way that even Chomsky wouldn't deny. Any propositional attitude can be thought about consciously. For example if the agent is asked (this seems the most natural reading of step 5), what Freud, Chomsky, and most cognitivists are denying is of course not that, but rather that the possession of an attitude must be introspectible. But put this way, Searle's claim seems awfully implausible—as starters, introspective skills seem to vary arbitrarily in the population (see e.g. Nisbett & Wilson 1977). For another, the attempt to do psychology under this constraint, the "introspectionist" psychology of a century ago, was a ludicrous failure. Is Searle really advising a return to Wundt? In any case, if we are to take Searle's dispositional claim seriously, we need to have some idea of the activating circumstances. The most we are told (steps 5, 6) is that they include the absence of lesions and repression since, at least in those cases, even Searle agrees that someone's attitudes could be unconscious. But then suppose these lesions and repression are genetically determined, and gradually spread in the population so that they become the normal condition of humankind: Wouldn't whatever explanations we now apply to these cases apply then to the whole population? And if this is possible, why shouldn't it be possible that we are in that evolutionary state right now? Indeed, one could take the work of Freud, and Chomsky to show just that: that we've evolved into systems that inherently suffer from "natural" lesions and repressions that render many attitudes inaccessible to introspection. It would be scientifically most peculiar if the explanatory power of Freud's or Chomsky's theories depended upon this not being so.

Quite apart, however, from whether consciousness is required or mere "faculties" of the "intentional" mind, there is the further problem of how it is supposed to be of any help. If there were no "objective" way to draw the above distinctions, I don't see how there could then be any "subjective" ways either. First-person stances and privileges are all very nice: I regularly enjoy them myself. But I don't see how they bring in the philosophical wash. How is introspection to tell me whether my introspected attitudes are literal or metaphorical, whether, for example, it is they that are causally responsible (recall sect. 5, para. 5) for my behavior? Are we supposed to know introspectively that epiphenomenalism is false? I don't.

Moreover, if there is no objective fact about whether I mean water or waterhood by "water," I don't see how beating my brains or picking a "subjective" fact out of any good. The question is: Just what is the fact on which I'm supposed to base such a privileged grip? That by "water" I mean water and by "waterhood" waterhood? Without any objective basis, this seems no better than thinking you know how tall you are by placing your hand on your head to prove it (Wittgenstein 1953, p. 279). If there is no objective fact describable in third-person terms, there seems to me nothing for me in the first-person to be right or wrong about, and so nothing for me to know (Searle seems to have provided finally the right target for the private language argument). In any case, Searle owes us an account of precisely what these further nonobjective, essentially "subjective" facts might be, and how they don't undermine the materialism that he otherwise seems to want to believe.6

NOTES
1. Let Searle reject this proposal as running afoul of his "Chinese Room," note that it is a proposal of a (propositional) representational theory of mind. Whether one thinks further that the causal processes involving representations are computational depends upon what one thinks of such "sociological phenomena" as the work of for example Turing, Simon, Fodor, and practically the whole of cognitive psychology. See Rey (1986) for a defense of these latter enterprises against the several "Room" fallacies.
3. He does suggest a kind of in-principle argument a little later, claiming that, even were there neural correlates of intentional states, "there is still an inference, and the specification of the neurophysiological in neurophysiological terms is no specification of the intentional" (step 3). Now, neural correlates may not be the best candidates for specifying intentions, but I don't see their inferential status as a problem. There may always be an inference between water and H₂O, but the latter is a perfectly good specification of the former.
4. This isn't to say that there aren't more difficult cases that Searle might have mentioned. For a more compelling case for Searle's claim, see Bealer's (1984) adaptation of Quine's (1960) rabbit/rabbits' argument to functionalist theories of mind. But Bealer's claim also suffers as negative conceivable.
5. Actually, it's not at all clear how introspectible facts about asp­ectual shape—which "cannot be constituted" by any objective facts (step 4.2)—could themselves be causally efficacious at all. I don't quite see how Searle thinks he's succeeded in extricating himself from his own contradiction or avoided classical epiphenomenalism.
6. I'm grateful to Michael Devitt and Ken Taylor for comments on earlier drafts of this commentary.

