If moral experience is discussed in terms of the uniqueness of the imperative, instead of the quality, a similar analysis holds. Either the psychoanalytic or behavioristic accounts of the development of the superego or conscience illustrate genetic explanations of moral experience in the imperative mood. They provide empirical explanations which, if true, account for the facts and do not lead to any undesirable metaphysic about the nature of standards and our conformance to them. An analysis of the kind here presented is thus "non-naturalistic" in the narrower meaning that term has come to have in ethical discussion—insistence upon the indefinability of the moral predicates—yet naturalistic in the broader sense of not admitting extranatural realms of being or ways of knowing. Clearly, it is not necessary to deny some fairly obvious facts of human experience in order to deny objective reality to values.[6]

NOTES

[1] That I do not use "good" to mean "intrinsically good" and why I do not will become clear in the sequel. But "good" is a one-term predicate, not a relation.

[2] This point has been made by Gustav Bergmann. See his "Undefined Descriptive Predicates," *Philosophy and Phenomenological Research*, vol. 8 (1947), especially pp. 81–82. Also "Logical Positivism" in *A History of Philosophical Systems*, V. Ferm, ed. (New York: Philosophical Library, 1950).

[3] *The Philosophy of G. E. Moore* (Evanston, Ill.: Northwestern University Press, 1942), p. 589.

[4] Compare the gestalt psychologists' insistence that such properties as well as meaning and value are "in the world." But their psychological insight is frequently vitiated by an accompanying idealistic metaphysic about meaning.

[5] W. K. Frankena, "The Naturalistic Fallacy," *Mind*, vol. 48 (1939).

[6] I have profited in my thinking on these things from frequent discussion with Professor W. S. Sellars. See also his "Language, Rules and Behavior," in *John Dewey: Philosopher of Science and Freedom*, S. Hook, ed. (New York: Dial Press, 1950).

Ontology and Ideology

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ON SEVERAL occasions[1] I have urged, in substance, that

> 1. The ontology to which an (interpreted) theory is committed comprises all and only the objects over which the bound variables of the theory have to be construed as ranging in order that the statements affirmed in the theory be true.

Bergmann[2] has lately proposed a different ontological standard, which, he

feels, "represents a more adequate analysis of the traditional ontological meaning of 'exist'."

Bergmann adopts, to begin with, the fiction of the ideal language of a possible world. He appreciates that this is a speculative sort of fiction, but believes, perhaps rightly, that it can be helpful provisionally in clarifying a variety of philosophical matters. Appealing then to this fiction, Bergmann interprets my position (for comparison with his own, to be explained hereafter) as follows: for me, he said,

> II. "Properties of the first [logical] type exist in a world if and only if quantification over the predicate variables of this type occurs in its ideal language."

Quite properly for the purposes of his note, Bergmann is here limiting his consideration of my doctrine to the case of predicate variables of first type. But I have a minor quarrel with statement II, having to do with the question of class versus property, which I should mention before moving to more central matters. Of course unbindable predicate variables, viewed simply as schematic letters, carry no ontological commitment; however, once predicate variables are bound, the question arises whether they are bound as variables referring to classes as values or as variables referring to properties as values. If this question is not answered in an explicit interpretation of the notation, we in practice look to implicit cues in the laws of substitutivity of equivalents; thus we may take the values as classes if the system obeys extensional substitutivity laws, but otherwise we must take them as properties.

A more important point is that my own statement (I), unlike statement II, explicates only the *ontological commitments* of a theory and not the *ontological truth* about a world. Bergmann extends I to the latter purpose, in II, by means of his own fiction of the ideal language of a world. This extension is interesting and, granted his fiction, it is certainly the step I should want to make; I merely mention that it is his.

Now let us proceed to the alternative ontological standard which Bergmann proposes. His expression of it, limited again to the case of predicate variables of the first type, is as follows:

> III. "*Properties of the first type exist* in a world if in speaking *about* an ideal language of this world, I find it to contain descriptive constants that are substitution instances for its predicate variables of the first type."

