LANGUAGE AND MENTALITY:
COMPUTATIONAL, REPRESENTATIONAL, AND
DISPOSITIONAL CONCEPTIONS*

(A) cognitive theory seeks to connect the intensional properties of mental states with their causal properties vis-à-vis behavior. Which is, of course, exactly what a theory of the mind ought to do.

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ABSTRACT. The purpose of this paper is to explore three alternative frameworks for understanding the nature of language and mentality, which accent syntactical, semantical, and pragmatical aspects of the phenomena with which they are concerned, respectively. Although the computational conception currently exerts considerable appeal, its defensibility appears to hing upon an extremely implausible theory of the relation of form to content. Similarly, while the representational approach has much to recommend it, its range is essentially restricted to those units of language that can be understood in terms of undefined units. Thus, the only alternative among these three that can account for the meaning of primitive units of language is one emphasizing the basic role of skills, habits, and tendencies in relating signs and dispositions.

There are several reasons why the nature of language and mentality is fundamental to research in artificial intelligence and to cognitive inquiry in general. One tends to be the assumption – better viewed as a presumption – that thinking takes place in language, which makes the nature of language fundamental to the nature of mental processes, if not to the nature of mind itself. Another is that computers operate by means of software composed by means of a language – not a natural language, to be sure, but a computer language, which is a special kind of artificial language suitable for conveying instructions to machines. And another is that debates continue to rage over whether or not machines can have minds, a question whose answer directly depends upon the nature of mentality itself and indirectly upon the nature of language – especially the nature of languages suitable for use by machines.

Below the surface of these difficulties, however, lies another problematic question, namely: is artificial intelligence descriptive or normative? For if artificial intelligence is supposed to utilize the methods that human beings themselves – descriptively – actually employ in problem solving, then there

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would appear to be a powerful motive for insuring that the languages used by machines are similar (in all relevant respects) to those used by humans. If artificial intelligence is not restricted to the methods that human beings actually employ but may utilize those that humans should use — normatively — whether or not they actually do, then whether computer languages are like or unlike natural languages at once appears to be a less pressing issue.

Most students of artificial intelligence tend to fall into two broad (but heterogeneous) camps. One camp maintains the ‘strong’ thesis that AI concerns how we do think. The other maintains the ‘weak’ thesis that AI concerns how we ought to think. And there are grounds to believe that the predominant view among research workers today is that the strong thesis is correct. Eugene Charniak and Drew McDermott, for example, envision AI as “the study of mental faculties through the use of computational models” [Charniak and McDermott (1985), p. 6]. An assumption that underlies this approach is that, at some level, the way in which the mind functions is the same as the way in which certain computational systems — digital computers, especially — also function. This assumption, however, is one that adherents of both camps might endorse, insofar as even normative approaches to AI presumably would need to satisfy this condition ‘at some (suitable) level’.

As though to disabuse those who might mistake the conception that they endorse for a normative one, Charniak and McDermott go so far as to assert that, “The ultimate goal of AI research (which we are very far from achieving) is to build a person, or, more humbly, an animal” [Charniak and McDermott (1985), p. 7]. Although their position may be extreme in this respect, much of the impetus for AI and cognitive science research along these lines arises from the symbol system hypothesis advanced by Alan Newell and Herbert Simon, according to which the necessary and sufficient conditions for general intelligence are those possessed by physical symbol systems, which are physical systems (or ‘causal systems’) that have the capacity to processes/manipulate/... sequences of marks/signs/... from a designated vocabulary [cf. especially Newell and Simon (1976), pp. 40–42].

This general approach, moreover, has been reinforced by the proposition that, when mental processes are viewed as computational, minds themselves can be viewed as special kinds of formal systems. John Haugeland (1981), (1985), for example, has gone further in suggesting that mental activity can be adequately portrayed as the behavior of an automated formal system, a position that leads him to the conjecture, “Why not suppose that people just are computers (and send philosophy packing)?” [Haugeland (1981), p. 5]. Indeed, the prospect of reducing the philosophy of mind to problems of