

*COGNITIVE PRACTICES: HUMAN LANGUAGE AND
HUMAN KNOWLEDGE*

by Rita Nolan

Oxford, UK and Cambridge, MA: Blackwell, 1994, 171 pp.

In *Cognitive Practices* Rita Nolan brings the following question concerning human language and knowledge (what I shall call “Q”) to center stage:

- (Q) How is human language related to human knowledge such that it endows our species with a cognitive advantage over other species, an advantage, so it seems, in understanding the environment in which our members find themselves? (p. 3)

The aim of her book is (1) to diagnose why this question eludes most current theories of language and knowledge; (2) to propose an alternative approach that permits the question to be asked; and (3) to initiate a direction of inquiry towards a satisfactory answer to it. (p. 3)

In carrying out this project, Nolan addresses several issues in the philosophies of language, mind and logic, in developmental psychology, and other fields—e.g., the nature of codes, Chomsky's and Fodor's nativism, Vygotsky's theory of linguistic and conceptual development, the relation between Wittgenstein's early and later philosophy, Goodman's grue-like predicates, to name a few. While these issues and her positions on them are relevant and interesting, their sheer number in a short work (171 pages) virtually guarantees that many will not be developed and sufficiently argued for to support her main theses in a convincing fashion. I believe that has occurred: for all Nolan says, it remains unclear both that current theories of

BOOK REVIEWS

language and knowledge are unable to address Q, and that Nolan's alternative is correct. I shall make a few remarks on these points.

I begin with Q. Q has two crucial presuppositions: first, that humans are cognitively advantaged over other species in understanding their environment; and second, that language endows us with this advantage. The first, perhaps, is uncontroversial, so long as "understanding more" is assumed to be advantageous. (From an evolutionary perspective this is unclear: bacteria, e.g., do rather well.) However the second is far from obvious, though plausible and possible. For surely, pretheoretically, it is possible that our cognitive advantages are responsible for endowing us with language, or are independent of language (like the cognitive advantages non-human primates have over reptiles). Of course Nolan might simply be claiming that *some* of our cognitive advantages are such that we enjoy them in virtue of having language, and that current theories of language cannot account for *those*. But the trouble is that nowhere does Nolan clearly state, let alone argue for, what these specific advantages are. She provides some rough ideas of what she thinks they are and are not—e.g., respectively, communicating propositional information (p. 10 ff.), and expanding the range of possible interpersonal relations (p. 155)—but these are too vague and underspecified, to my mind, to support serious criticism of current theories of language, or to confirm her own position. More space, I believe, should have been devoted to an initial discussion of Q and setting up of the problem.

Nolan's target is a group of approaches to language and thought that she represents collectively as "The Standard Theory" (p. 18 ff.). The Standard Theory is characterized in terms of its positions on four issues regarding language: evolution, social aspects, metaphysics, and formalization. In a nutshell the view is that human language is continuous with animal communication, is meant for the exchange of information in accordance with conventions, expresses true beliefs provided for by perception, and is formalizable by a referential semantics. Many theorists are cited as proponents—Chomsky, Fodor, Barwise and Perry, Lycan, Bennett, Dretske, Lewis, and Searle, among others. These theorists differ from one another in many ways, as Nolan recognizes, but some do not even subscribe to the Standard Theory's

line on all four issues. For example, the view that human language is just a more complex form of animal communication is one neither Chomsky nor anyone sympathetic to his program would accept (see, e.g., Chomsky 1986). Nolan's intention, however, is to criticize the Standard Theory's position on each of the four issues; so any theory that maintains any of them will count as a target.

The main thrust of Nolan's critique is found in Chapter 2 and proceeds by way of a discussion of the nature of codes. According to Nolan, the Standard Theory treats natural languages as codes. Two codes are discussed—the mathematical coding of television pictures, and a letter code in which natural language messages can be transmitted. Nolan extracts a list of properties these codes share. Her aim “is to reveal the fundamental properties that are attributed to natural languages in calling them codes” (p. 30), and she concludes that codes possess a number of features that natural languages lack. She lists seven such features (p. 37), a few of which are these: codes are such that the number of transmittable messages depends on features of what is encoded rather than on features of the code; codes have no syntax independently of what they are used to encode.

