

rithms be devised. Although it may be too soon to say whether any existing models successfully capture how information processing is actually accomplished in nervous systems, the general approach has the right character in so many dimensions that it has to be taken seriously.

The breakthroughs in network modeling, together with new discoveries in neuroscience and psychology, suggest that it really is possible to understand the fundamental principles governing brain function and, thus, to understand the nature of representing and reasoning. It is also clear that finding solutions to these problems is an inescapably interdisciplinary task, requiring networks of researchers: neuroscientists, modelers, ethologists, psychologists, linguists, and philosophers. My hunch is that epistemology will never look the same.

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#### THE BOUNDARY BETWEEN PHILOSOPHY AND COGNITIVE SCIENCE\*

The main issue before us concerns the boundary between philosophy and empirical science. Patricia Smith Churchland and Alvin I. Goldman advocate an aggressive empiricist philosophy according to which many fundamental philosophical questions lie within the province of empirical science—specifically, cognitive psychology, physiology, and perhaps experimentally based computer science. The primary problem (not to say the only problem) with this aggressive empiricism concerns modality. Like the answers to questions in pure mathematics, the answers to basic philosophical questions are *necessary if true*. For example, if justified true belief is not knowledge, then necessarily justified true belief is not knowledge. Even if all and only cases of justified true belief were, in fact, cases of knowledge, that would not show that justified true belief is knowledge; for the mere possibility of a case of justified true belief that is not knowledge suffices to show that justified true belief is not knowledge.

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In the history of philosophy, knowledge of necessities has been thought to lie outside the province of empirical science in the following sense: if it is possible to know something to be necessary, it is possible, in principle, to know it to be necessary without the aid of empirical science; when it comes to knowledge of necessities, empirical science is never essential. In recent years, however, scientific essentialists (Saul Kripke, Hilary Putnam, and their followers) have given persuasive arguments that certain things can be known to be necessary only with the assistance of empirical science (for example, that water is H<sub>2</sub>O, that gold is the element with atomic number seventy-nine, and so forth). Is knowledge of philosophical necessities like this, too? Can scientific essentialism be generalized from philosophically uninteresting, naturalistic issues (such as the nature of water or gold) to basic philosophical issues? I will argue that this global generalization is doomed. The reason is that the only satisfactory account of scientifically grounded knowledge of naturalistic necessities (water, heat, etc.) presupposes a circumscribed form of rationalism. This circumscribed rationalism entails the reliability (perhaps after theoretical systematization or dialectical critique) of intuitions concerning the applicability of category and content concepts to hypothetical cases that are characterized exclusively in terms of category and content concepts. Most of the basic questions of philosophy, however, are put exclusively in terms of category and content concepts. These considerations imply a thesis of the *autonomy of philosophy*: for most philosophical questions, if it is possible to know the answers to these questions, it is, in principle, possible to know the answers to them without the aid of empirical science.

Accordingly, when Churchland seeks to learn what “knowledge and belief, reference, meaning, and truth, and reasoning, explaining, and learning” are, empirical sciences (empirical psychology, physiology, and computer modeling) are incidental, at best. Our concepts of these items are basic category and content concepts, so necessities involving these concepts are, if knowable at all, knowable without the aid of empirical science.

Similarly, when Goldman tries to understand unity and objectivity, empirical psychology can be incidental, at best; for the concepts of unity and objectivity are category concepts. As such, their analysis (what unity and objectivity are supposed to be) lies outside the province of empirical science. (I believe that the right analysis must be given in terms of a special kind of purely logical theory.) But how is one to decide which items are objective unities, for example, whether persons are and Goldman’s “shmersons” (if they exist) are not? We

must certainly consult our best overall theory, which will be partly empirical. Does this show that the question is empirical? Not at all. For independent of any particular empirical considerations, there are transcendental considerations showing that any acceptable comprehensive theory of the world must confer on certain items (for example, the beings who actually construct such theories) special objective status. Persons (but not shmersons) are like this.

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