# Book Reviews

## A Procedural Approach to Word Meaning

**Language and Perception.** GEORGE A. MILLER and PHILIP N. JOHNSON-LAIRD. Belknap Press of Harvard University Press, Cambridge, Mass., 1976. xii, 760 pp. $20.

*Language and Perception* represents a relatively new departure in the psychology of language. In it, Miller and Johnson-Laird present the basis for a psychological theory of word meaning, relating people's perceptual knowledge about the world to language use, and make some cogent arguments for taking a "procedural" approach to semantics—to the study of meaning. The authors begin by reviewing the psychology of perception, first taking up what is known about the different sense modalities (chapter 1) and then going on to consider the nature of what people perceive of objects and events, such as surfaces, edges, motion and direction, and causality and intention, in the world around them (chapter 2). This account of perception makes fascinating reading on its own, but it also lays the groundwork for Miller and Johnson-Laird's theory about the links between perception, cognition, and word meaning. From this point on, they focus more directly on the problem central to this book—the relationship between words whose meanings are related and the conceptual domains they denote.

Chapter 3 tackles meaning, verification, and understanding. It considers how perceptual and cognitive factors could be searched for and retrieved from memory and how they could be translated into "routines" for finding, identifying, and storing specific information. Routines in procedural semantics could be said to consist of a series of steps, analogous to those used in a computer program, whereby the speaker or listener decides whether a word appropriately picks out a particular concept or not. To take a very simple example, the procedure for the word *man* might involve checking whether the entity in question is human, adult, and male (three further procedures or routines). If all three fit, then *man* can be said to apply to that entity; if they don't fit, then *man* is inappropriate. Ideally, one should be able to specify the precise psychological operations involved in deciding whether a word could be used in different contexts to pick out specific entities (the speaker's role) and the operations involved in going from hearing a word to deciding upon its referent (the listener's role). By using a procedural approach, Miller and Johson-Laird have been able to show how perceptual and cognitive information might be used in these ways, but it is not clear whether they have solved the problem of how people go about finding, identifying, and matching different kinds of information in memory without falling into some of the verificationist traps that have troubled so many philosophers.

Chapter 3 presents Miller and Johnson-Laird's theory and notation, and the four remaining chapters provide extended illustrations of how they analyze words in particular conceptual domains. Chapter 4 takes up some properties of semantic fields; chapter 5 considers kinship terms (for example, *sister*, *uncle*) and color terms, and chapter 6 takes up words for spatial, temporal, and causal relations and tries to give a unified analysis based on previous linguistic and philosophical treatments. Chapter 7 tackles the semantic fields composed of verbs of motion (for example, *run*, *travel*), possession (*have*, *give*), vision (*see*, *look at*), and communication (*say*, *ask*). What is disappointing about these later chapters is that Miller and Johnson-Laird do not use their elaborate theoretical framework to go beyond the analyses psychologists, linguists, and philosophers have already presented. Nonetheless, their account of the literature is both impressive and very readable. It provides an enjoyable way in for those who are not already aware of what has been done. The Conclusion contains the authors' summing up of how far they have managed to get and of some of the problems that remain for their approach to a psychological theory of meaning.

This monograph perhaps makes its most valuable contribution through the questions it raises in the reader's mind, some of them questions not explicitly discussed by the authors. Let me pick out a few examples and relate them to Miller and Johnson-Laird's approach.

One problem that has proved troublesome to many linguists is the dichotomy between dictionary and encyclopedia. To do a semantic analysis, one has to know how much of what is tapped by a word belongs in the mental dictionary for that language and how much is part of the speaker's or listener's encyclopedic knowledge about the concept in question. The line between dictionary and encyclopedia becomes critical when one "decomposes" a word meaning into smaller units of meaning, as in traditional componential analyses. Although the procedures that go with each word bear a superficial resemblance to semantic components, their role is different: they provide the link between words and the perceptual or conceptual information the words pick out. For Miller and Johnson-Laird, words rather than procedures appear to be the unit of analysis for meaning. Procedural semantics, then, solves the dictionary-encyclopedia problem by listing only words in the dictionary and considering everything else part of encyclopedic knowledge. Miller and Johnson-Laird thus escape having to draw an arbitrary line between knowledge about the meaning of a word and knowledge about the concept picked out by that word. This is a considerable advantage for any theory about word meaning.

A second question concerns the procedures themselves. Although Miller and Johnson-Laird give a very clear account of the forms procedures might take in order to link perceptual or cognitive information to words, it remains unclear what level of detail is required in the analysis of procedures. If procedures contain other procedures (as in the *man* example given above), how far down does one have to go before one can pinpoint the match between linguistic and perceptual or linguistic and cognitive information? Miller and Johnson-Laird do not provide any real answer.

Another issue associated with procedures concerns their ontogenesis. How are procedures built up in the first place? What is their role in the acquisition of language by children, or even in the acquisition of new words, phrases, and idioms by adults? While these questions are outside the main scope of Miller and Johnson-Laird's discussion, the answers may have important implications for how people understand new words never heard before and why they sometimes use old words with new meanings and yet expect their listeners to understand.

