

Review

Author(s): Adam Morton

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propositionhood; is it a property, and if so, what property, and how does it differ from the possibility of *something's* being red? I wish Slote had developed this system of ideas more fully. It seems to me more interesting, and more promising, than the main project of the book.

ROBERT MERRIHEW ADAMS

University of California, Los Angeles

Deviant Logic. SUSAN HAACK. Cambridge and New York: Cambridge University Press, 1974. xiv, 191 p. \$11.95.

The aim of *Deviant Logic* is to examine "the philosophical, rather than the purely formal, consequences of adoption of non-standard systems" of logic. The questions are whether we could be justified in accepting a system of logic that is unlike classical two-valued quantificational logic, and what gains or troubles this might involve. Haack approaches these questions directly, by giving some general ideas about the reasons there might be for changing one's logic, and then sharpening them in discussing a number of particular cases. She argues that the possibility of a change of logic is provided only by suggestions of "deviant logics," in which some accepted principle is rejected, rather than "extended logics," in which the range of logic is extended to include new terms and principles. And then she argues that there are no convincing reasons why some occasion might not arise which makes us adopt a deviant logic. She argues that, whatever the difficulties and complications of a deviant logic, the relevant item for comparison is the difficulty and complication of a logic plus a total theory of the world, and it might, just might, turn out that some combination of deviant logic and theory of the world did its job more easily and simply than any more orthodox alternative. Still, there may not actually be any such cases, present or looming, and so she considers suggested changes of logic in connection with future contingents, intuitionism, vagueness, nondenoting singular terms, and quantum logic. In each of these cases she finds that the threat to classical logic is not very serious. Either the proposed logic is best interpreted as an extended rather than as a deviant logic, or the reasons for thinking that adopting it would help explain or unify our beliefs are unconvincing.

The project needs doing, and Haack's approach is natural and promising. There is surely little point to nurturing logical systems

without some idea of the employment they may find, and surely some general ideas about the ways in which different kinds of logic might be useful would be worth having. The trouble is, she doesn't give us any. Each of the later chapters has a conclusion telling why one particular kind of deviance does not pay, and the first three chapters give reasons for not ruling out deviance a priori; but there are no conclusions about the kinds of reasons that might prompt changes in logic, as opposed to changes in physics or meteorology, or about the likelihood that such changes will occur.

Haack is caught between her doctrines and her intentions, I think. If the topic is change in logic, and changes in logic are justified by the nature of particular combinations of theory and logic, then we need to see the details of the theories that are to be wedded to the logics. Presumably the central cases are quantum mechanics and intuitionism; it is hard to see how to discuss them along these lines without a real visit to the Hilbert spaces and the free-choice sequences. But then the discussion will have to get turgid and technical, as Haack's wonderfully isn't, and conclusions of any generality are unlikely. Then what is the book for?

In fact, Haack's method in much of the book seems at odds with her epistemology. She seems, for example, to be looking for simple arguments showing how to escape quantum-mechanical paradoxes by tinkering with logical laws. This would make more sense on a less holistic epistemology. It would also make sense if the aim were to look at the quantum-mechanical beliefs we already have, to see whether there is a deviant logic somehow implicit in them. Now, although this is not what Haack thinks she is doing, it would explain parts of her discussion of future contingents, vagueness, and singular terms. For many of the authors she discusses in these chapters are arguing not that we could or should change our logic to deal with difficulties about these things, but rather that the logic embodied in the way we actually do now think about them is not built along classical lines. No change needed.

But although adopting a new strange logic may be a very different matter from discovering that one always had one, the process of intuitively conceiving how a law of classical logic might fail, of *understanding* the proposal, is rather the same in both cases. And Haack's choice of topics seems in this way very natural: one understands how it might be that electrons or numbers might disobey classical logic by thinking of them through analogies with future contingencies, vague predicates, or fictions. Then, whether or not one thinks that the logic of these is actually deviant, the fact that

there is a certain tension in our thought about them, tending toward deviance, gives one a way to understand deviance elsewhere.

