we may allow further that (2) makes no mention of propositions. These premises, however, do not warrant us in inferring that (1) does not imply that propositions exist. If the possibility of using (2) as a paraphrase of (1) has shown that (1) does not imply that propositions exist then the possibility of using (11) as a paraphrase of (9) would have shown that (9) does not imply that Socrates exists.

The moral, I believe, is as follows. We can rewrite a sentence in this way or that, but the way we will regard as best will be the way that succeeds in displaying the implications that we already believe it to have. It is an error, I would say, to try to ascertain the logical implications of a sentence by attempting beforehand to establish its logical form. That would be to put second things first. In particular, the logical form of (2) is no guide to determining the ontological character of (1). It is rather that the ontological character of (1) is a guide to determining whether the logical form of that sentence is successfully elicited by (2).

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NOTES

¹ Israel Scheffler, *The Anatomy of Inquiry* (New York: Knopf, 1963), pp. 88–110ff; "An Inscriptional Approach to Indirect Quotation," *Analysis* 14:83–90 (1954).

² C. I. Lewis, and C. H. Langford, *Symbolic Logic* (New York: Dover, 1959), p. 324.

³ The Anatomy of Inquiry, p. 101. Scheffler does, however, refer to his inscriptional account as an "analysis"; cf. p. 99.

# *Languages of Art: An Emendation*

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NELSON GOODMAN's *Languages of Art*¹ is a fascinating work well worth careful study. It is marred, however, by serious and confusing misstatements of two key definitions. Goodman presents five requirements which, he stipulates, a symbol system must satisfy in order to count as a "notation." His formulations of two of these, the "syntactic and semantic finite differentiation" (or "articulation") requirements, are not adequate for the use to which he puts them. The syntactic requirement is stated as follows: *"For every two characters K and K' and every mark m that does not actually belong to both, determination either that m does not belong to K or that*

*m does not belong to K'* is theoretically possible" (pp. 135–36). "Theoretically possible," he says, "may be interperted in any reasonable way; whatever the choice, all logically and mathematically grounded impossibility (*as in examples given below*) will of course be excluded" (p. 136; my italics).

One of the subsequent examples is that of "a simple pressure gauge with a circular face and a single pointer that moves smoothly clockwise as the pressure increases. If there are no figures or other marks on the face, and every difference in pointer position constitutes a difference in character, the instrument is not using a notation in reporting pressure to us. The requirement of syntactic differentiation is not met; for we can never determine the position of the pointer with absolute precision" (p. 157). But if "theoretically possible" is understood to exclude only "logically and mathematically grounded" impossibilities, this example does not fail the requirement as it is stated. According to the last sentence quoted above the supposed violation results from the impossibility of determining the position of the pointer "with absolute precision." I will assume, for present purposes, that this is an impossibility, indeed a logical impossibility. But this has nothing to do with the scheme's status with respect to Goodman's requirement.

Consider any two characters of this scheme, e.g., the positions of $90°$ and $90.00001°$ from horizontal. No matter what the actual position of the pointer is, it *is* theoretically possible, in any logical or mathematical sense, to determine either that it is not at one of those positions or that it is not at the other. If this is not possible it is so because of limitations of measurement technology, not for reasons of logic. Ascertaining the *exact* position of the pointer is not necessary in order to distinguish between its being at $90°$ and its being at $90.00001°$ from horizontal. Nor is this necessary in order to distinguish between any other two positions we might consider, no matter how close together they are. Given any desired degree of measurement precision, short of absolute accuracy, it is logically (and "mathematically") possible for measurement technology to advance sufficiently for that degree of precision to be achieved. Hence in this scheme, for any two characters and any mark it is theoretically possible, in any logical or mathematical sense, to determine of at least one of the characters that the mark does not belong to it.