Statement III supposes the ideal language to be of a form which contains primitive constants substitutable for predicate variables. Now I certainly favor limiting our considerations conveniently to certain species of language forms—viz., those involving quantification of variables, rather than alternative expedients such as combinators. But I dislike assuming

that there are primitive constants of a sort substitutable for bindable variables; for, as I have argued elsewhere,[3] such constants are always eliminable, and there are broad advantages in supposing them (in theory) eliminated. When they are eliminated, we are left still with primitive *predicates*; but not in the status of class names or property names, substitutable for bindable class variables or property variables. The bound variables themselves become the sole channel of reference to classes, to properties, or to anything at all.

We might try recasting statement III in the following form, which is no longer subject to the above criticism.

> IV. Properties of the first type exist in a world if in speaking about an ideal language of this world I find it to contain (a) quantification over predicate variables of the first type, and (b) descriptive constant predicates which take individual variables as arguments.

Against IV, however, there is the objection that almost any descriptive language of usual form, whether nominalistic or realistic in its presuppositions by ordinary lights, may be expected to contain some descriptive constant predicates which take individual variables as arguments; hence the clause (b) of IV adds little or nothing to II.

Anyway it is not evident why there should be a connection between constant predicates used and entities presupposed. Surely the mere occurrence of a predicate in the formulation of a theory is not *sufficient* in order that the theory presuppose a corresponding universal entity—a corresponding class or property. Nor is it necessary; for we are familiar with theories which imply that there are indenumerably many classes or properties (even of the first type), though the available predicates are necessarily denumerable.

Indeed, the naturalness and appropriateness of my unmodified statement (I) seems scarcely open to question as long as 'ontology' is taken to mean literally 'doctrine of what there is,' and as long as the theory whose ontological commitments are being examined is expressed in quantificational form subject to the customary interpretation. For the universal and existential quantifiers *mean* simply 'every entity (of appropriate type) is such that' and 'some entity (of appropriate type) is such that.' The theory presupposes all and any of those entities whose nonoccurrence within the ranges of the variables of quantification would render parts of the theory false.

There is doubtless more to metaphysics than ontology in the above sense; and some of this additional matter is perhaps thought of also as ontology in some sense. But it accords with etymology, and also with some portion of the philosophical tradition, to limit 'ontology' to just that part of metaphysics which asks what there is.

Given a theory, one philosophically interesting aspect of it into which we can inquire is its ontology: what entities are the variables of quantification to range over if the theory is to hold true? Another no less important aspect into which we can inquire is its *ideology* (this seems the inevitable word, despite unwanted connotations): what ideas can be expressed in it? Now the spirit of Bergmann's proposal (III), as I see it, is this: in an effort not to omit important issues of ideology he would warp ontology around to include them. It is clearer, I think, to recognize in ontology and ideology two distinct domains of inquiry.

The ontology of a theory stands in no simple correspondence to its ideology. The ontology of the usual theory of real numbers is indenumerable, but the ideology—the range of severally expressible ideas—is denumerable. The ideology of the theory of real numbers embraces individual ideas of just denumerably many of the indenumerably many real numbers. On the other hand the ideology also embraces many such ideas as sum, root, rationality, algebraicity, and the like, which need not have any ontological correlates in the range of the variables of quantification of the theory.

Two theories can have the same ontology and different ideologies. Two theories of real numbers, for example, may agree ontologically in that each calls for all and only the real numbers as values of its variables, but they may still differ ideologically in that one theory is expressed in a language into which the sentence

i. the real number x is a whole number

can be translated, while the other theory is not. Note the importance of this particular example; Tarski[4] has proved the completeness of a certain elementary theory T of real numbers, and we know from Gödel's proof of the incompletability of the theory of whole numbers that Tarski's achievement would have been impossible if i were translatable into T.

