talk of various domains of objects – various ontologies – for the language in question is, presumably, well understood. But such a way of determining the ontology of a language, of forming its notion of an object, by an explicit statement in the meta-language is, as we have already remarked, futile: it would beg the main issue at hand and rob our problem of the determination of ontology of any interest it might have.

For our concerns here, therefore, we should rather assume that no such richer meta-language is available, or that the same problem pertains to the meta-language as well. And here I suggest that we should rather view the situation from “beneath”, so to speak: instead of manipulating a ready-made ontology so as to equalize the indiscernibility relation with identity, we should rather take the opposite course and *stipulate* such an identification, *thereby determining the ontology of the language*.

By this stipulation, which I would call the “identity stipulation”, or by “fixing identity for a language” I do not mean merely settling for a certain “manual of translation” of some expressions of that language into the identity jargon of our “home language”. For I conceive of the general

problem of forming the ontology of a language, and of the role played by the stipulation of some relation of that language as expressing identity, as applying to our own “home language” as well. Nor do I intend it to mean specifying the domain of objects – the ontology – of this language in some well-understood meta-language. For, again, such a specification in the meta-language would be objectually determinate only to the extent that the predicates of the meta-language were extensionally determinate, and would merely push our problem one level “higher”. “Fixing identity” means for me stipulating a certain relation – *well understood in non-extensional terms* – to be identity.

The crucial step here – that of stipulating a certain descriptive equivalence relation to be, or to express, identity – may be questioned on three grounds:

(i) What is this general notion of identity?  
 (ii) Granted this general notion of identity, why should we explain the notion of an object in its terms and not, say, vice versa?

(iii) What is the stipulative element involved here?  
 The defining features of the notion of identity have, I believe, been explained above. They are: (a) its formal properties and structure; (b) its intrinsic, conceptual connection with the notion of an object; (c) its “transcendental” and universal character; its meaningfulness “over” languages, without its having any fixed, absolute extension.

Now, apart from particular problems concerned with the theoretical and conceptual role I ascribe to the notion of identity, the first question seems to raise two issues. One is concerned with the intelligibility of talking of *notions*, in the rather mentalistic vein, as I use it, apart from their extensions. I cannot, of course, enter here into a discussion of the vast literature dealing with various aspects of this issue. I can only say, rather dogmatically, that I do not see anything particularly puzzling in this appeal to notions, and that I assume that almost any theory concerned with the problems I have addressed myself to cannot and should not refrain from making use of such notions.

The other issue possibly raised here is the absoluteness, or universality of identity, which is connected with its transcendental character. The notion of identity has been claimed to be relative in various senses, by various authors. These claims raise substantial issues, and rest on particular assumptions that I cannot discuss here.<sup>12</sup>

Turning to the second question, I should remark that it is perfectly possible that the notion of an object is so fundamental that any account of its "formation" is bound to be either circular or pointlessly complicated and, hence, that it should be postulated as an irreducible theoretical notion.<sup>14</sup> The seeming circularity involved in our proposal is evident: we have explained the general notion of identity, and its distinctness from that of indiscernibility in terms of the notion of object and of objectual interpretability to the suggestion outlined above. For first, these explanations of identity were not intended to be part of a definition of the notion; they were rather meant to be preliminary elucidations, which may help the reader to grasp the nature of the notion of identity we appeal to.

Secondly, and this is the main point, a general, transcendental notion of an object (analogous to our notion of identity) cannot accomplish the task we ascribe to the identity stipulation, namely, establishing a definite ontology for the language at hand. This is the point hinted at in section III above: given the indiscernibility relation of a language  $L$ , and assuming such a general transcendental notion of object, one can indeed stipulate the indiscernibility relation to be objectual, but that still leaves the ontology of  $L$  indeterminate; it does not fix any specific ontology for  $L$ . In the jargon of section III, it just means that  $L$  is interpreted in an objectual meta-language  $M$ . The point, however, is that given the constraints imposed by the (extensionally inarticulated) indiscernibility relation of  $L$ , one can define very different models of it in the objectual  $M$ . This means that the ontology of  $L$  is indeterminate even within the objectual  $M$ , i.e. even when one does assume here a given notion of object. The only information we really get here is that two discernibles cannot be the same object, so that we learn very little as to what the objectual interpretation of the predicates really is.

This, however, is not the situation with the identity stipulation: here, when we are given the indiscernibility relation of  $L$ , and we stipulate it to be identity, we fix the ontology of  $L$ . On this suggestion we tie up the previous non-objectual interpretation and the objectual one as strongly as possible: i.e. we determine when two objects are the same.

This has to do also with the fact that the notion of identity, unlike that of object is a *logical* one: it has a structure which is explicated in an articulated logical theory. I think, moreover, that in any case, even if the reader is not convinced that explaining the notion of an object in terms of

identity is more illuminating than the other way round, merely recognizing the conceptual relations between the ideology of a language, its ontology, and the notion of identity is philosophically worth-while.

