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Cover: Cells from all multicellular organisms contain so-called cell-death genes that program their own destruction under certain conditions. Several organisms — such as these microscopic roundworms that bear extra growths because of mutations in cell-death genes — are providing scientists with clues to cancer, autoimmune diseases, and AIDS. (Photo: Michael O. Hengartner and H. Robert Horvitz, Massachusetts Institute of Technology)

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Letters

Raising Cain over consciousness

"Consciousness Raising" (SN: 10/10/92, p.232) was, I believe, an attempt to update us on the state of cognitive science. However, the state of cognitive science remains a lot closer to alchemy than to chemistry.

The term "science" is used a little too loosely to give credibility to what is actually only philosophy. Meanwhile, behaviorism today studies the behaviors of cognition but is still misunderstood as being a theory of only simple, overt behaviors.

Brady J. Phelps
Assistant Professor of Psychology
South Dakota State University
Brookings, S.D.

The title of Dennett's book, *Consciousness Explained*, seems more than a little overreaching. It calls to mind psychiatrist Karl Menninger's rebuke three decades ago regarding

biologist Alfred Kinsey's famous volume, *Sexual Behavior in the Human Female* (1953).

Menninger noted that Kinsey's book should have been entitled *What Several Thousand Fairly Well-Educated American Women Told Me One Time*. He also went on to observe that many women had paid him (Menninger) considerable sums of money over long periods of time to tell him the truth about themselves, and they still didn't or couldn't.

In this light, Dennett's book would be better styled *Some Interesting Hypotheses Regarding Functions of the Mind and Brain in Reference to Certain Aspects of Human Consciousness*.

Glen Duncan
Napa, Calif

Dennett and Kihlstrom may both be correct: An "executive ego" exists, but not in the form of a contemporaneous Cartesian theater. Rather, it emerges in the immediate memory component of a feedback control loop.

Perhaps *all* activity is unconscious. Consciousness arises just afterward, as the unify-

ing recollection of "having just done." By emphasizing and strengthening short-term memory as a survival stratagem, natural selection coincidentally generated the illusion that consciousness is "present" rather than "just past." This is more than a rhetorical distinction, because memory's fading echoes of perception arise through a process fundamentally different from immediate perception.

Michael Jordan fakes left, spins right, and slam dunks over a reeling defender, all unconsciously. As he returns to the hardwood and turns upcourt, Jordan becomes conscious of his feat, as if catching the tail of the vanished present. This would also explain why, in Libet's study, a half-second delay follows a pain stimulus, whether administered to the hand or directly to the brain. The half-second is required for the pain sensation to be processed into the immediate memory, where it first becomes "conscious."

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Aha...



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I think, therefore I was. No wonder mind is so illusive!

Richard S. Platz
Blue Lake, Calif.

Dennett's pronouncements on the unacceptability of our experimental results and the conclusions we drew therefrom are presented as if they were scientifically based, when in fact they are nonexperimental inferences from his theory.

For example, in relation to our direct experimental evidence for a cerebral-neural delay in the production of a conscious sensory experience, the article states, "Libet's explanation proves inadequate, Dennett argues, because consciousness does not occur at an absolute time in a central brain location." These characterizations about no absolute time or central location are inferences from Dennett's theory, not demonstrated facts. Furthermore, our conclusion about neural delay for a conscious experience does not require that the process be confined to a central locus. The delay could just as well be a function of a globally distributed brain phenomenon; we do not specify which view of the locus is operative.

"... Libet charted self-reports that reflected volunteers' *inaccurate intuitions* that they had decided to flex a finger at a specific time, Dennett contends" (italics added). Dennett's contention is strictly a speculative inference from his multiple drafts theory, as the rest of that paragraph shows. Our subjects' reports were of their direct awareness of when they wanted to move; they were no more "intu-

itions" than is someone's report that he wanted to get up from a chair. Nor were the reports "inaccurate." The reported times showed a statistical standard error of ± 20 milliseconds (for an average 200 msec value); in a control experiment, with the timing of signals known only to the experimenter, subjects' reports were accurate to within 50 msec.

It would be nice if people checked with our original experimental results before treating statements like those of Dennett seriously.

Benjamin Libet
Professor of Physiology
University of California, San Francisco
San Francisco, Calif.

Your story reminds me dramatically of the Indian fable of the blind men who were given the task of describing an elephant. Each gave a different word picture and analogy, depending upon what part of the elephant he had investigated. The man inspecting the leg likened it to a tree, the man investigating the trunk likened it to a snake, and so on. They were all right as far as they went, but all failed to recognize the true character of the elephant.

If I could say anything to the individuals on whose comments you reported, it would be, Start listening and incorporating all the findings and then you will start to recognize the elephant: The disagreements all lie in the words and narrow focus used to describe your findings, not the findings themselves. At present, these researchers are failing to use the vast capacities of the very biologic organ they are studying, the brain.

Debbie Alexander
Bloomington, Minn.

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