The ideology of a theory is a question of what the symbols mean; the ontology of a theory is a question of what the assertions say or imply that there is. The ontology of a theory may indeed be considered to be implicit in its ideology; for the question of the range of the variables of quantification may be viewed as a question of the full meaning of the quantifiers.

As a subdivision of ideology there is the question of what ideas are fundamental or primitive for a theory, and what ones derivative. Bergmann suggests how this distinction might be drawn with the help of an antecedent distinction between logical and extra-logical truth. Various points in Bergmann's paper, this among them, are best viewed as contributions not to ontological but to ideological inquiry.

In the foregoing paragraphs I have contrasted the ontology of a theory with the ideology of a theory. But the contrast carries over also into absolute terms; in absolute ontology we ask what there really is, and in abso-

lute ideology we ask what ideas can legitimately be had, or what primitive ideas are given to us as a basis for thinking. Bergmann has suggested how the fiction of ideal languages can help us make sense of these issues.

I have described the ideology of a theory vaguely as asking what *ideas* are expressible in the language of the theory. Urgent questions of detail then arise over how to construe 'idea.' Perhaps, for what is important in ideological investigations, the notion of ideas as some sort of mental entities can be circumvented. Much that belongs to ideology can be handled in terms merely of the translatability of notations from one language into another; witness the mathematical work on definability by Tarski and others.[5] A typical theorem of ideology in this vein is the above observation that i is not translatable into T.

Both ontology and ideology in their relativized aspects—the ontology *of* a theory, the ideology *of* a theory—belong to what is commonly called semantics. But, as I have urged elsewhere,[6] a fundamental cleavage needs to be observed between two parts of so-called semantics: the theory of *reference* and the theory of *meaning*. The theory of reference treats of naming, denotation, extension, coextensiveness, values of variables, truth; the theory of meaning treats of synonymy, analyticity, syntheticity, entailment, intension. Now the question of the ontology of a theory is a question purely of the theory of reference. The question of the ideology of a theory, on the other hand, obviously tends to fall within the theory of meaning; and, insofar, it is heir to the miserable conditions, the virtual lack of scientific conceptualization, which characterize the theory of meaning.[7] But a partial analogue of the theory of meaning is contained within the theory of reference itself; here extension takes the place of intension, coextensiveness of predicates takes the place of synonymy of predicates, and truth takes the place of analyticity. Much in the way of ideological study can be usefully pursued thus within the theory of reference. Such in particular is the status of the mathematical studies of definability mentioned above.

NOTES

[1] E.g., in "Designation and Existence," *Journal of Philosophy*, 36:701–9 (1939); "Notes on Existence and Necessity," *ibid.*, 40:113–27 (1943).

[2] Gustav Bergmann, "A Note on Ontology," *Philosophical Studies*, 1:89–92.

[3] *Mathematical Logic* (Cambridge, Mass.: Harvard University Press, 1947), sec. 27; *Methods of Logic* (New York: Holt, 1950), sec. 37.

[4] Alfred Tarski, *A Decision Method for Elementary Algebra and Geometry* (Santa Monica, 1948).

[5] Alfred Tarski, "Sur les ensembles définissables de nombres réels," *Fundamenta Mathematicae*, 17:210–39 (1931); "Einige methodologische Untersuchungen über die Definierbarkeit der Begriffe," *Erkenntnis*, 4:80–100 (1935–36); Julia Robinson, "Definability and Decision Problems in Arithmetic," *Journal of Symbolic Logic*, 14:98–114 (1949); W. V. Quine, "A Minimum Primitive for Number Theory," *ibid.*, at press.

[6] "Semantics and Abstract Objects." To be published among the papers presented at the meeting of April 29, 1950, of the Institute for the Unity of Science.

[7] See my "Two Dogmas of Empiricism," forthcoming in *Philosophical Review*, vol. 60.