How are these points about codes employed against the Standard Theory? It is not entirely clear (at least to this reviewer), but at the most general level Nolan's argument seems to be this:

1. According to the Standard Theory language is a code
2. But language is not a code
3. Therefore the Standard Theory is false

For this argument to succeed, equivocation with respect to the predicate “is a code” must be avoided: the features of codes that Nolan claims natural languages lack must be features that languages possess according to the Standard Theory. However this simply does not seem to be true of the properties on Nolan's list. For example, *no one* claims that natural languages lack syntax, no matter what might be true of certain codes. If languages are codes, it is not in *that* sense of “code” that they are codes. Nolan might claim that anything that lacked all or most features on her list would not be a code. But presumably her aim is not merely to show that Standard Theorists misuse the word “code.”

BOOK REVIEWS

What needs to be addressed are the specific claims Standard Theorists are making regarding language through their use of the code metaphor. Perhaps the core idea is just that there is a correlation between linguistic items and their semantic values, and that that is what gets learned in learning language. Nolan addresses this idea. She considers Fodor's (1975, 1981) nativistic account of how such a correlation might get set up, and rejects it. While I agree with Nolan that Fodor's account is not overly plausible on its face, I concur with Fodor that there are no clear alternatives to the hypothesis-generation-and-test model of concept acquisition (from which model, along with premises about the absence of definitions for most concepts, radical nativism follows), and that consequently his argument must be taken seriously. (It should be said that connectionist models provide some small hope that an alternative might be forthcoming. See, e.g., Clark 1993.) Nolan, however, dismisses Fodor's position too quickly, in my opinion. While she presents an interesting argument to the effect that his view entails that children possess innate concepts for all words in all languages, I think that argument can be countered with the second of two responses she briefly considers. This is one of the many sections in the book where one would have hoped for a more detailed treatment of the relevant issues and arguments.

In the end, I do not see that Nolan's discussion of codes, has brought to light any particularly damaging considerations concerning the Standard Theory, either with respect to its ability to support an answer to Q, or its overall plausibility.

Following her critique of the Standard Theory, Nolan presents her alternative and her defense of it. She focuses on a phenomenon called "superordination," which concerns the fact that categories have a hierarchical organization (p. 63 ff.). Robins are bird, collies are dogs, birds and dogs are animals, animals and pieces of furniture are things, etc. The categories *robin* and *penguin* are subordinate to the category *bird*, *bird* is superordinate to both *robin* and *penguin*, *animal* is superordinate to *bird*, etc. Nolan's claim is that children do not master this fact about the organization of categories until relatively late in childhood (around age 7). She appeals to evidence reported by the psychologist Jeremy Anglin and others to the effect that 2 and 3 year old children,

BOOK REVIEWS

...in their answers to questions of the sort "What is a dog/ a car/ cereal?"...overwhelmingly cite particular instances of these things..., for example, Martha's dog, even though they appear to have some knowledge of the appropriate superordinate—"animal," "vehicle," "food." Although ready to answer the question "What is a VW?" and "What is a robin?" with, respectively, "a car" and "a bird," they are equally ready to respond to "What is a car?" and "What is a bird?" with "a VW" and "a robin"...(pp. 63-64)

According to Nolan these data show that "superordination and subordination are treated as true inverses.... There is...no clear appreciation of the hierarchical ordering of concepts/words" (p. 65). Nolan proceeds to claim that without a grasp of superordination, the child does not have the capacity for predication—the capacity of ascribing properties to objects. Indeed, before superordination at age 7, according to Nolan, the child lacks concepts! ("Initial language entry [with the appearance of superordination] marks the onset of conceptualization." (p. 79)) This certainly is an alternative to the Fodorian nativist position regarding concepts—though it may rival it with respect to *prima facie* implausibility. In any event, it should be fairly clear how Nolan's account can allow for answers to Q: many of our cognitive abilities undoubtedly depend on some sort of capacity for predication, and that is explained by our grasp of superordination.