As regards the third point, talking of the identity stipulation needs some clarification. I said that we form the notion of an object in a given language in terms of the extensionally inarticulated understanding of the predicates, and the identity stipulation. Once the indiscernibility relation of the language is stipulated to be identity, the ontology of the language is determined, and consequently, we may be said to understand it objectually. Formally the stipulation is expressed, on the syntactical level, by adopting the axiom  $\text{In}(x,y) \leftrightarrow x=y$ . I am concerned, however, with the identity stipulation as an intentional act, that is to say with its import on the semantics of our language. Here we have to distinguish between two cases:

(i)  $L$  is understood in a non-extensional way along the lines indicated in section II above. The interpretation of " $\text{In}( , )$ " is uniquely determined by the extensionally inarticulated meanings of its predicates. The identity stipulation is a hypothetical mental activity (probably unconscious) that provides  $L$  with an objectual semantics, where no objects were involved in its understanding before. I assume that such an act takes place in the process of learning a language and of coming to understand it objectually. The stipulation here takes place within the confines of the language itself, and this gives it a special importance in explaining the process by which we may confer an objectual understanding upon our own "home language".

(ii) Although  $L$  has no objectual semantics, candidates for such a semantics are provided by another language  $L'$ , which is understood objectually. The predicates of  $L$  can be interpreted as sets, or relations (in the set-theoretical sense) over domains of objects describable in  $L'$ . Certain ties will naturally exist between  $L$  and  $L'$ , and the interpretation will have to satisfy certain constraints; e.g. some behavioural, or verificational criteria will have to hold. As Quine and others have observed, one should not expect the constraints to determine a unique interpretation of  $L$  in  $L'$ . Here we have a class of possible interpretations, and each construes " $\text{In}( , )$ " as some equivalence relation over objects of  $L'$ . The identity stipulation consists here in stipulating one of these relations to be the identity of  $L$ , thereby determining its ontology. It may well happen that the chosen relation is not a restriction of the identity relation of  $L'$ . In this case our stipulation may enrich the ontology of  $L'$ . Roughly speaking, it amounts



to the introduced objects out of equivalence classes.

As I have said sort of stipulation to explicate the first one. I canning like the first kind of stipulation takes place as hereby we form the notion of an object in that language explain this process, and to explicate the meaning of an object in a language and determining it; try to explain in what sense the ontology of a language is a mere consequence of its predicates being try to explain why we have to appeal to the iderexplaining of the determination of the ontology of a explicatory purposes, we should have recourse, I suggest of a richer language, and make appeal to the notion explained above. This notion is explicative in *ly* in which the indiscernibility relation is objectively finite. It reveals why we cannot determine any one of the indiscernibility predicate in terms of the other extensionally articulated understanding of the language. We may be so habituated to think in terms of relations that this passage from a non-extensional to relational may seem unintelligible and not prone to the more deeply-rooted a habit is, the more important a theoretical understanding of our commonsense.

Although I second notion of stipulation as explicating the first, it is clear that it may reveal in itself an alternative hypothesis that takes place in the formation of the one, namely, that at some stage in the process of learning various models of the language, and finally as its ontology. This selecting may, of course, be cognitive, perceptual, and other psychological factors. If this could evidently have to assume that in learning a language entering various models that are unexpressible, (language itself).

In any case, of this notion of stipulation as explicating the first, an actual mental process, we may come to understand the notion of an object in a language, and how we do it, in terms of stipulating one of its indiscernibility *y*.

Granted that the ontology of a language is determined by something like the identity stipulation, can one be wrong in this stipulation? Can one stipulate the identity relation of a language wrongly? First, it should be noticed that we appeal to the identity stipulation in accounting for the very fact that we do have an objectual interpretation of our language. But, in principle, a language need not be objectively interpreted, and hence, in principle, stipulating its indiscernibility relation to be identity may be inappropriate. Secondly, there is an indirect way in which the identity stipulation may be deemed wrong in explicating our ontological intuitions regarding a certain language. Suppose, for example, that there are various stages in the course of the development of some theory, in which various predicates are added to it, so that the indiscernibility predicates defined in their terms at each stage are different (strictly speaking, we have a series of theories  $T_1 \dots T_n$ , and a series of corresponding indiscernibility relations  $I_1 \dots I_n$ ). A question may now arise as to the ontology of the theory: is it the same throughout this development, or is the ontology of each stage (each  $T_j$ ) different from that of its previous stages? People's intuitions may differ on such a question. Philosopher *A*, looking at the theory from the point of view of its later stage, may come to realize that previous identifications of various indiscernibility relations with identity were *mistaken*, and that genuine identity is expressed only by the indiscernibility relation of his present point of view. That is to say, he would regard the various changes the theory had undergone as falling within the framework of one and the same ontology. Philosopher *B*, on the other hand, may claim that we should rather stick to the idea that each  $I_j$  expressed identity in its own stage, thereby implying that at each stage the theory had undergone a rather radical ontological change. This observation is not confined to a temporal development of a theory, but may apply to a simultaneous comparison of several theories. We thus see that there are two (indirect) ways in which stipulating some relation to be identity for a given theory may be wrong:

- (i) Stipulating any indiscernibility relation to be identity may be wrong in imposing an objectual interpretation upon a language (or a stage of mastering a language), where no such interpretation is appropriate at all.
- (ii) Given some specific ontology of a language, or given some specific intuitions of what such an ontology should be like, a particular stipulation of a particular indiscernibility relation to be identity, may be deemed wrong.