Yet another problem is whether a procedural approach to meaning can cope with vague or fuzzy category boundaries. We often think of boundaries between categories as being clear-cut, but consider the one between cups and

glasses: speakers of English are sometimes hard put to decide whether *cup* or *glass* is the more appropriate word for a particular drinking vessel. Boundary questions are closely tied to recent psychological analyses of category membership that have shown, for example, that some birds are more typical birds than others (compare robins and turkeys). Natural categories, it turns out, admit degrees of membership and this is reflected in how quickly and accurately people process words used to name category members. In discussing category names, Miller and Johnson-Laird seem to assume that there are criterial or "defining" procedures that can be used in deciding whether to apply word X or word Y. However, if membership is a matter of degree, the category itself may be defined by family resemblance à la Wittgenstein, with several properties in common from member to member but no set of properties common to all. The question is whether procedures will prove flexible enough to take findings like these into account.

*Language and Perception* represents an impressive amount of work on the part of the authors and contains many interesting ideas, but clearly much remains to be done. Everyone concerned with psychological theories of meaning should read this monograph and then weigh for himself the success of this attempt to take a procedural approach to meaning. Whatever the judgment, this book will probably prove as valuable for the questions it has left open as for those it discusses in depth.

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## Neglected Subjects

**Another Voice**. Feminist Perspectives on Social Life and Social Science. MARCIA MILLMAN and ROSABETH MOSS KANTER, Eds. Anchor (Doubleday), Garden City, N.Y., 1975. xviii, 382 pp. Paper, $3.50.

While many social scientists regret and oppose the exclusion of women in their worlds, they have remained ignorant of the biases perpetrated in their work by the failure to bring women under their lenses. Thus the effect of the missing woman in the social sciences is a relatively new subject of study for those working in the sociology of knowledge.

There is much to correct in the profiles of social groups and institutions that exclude women. When 43 percent of the work force is composed of women but women are not taken into account in studies of "workers," when women are active campaigners in elections yet are not considered by students of political behavior, and when women sponsor, cultivate, and are consumers of "high" culture but are assumed not to be truly creative it is clear that selective perception of a most insidious type limits the vision of those whose eyes ought to be clear beyond all others.

It is true that women have been given attention in sociology in the context of the family. But "family sociology" has been a low-prestige field within the discipline and has never been of much interest to most major scholars. Most new research on the behavior of women has been classified as "sex-role studies" or "women's studies," and the work that falls under these headings has had no better fate in attracting major attention and scholarly resources than the much-undervalued field of family sociology. Does it matter what title is given to new research? Any serious social scientist who thinks about the question will recognize how crucial labels are when they carry implications of worth.

*Another Voice* is a collection of writings exploring the consequences of the omission of women from studies of social life. Students of the occupations, of culture and art, of social stratification, of the sociology of knowledge, of minority groups, or of social psychology would be remiss to classify the book as just another collection about women, for the insights it presents into their fields are numerous and penetrating.

I would have liked the article by David Tresemer, "Assumptions made about gender roles," to come first in the collection. Tresemer applies logical analysis to the inconsistent and intellectually irresponsible views held by many scientists. Tresemer differentiates between gender roles and sex roles, taking "gender roles" as referring to learned roles and to the psychological and cultural definitions of the dimensions "masculine" and "feminine." "Sex roles" he would prefer to see confined to the tiny number of roles functionally related to sex, such as wet nurse or semen donor.

Tresemer is fighting a lost semantic battle—"sex roles" is the label under which it all began, and the label will probably remain. However, even those who persist in that usage ought to and can be persuaded that sex roles or gender roles are culturally rather than physiologically determined and perpetuated and that those personality traits that are conventionally associated with femininity or masculinity, such as tenderness or aloofness, passivity or aggressiveness, or docility or assertiveness, are in reality distributed more or less randomly among people, depending on the norms of the society.

Tresemer makes the point that research that seeks explanations for male gang behavior, or for the small numbers of women in high administrative posts, in childhood behavior or in hormonal levels is "overly simplistic, inevitably sexist, and not at all useful for change of the social behaviors of concern."

Most of the essays in this volume, as might be expected, are not candidates for such criticism. I say "most" because here and there one finds a bit of female chauvinism, which I believe is no more productive than the male variety. I don't believe, for example, that women have special ways of looking at behavior or that their emotions lead them to special insights. While it proves to be true that women are more interested in the subject of women than are men, this is a relatively recent predisposition, heightened by political mobilization.

Arlie Russell Hochschild, for example, suggests in a well-reasoned call for a sociology of feeling and emotion that the reason for the past neglect of these aspects of behavior is that they belong to the sentimental, expressive domain—a "feminine" domain. The idea that there is a logical linkage between a discipline and a perception based on a particular sex may be the rationale for including this essay in a volume on "feminist perspectives," but such an explanation is suspect. I'm not convinced it was male chauvinist bias that led Max Weber to confuse "rationality" and "emotionlessness" or that has led social scientists to treat economic and political institutions as "rational" and view the family as the domain of emotionality. It is certainly a reflection of bias, however, to characterize the political arena (one of artifice, gamesmanship, and emotionality of participant and observer) as rational while the family (in which people work to create and maintain food and housing and to train the young for civilized behavior) is labeled emotional and therefore irrational.

In any event, Hochschild's essay is an example of what can be accomplished by discarding old models to conceptualize anew. It argues that science may not exclude human characteristics or structures because they are difficult to conceptualize or measure and that dichoto-