The issues Nolan raises are intriguing, and a good part of the book is taken up with them. It is somewhat striking, however, that she bases such a strong, sweeping thesis almost entirely on a single piece of evidence from developmental psychology. What is equally striking is that she does not seriously explore any alternative interpretations of those data. Nolan asks regarding the child's pattern of responses: "Is this merely a syntactic quirk...[or] is there a semantic and cognitive dimension to the phenomenon?" (p. 69). She adopts the latter option without any real consideration of the former, or others.

However there may be a number of plausible alternative interpretations of the data. For example, in responding "a robin" instead of "an animal" to the question "What is a bird?", might not the

BOOK REVIEWS

child simply be assuming that she is being asked to demonstrate that she knows what birds are—in which case giving an example of a bird would do the trick? After all, young children frequently are asked to display knowledge of kinds by pointing to their instances. (“Do you know what a sax is Charlie? Show Daddy what a sax is. What’s a sax?” Charlie points to the saxophone and Daddy smiles.) On this story, there would be various ways of demonstrating knowledge of kinds of things, including mentioning a superordinate category, and mentioning or pointing to instances. To make the story run, there would have to be an account that explains how the child chooses. One possibility might be that the child will prefer providing particular instances, unless a simple description or concrete instance is unavailable—in which case the child will offer a superordinate category if she knows one. This might be tested by asking a child in the presence of a toy VW and a toy Buick “What’s a VW?” Would the child answer “a car” (as in toyless contexts), or pick up the VW and say “This!”? The current hypothesis would predict the latter.

While much more would need to be said regarding the above hypothesis by way of clarification, my current point, simply, is that it is far from clear that Nolan’s interpretation of the developmental evidence she considers is the only possible interpretation, let alone the most plausible one.

Even if Nolan is right, however, about the late onset of superordination, there is a further matter concerning the “perceptual categories” which according to her, even pre-superordinate children possess (pp. 118 ff.). Such categories correspond to the pre-superordinate child’s “proto-predicates” (p. 72). This distinction between conceptual and perceptual categories sounds very much like the distinction between conceptual and nonconceptual content that many philosophers suspect is needed for an overall account of both animal and human cognition (see, e.g., Evans 1982, Cussins 1990, Peacocke 1992). Would Nolan count such theorists as Standard Theorists, one wonders? I do not see why she should not. However if she does, then it is not obvious that some version of the Standard Theory could not accommodate superordination, so long as there is built into the theory something akin to the distinction between conceptual and nonconceptual content.

BOOK REVIEWS

In conclusion, Nolan has focused on some deep and important issues concerning conceptual development and mental representation more generally. Anyone interested in these topics would do well to consider the data she brings to bear on the issues, and her discussions of those data. I believe that considerably more must be said, however, to convince anyone who is not already sympathetic to her position that it is correct. Some of Nolan's remarks suggest she is aware of this. It is to be hoped, then, that in the future we will see more extended treatments of some of the ideas and arguments introduced in *Cognitive Practices*.

MICHAEL V. ANTONY

UNIVERSITY OF HAIFA
HAIFA 31905
ISRAEL
antony@research.haifa.ac.il

REFERENCES

- Chomsky, N. (1986). *Knowledge of Language*. New York: Praeger.
Clark, A. (1993). *Associative Engines*. Cambridge, MA: MIT Press.
Cussins, A. (1990). "The Connectionist Construction of Concepts," in *The Philosophy of Artificial Intelligence*, M. Boden (ed.). Oxford: Oxford University Press.
Evans, G. (1982). *The Varieties of Reference*. Oxford: Oxford University Press.
Fodor, J. (1975). *The Language of Thought*. New York: Crowell.
Fodor, J. (1981). "The Current Status of the Innateness Controversy," in *RePresentations*. Cambridge, MA: MIT Press.
Peacocke, C. (1992). *A Study of Concepts*. Cambridge, MA: MIT Press.