This needs to be understood better. Haack's arrangement of topics, and some of her arguments, are suggestive here, but no more than suggestive. What is it about these areas—the future, the abstract, the unreal, the vague—that creates the tension between them and classical logic? One common factor is the way in which semantical concepts are strained, and their presuppositions fail. In fiction we don't have truth, facts, and factuality, of any ordinary sort, and, if the logic of the future is deviant, then some things are going to be true that are not true now.¹ This does little more than restate the problem: of course truth cracks when logic bends. But it points the right way; in all these cases one can doubt that the objective relations that link words and facts exist. Thus the important thing about the future is that, whatever the details of the relations that constitute a sentence's truth, they are real physical relations requiring real causal connections of some sort, and, if there are not enough causal relations among present facts, continuing objects, laws of nature, and future facts, present words *may* not be related to future facts as they are to present facts. And if differences of scale present causal barriers as differences in time may, so that measurements of the states of quantum-mechanical systems determine the details of what they measure, then again words, in the larger world, may have trouble connecting with facts, in the quantum world.²

One cannot take truth or logic to be unstructured, truth as a simple unanalyzed predicate or logic as something we unequivocally "have," like a theory or a custom. The fact surely is that at any time we have theories of the world, from which we argue and reason in varying patterns, suppressing and uncovering premises according to whim and convenience, and in this complex of belief and practice logicians find logic, guided by generally observed patterns of argument and generally held conceptions of truth, reference, and reality. Some changes in theory may require a rethink-

¹ This provides a good example of the way in which the intelligibility of deviance in one area helps one to understand the assertion of deviance in another: Kripke's semantics for intuitionistic logic, in "Semantical Analysis of Intuitionistic Logic I" in J. L. Crossley and Michael Dummett, eds. *Formal Systems and Recursive Functions* (Amsterdam: North-Holland, 1964), in effect treats intuitionistic logic as a tense logic.

² This account is roughly what you would get by reinterpreting Dummett's account in "Truth," *Proceedings of the Aristotelian Society*, LIX (1958/9): 141-162, through the apparatus of Hartry Field's "Tarski's Theory of Truth," this JOURNAL, LXIX, 13 (July 13, 1972): 347-375.

ing of this process, because they undermine the semantical assumptions that justified the imposition of a particular logic on the complexities of our arguings. Then, presumably, one understands the logic one finds in the new theory by comparing it with the logics one could have found in the old theories.

ADAM MORTON

Princeton University

NOTES AND NEWS

The Wittgenstein House in Vienna, in the third district of Landstrasse, was designed in 1929 by Ludwig Wittgenstein for his sister, to whom it belonged after his death. In 1974, it was a distinguished building in disrepair and in danger of demolition. In 1975 it was bought for \$470,000 by the Embassy of Bulgaria, to house a new Bulgarian cultural institute. It has now been renovated (at a cost exceeding the purchase price) and is open to the public; it provides space for concerts, exhibitions, and meetings.

The Institute of Society and the Life Sciences is sponsoring three workshops during the summer of 1977: A general Workshop on Medical Ethics and a Workshop on Death, Dying, and Public Policy will run concurrently at Sarah Lawrence College in Bronxville, N.Y., during the week of June 19-26; a Workshop on Ethical Theory in a Medical Context will be held at Stanford University in Palo Alto, California, during the period June 26-July 2. Workshop fees are \$225 plus additional room and board costs. For further information, write: Institute of Society, Ethics and the Life Sciences, Box 651, 360 Broadway, Hastings-on Hudson, New York 10706.

NEXA, San Francisco State University's NEH-funded Science-Humanities project, is pleased to announce a symposium on Sociobiology: Implications for Human Studies, June 14/15, 1977. Panelists include: philosophers Marjorie Grene, David Hull, Jerome Schneewind, and John Searle; biologists Donald Griffin, Garrett Hardin, and George Wald; psychologists Frank Beach and Karl Pribram; economist Kenneth Boulding; physicist and historian of science Gerald Holton; and anthropologist S. L. Washburn. The symposium will occur in conjunction with the 58th Annual Meeting of the American Association for the Advancement of Science (Pacific Division). For further information, write: Anita Silvers, Department of Philosophy, San Francisco State University, 1600 Holloway Avenue, San Francisco 94132.