Advances in Consciousness Research 4

Preface

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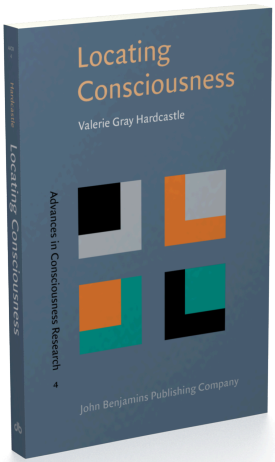

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Locating Consciousness
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Preface

In my (albeit limited) experience in these matters, I have discovered that there are two sorts of people engaged in the study of consciousness. There are those who are committed naturalists; they believe that consciousness is part of the natural world, just as kings and queens and sealing wax are. It is completely nonmysterious (though it is poorly understood). They have total and absolute faith that science will someday explain this as it has explained the other so-called mysteries of our age.

Other are not as convinced. They might believe that consciousness is part of the natural world, but surely it is completely mysterious. Thus far, science has had little to say about conscious experience because it has made absolutely no progress in explaining *why* we are conscious in the first place. Different folk draw different morals from this observation. Some conclude that a scientific theory of consciousness is well-nigh impossible; others believe that it is possible, but do not expect anything of value to be immediately forthcoming; still others remain confused and are not sure what to think.

I have also noticed that these two camps have had little to say to one another — their differences are deep and deeply entrenched. There are few useful conversations; there are even fewer converts. Nevertheless, they all can agree that consciousness presents us with a conundrum if we see the mind fundamentally as an information processing machine. For, if we understand the mind as a system that takes in bits of information via sensory transduction, transforms those bits according to some computational algorithm, and then outputs the transformed bits of information, presumably as some motor response, *consciousness disappears.* Consciousness has no impact on the structure of the input, the transformational algorithms, or the final form of the information.

Some conclude that insofar as consciousness plays no causal role in any mental processing, then the phenomena of consciousness have no place in theories about the mind. If we antecendently accept information-processing models of the mind, we relegate consciousness to a domain untouched — and maybe untouchable — by scientific inquiry.

However, by my lights, insofar as we want to maintain that we are sentient, simply ignoring the phenomena of consciousness is unacceptable. The mind is conscious. Somehow our mental processes give rise to this phenomenon. Moreover, I am a member of the naturalist camp. Hence, I hold that there is not any obvious *a priori* reason why consciousness cannot be studied and modeled scientifically.

Indeed, I believe absolutely and certainly that empirical investigation is the proper approach in explaining consciousness. What needs to be changed is our information processing approach to the mind. Changing the way we view the mind so that we give greater weight to the neurophysiological underpinnings opens the possibility that we can locate consciousness in the dynamical structure of the neural firing patterns. In this book, I examine what neuropsychology can tell philosophers about qualitative experience. And in proposing my own more "structural" theory of consciousness, I aim to remove the conundrum of consciousness from the cognitive sciences.

If you are interested in exploring what science tells us about conscious experience today, both with respect to developing an empirical theory and with respect to philosophical issues within the naturalist framework, I encourage you to read on. I am peddling two things here: a theoretical framework for understanding consciousness and a vision about how to understand the project in general. You can't buy one without the other; but beware: the vision isn't really for sale. You probably already have to buy into the basic tenets of materialism, mechanism, and naturalism before you can sincerely appreciate what follows.

And what follows are details. Naturalists are convinced that science can tell us something important about conscious experience. Well, what can it? And how does what we know answer the broader philosophical concerns? In particular, I focus on the three following questions and their relation to various skeptical challenges. (1) What are the appropriate properties of the mind and the brain to study in order to develop a theory of consciousness? (2) What informational role does consciousness play in our psychological life? (3) How does the

underlying neurophysiological structure of consciousness relate to higher-level information processing descriptions of consciousness?

By answering these queries, I generate naturalist responses to the more recent and popular philosophical arguments against the possibility of any scientific theory of consciousness by spelling out how much we in fact already know about the phenomena of consciousness and how this information should be integrated into a theory proper. In what follows I sketch philosophical landscapes and illustrate how naturalists do and should think about them, given the data.

I see two motifs running through this work. First, under the rubric of philosophy of mind, I examine how best to unite the information processing theories in psychology with hypotheses based on neural network research and anatomical and physiological data from neuroscience. More specifically, I use my analysis of the empirical issues to focus on particular theoretical and conceptual difficulties associated with our modern version of the mind/body problem. For example, the computer metaphor, so rampant in cognitive psychology, has fundamentally misled our analysis of mentality for it strips computational theories of their connection with underlying physical interactions. A truly interdisciplinary perspective opens the possibility that consciousness is best understood as a "structural" phenomenon relative to our higher level informational processing capacities.

Second, in a purely empirical framework, I sketch recent data concerning multiple memory systems, which I believe is the most promising avenue for advancing a scientific theory of consciousness. This framework reflects work done by others as well as experiments I have carried out myself. By studying the different functional properties of each memory system, we can begin to understand the type of causal network that underwrites consciousness. As we quantify the interactions of our memory systems, we move ever closer to understanding the properties of consciousness.

I intend this book to function as an extended example of interdisciplinary research. I support my philosophical and speculative arguments using data drawn from cognitive and developmental psychology, AI programming, linguistics, clinical neurology, neurophysiology, and neuropsychology. In turn, I try to develop a perspective that all these fields should be able to use when considering the phenomena of consciousness, or defending themselves against well-meaning but skeptical philosophers.