

This excerpt from

Metacognition.

Janet Metcalfe and Arthur P. Shimamura, editors.

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Foreword

For more than a hundred years cognitive psychologists, along with other students of the brain/mind, have been busy studying how people know things. The most conspicuous result that has emerged from these efforts is the growing awareness that the more we know about knowledge the more we know how little we know. Problems of cognition are complicated and seem to be becoming increasingly so. Part of the complexity turns out to reside in the fact — only recently “discovered” — that we can identify many more different kinds of knowledge, and many more different forms of knowing, than anyone ever suspected. The problem of organizing the extant evidence concerning kinds of knowledge into empirically valid classificatory schemes is going to occupy many good minds in the future. There exists an even more recent insight, however, which seems to be on its way of becoming a part of the *Zeitgeist*. This one concerns the realization that there is no direct correlation between kinds of knowledge and forms of knowing, between representation and process. What we regard as a particular kind of knowledge can be known in many ways, and a particular form of knowing may have as its object many different kinds of knowledge. A 5-year-old knows the grammar of the language she speaks in that she speaks it according to a complex set of rules, but she cannot verbally describe her knowledge in the same way as she can 10 years later. A college student can form the image of an apple as readily as she can form the image of a triangle, even though the two kinds of knowledge — concerning concrete objects and abstract ideas — have little in common. When the

reality of the dissociation between knowledge and knowing is acknowledged, a powerful impetus will exist for an intensive and systematic exploration of the manifold of relations between these two concepts and what they represent.

The research activity that has recently burgeoned under the general rubric of metacognition, a rich sample of which is assembled in the present volume, is one of several manifestations of the turmoil surrounding the issue of the relation between knowledge and knowing. The beginning of metacognition as a separate research topic, one that is perceived as somehow different from “plain” cognition, can be traced back to Hart’s Ph.D. thesis at Stanford in 1965 on feeling of knowing, even if the official appellation, by Wellman and Flavell, of the general category into which Hart’s work fitted came some 10 years later.

With the wisdom of hindsight, and the historian’s prerogative of interpreting the past in terms of the past’s future, it is possible to see the growth of the field of metacognition as an (unconscious?) rebellion against behavioral or behaviorist orientation of the then prevailing orientation in psychology. Although the information-processing paradigm was already well on its way in 1965, it had not brought much relief from behaviorism’s stranglehold on consciousness, the historical, true subject matter of psychology. The mental processes with which the newly emerging cognitive scientists began filling the “black box” were the observer’s abstractions rather than the individual’s conscious experiences. It was the study of the mind from the point of view of the “third” person, and in that sense did not differ greatly from the basic orienting attitudes of behaviorists.

Although Hart’s pioneering paradigm clearly served the purpose of capturing his subjects’ first-person awareness of categories of knowledge that could not be discriminated in terms of the standard behavioral performance, Hart himself did not evoke the concept of consciousness or awareness in his work. In the middle of the 1960s that was a wise and politic thing to do for a young investigator who wanted to publish in the establishment’s journals. But even without the banner carrying the big “C” word, Hart’s rebellion’s consequences were far-reaching. The present volume is only the latest to a long string of testimonials to its success.

What is a bit more puzzling is why most of the students of metacognition and metamemory today still use behaviorally safe expressions, such as memory “monitoring,” mnemonic “behavior,” memory “search,” tip-of-the tongue “states,” and tip-of-the-tongue and feeling-of-knowing “experience.” Do they use these expressions deliberately in order to avoid the big bad “C” word? Or do they take it for granted that when they refer to monitoring, and judgments, and experience, everyone understands that they are indeed talking about conscious monitoring, conscious judgments, conscious experience? But if so, and if it is true that consciousness is a necessary condition of metacognitive judgments and metacognitive experiences, why not claim explicitly that conscious awareness is one of the defining attributes of the domain of metacognition?

Some scientists today remain dubious about consciousness as a fit topic for scientific study, declaring it to be an epiphenomenon. They claim that consciousness cannot be operationally defined, or its existence cannot be objectively verified, or it cannot be measured, or it does not help us to predict anything, or some or all of the above. These critics have not paid attention to what is happening around them. The many interesting and reliable empirical facts about metacognition of the kind reported in this volume have gone a long way toward answering the old queries of the sceptics. Thus, is there any evidence that consciousness plays a critical rather than an epiphenomenal role in the workings of the brain/mind? Yes there is: Machines without consciousness, and animals whose consciousness is different from that of human beings, could not perform many of the tasks that human subjects in metacognitive experiments, and others of the same general kind, can and do perform. If in doubt, make a machine think creative but plausible thoughts about its own future. The ability of a human being to reflect on his or her conscious awareness of the world represents an evolved skill that serves important biological functions. Once we realize this fact it becomes worth our while to search for the biological utility of metacognition. Some investigators are indeed already asking pertinent questions.

Some other recent work in cognitive psychology and cognitive neuroscience of memory has revealed that people can make many complex judgments both consciously and nonconsciously. The behavioral outcome may be identical — the subject declares that a

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name belongs to a famous person, that A — AS — N represents the same thing as ASSASSIN, or that an event happened in a particular place at a particular time — but metacognitive judgments reveal clear differences in their underlying processes. When the facts of metacognition are added to these other recently discovered facts concerning phenomena of conscious awareness, the question must be raised as to whether the time has come to change the rules of our science. Things that are known to exist and to behave lawfully in the natural world — such as phenomena of consciousness and awareness — must be admissible as a legitimate objective of scientific study even if the standards first created at the time when Descartes was struggling with the problem of the localization of soul may not fit exactly.

Our own awareness of what, who, and where we are, and what we experience, is a fact of nature more certain than any observations we can make, or any measures we can take, of other existences, relations, and happenings beyond the reach of our immediate experience. A science of the brain/mind that does not capture or even acknowledge these basic facts, is out of touch with reality. One can ignore the scientific problem of consciousness only if one is deliberately willing to profess lack of interest in the most fascinating invention of evolution.

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