This is perhaps "theoretically" impossible in a weaker sense not implying logical impossibility, if high-level physical laws entail that there is a limit short of absolute precision to the fineness of discriminations that can be made. But there is ample evidence that Goodman has nothing of the sort in mind. Nowhere in *Languages of Art* are any such laws mentioned.

Moreover, Goodman's appeal to the impossibility of perfect accuracy would be pointless if he were really relying on a limit to measurement precision short of perfect accuracy.

The requirement of "finite semantic differentiation," i.e., "*for every two characters K and K' and every object h that does not comply with both, determination either that h does not comply with K or that h does not comply with K' must be theoretically possible*" (pp. 152–53), suffers from a corresponding malady (if "theoretically possible" is again interpreted as excluding only logical and mathematical impossibilities). Goodman's first example is "a system consisting of fully reduced Arabic fractional numerals taking as compliants physical objects according to their weights in fractions of an ounce" (p. 153) which, he thinks, "everywhere violates the fifth [semantic differentiation] condition" (p. 153). On the contrary, it violates this condition nowhere. For any given pair of fully reduced (i.e., non-equivalent) fractions it is theoretically possible to distinguish between objects whose weight in ounces corresponds to one and objects whose weight likewise corresponds to the other, notwithstanding the theoretical impossibility of weighing objects with absolute precision.

This problem is not a local one, restricted to a few isolated examples. Indeed most, though not all, of the systems Goodman claims violate the syntactic or semantic differentiation requirement do not do so, for the reasons discussed above. (Cf., for example, pp. 137, 153, 157, 159, 226–27.) Moreover, the difficulty is passed on to Goodman's broadened definitions of syntactic and semantic differentiation designed to deal with expression in the arts. Again, cases said to fail the requirements do not fail them. (Cf. pp. 234, 238–39.)

Goodman's semantic requirement also suffers from a second peculiarity illustrated by the redundant system consisting of the characters A, B, and C, having the following compliance classes:

A: lines less than one inch long
B: lines less than one inch long
C: lines more than two inches long

He evidently does not intend the requirement to exclude automatically either redundant systems or ones in which it is sometimes theoretically impossible to determine whether or not a given object complies with a given character (as it is impossible in this system to tell whether or not a line exactly one inch long complies with A), since the requirement so obviously does not automatically exclude systems of either sort. (Goodman leaves it to his "semantic disjointness" requirement to rule out redundant systems. Pp. 151–52.) But the system described above clearly does violate

Goodman's requirement. A line exactly one inch long does not comply with both A and B (in fact neither); yet it is not theoretically possible to determine either that it does not comply with A or that it does not comply with B.[2]

The following reformulation of the syntactic requirement avoids the difficulty discussed above; and is I believe adequate for Goodman's needs: *For every character K and every mark m, determination either that m does not belong to K or that m belongs either to K or to no character is theoretically possible.* The pressure gauge fails the requirement so stated, as it should, and for the reason Goodman gives, viz. the impossibility of determining the position of the pointer with "absolute precision." Let m and K be any mark and character such that m in fact belongs to K. Determination that m does not belong to K is of course not possible, since it does. And determination that m belongs either to K or to no character is not possible, because it does belong to some character and determining that it belongs to K would require determining the pointer's position exactly.

The semantic requirement should be restated in corresponding fashion, i.e., *For every character K and every object h, determination either that h does not comply with K or that h complies either with K or with no character is theoretically possible.* This formulation also allows the redundant system referred to above to be semantically differentiated, as Goodman's does not.

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### NOTES

[1] Indianapolis: Bobbs-Merrill, 1968. All page references are to this source.
[2] Correspondence with Professor Goodman confirms that he intends the semantic differentiation requirement not to exclude this example. Other comments of his, and suggestions by Gordon Lee Bowie, were helpful in the writing of this note.

# Two Concepts of Psychologism

## by G. L. PANDIT

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THE traditional concept of psychologism appears to be discrepant with the use of the term in certain contexts of current philosophical interest. As a result the term "psychologism" remains ambiguous. This paper is an at-