On being accessible to consciousness

David M. Rosenthal1

1 UF, University of Bielefeld, D-4800 Bielefeld 1, West Germany and City University of New York, Graduate School, New York, NY 10036-8099
Electronic mail: drog@cnr.suny.bitext

Searle believes that the idea of intentional states that are in principle inaccessible to consciousness is incoherent. "[I]t is incoherent, in the [rather special] sense that it cannot be made to cohere with what we already know to be the case"—presumably the Connection Principle and the premises that Searle believes lead to it. No explanation that posits such deep unconscious intentional states and processes (henceforth "deep explanations") can be true, he concludes, though some corresponding explanation that is not literally intentional may well be.

Searle may well be right that some deep explanations are inviting largely "because we lack hardware explanations of the auxin type." And when connections hold among states with content we probably infer too readily that the processes linking those states also have content. But Searle's examples are of questionable relevance. If, for example, the hardware circuitry that keeps eyes pointed in the same direction ran through suitable regions of the cortex, it would plainly be reasonable to suppose that mental processing plays some role.

In any case, Searle's master argument from the Connection Principle fails to show that deep explanations are never warranted. There are two main difficulties: the "in principle" clause, and the role in the argument of aspe­ctual shape.

Searle recognizes the need for clarity about what "in principle" means. An unconscious intentional state is, Searle claims, a "possible conscious thought or experience" and he explains "possible" here in terms of "capable": unconscious intentional states are states "capable of causing subjective conscious thoughts." So an unconscious intentional state is "in principle" (he occasionally says "intrinsically") accessible to consciousness if, and only if, it is "capable of causing the conscious experience."

But what does "capable" mean? In section 6, it emerges that a state can be thus capable even if there is some hardwired obstacle to the relevant causal linkage, and that obstacle involves "nothing pathological." This is reasonable; a state may have distinctive causal powers even if, because of some hardwired, nonpathological blockage, those powers cannot be realized. But why wouldn't this degree of inaccessibility be enough for even the most hard-core proponent of deep explanations? Unconscious intentional states might well, for example, have the relevant causal powers even though some hardware blockage puts those states, as Chomsky suggests (Note 1), "beyond the reach of conscious introspection." Even granting the Connection Principle, the difficulty for deep explanation does not follow.1
The Connection Principle, however, is itself dubious at best. All intentional states, conscious or not, have aspectual shape. Searle's argument is that unconscious intentional states consist wholly in neurophysiological phenomena, but their aspectual shape "cannot be constituted by such facts." Searle also claims, however, that "it is reasonably clear how... conscious thoughts and experiences" have aspectual shape. So the only way for unconscious intentional states to have aspectual shape is by having the power to cause states that, by virtue of being conscious, have aspectual shape directly and in the primary sense. Thus unconscious intentional states in effect have aspectual shape only indirectly.  

Why does Searle think aspectual shape is unproblematic in the case of conscious intentional states? Presumably because of its tie to agent's point of view: "A perceptual shape must matter to the agent. It is... from the agent's point of view that he can want water without wanting H2O." But what matters may not matter consciously. Conscious intentional states matter in part because of their effect on other intentional states, both conscious and unconscious; the same holds for unconscious intentional states. Thus my unconscious desire is for water but not H2O if I believe the two to be different and my desire would be satisfied by what I believe to be water but not what I believe to be H2O. All these beliefs may themselves be unconscious. In this case I unconsciously want something at water, and not as H2O; similarly for other unconscious intentional states. The causal connections my unconscious intentional states have to other intentional states, which may themselves not be conscious, manifests their aspectual shape and how it matters to me. By the same token, an agent's point of view need not be wholly conscious; one's unconscious beliefs and desires partially define one's point of view. Thus the tie between aspectual shape and viewpoint does not guarantee a connection between aspectual shape and consciousness.

Searle would respond that all this makes no sense unless the relevant unconscious states can produce conscious states with the relevant aspectual shape. But why? One's conscious first-person perspective doubtless reveals the aspectual shape of one's intentional states, but that hardly shows that aspectual shape cannot exist unconsciously. Nor does consciousness in any way help explain aspectual shape. Differences in aspectual shape are differences in how something is represented, so to effect an aspectual shape we must have an aspectual capacity. Differences in aspectual shape also emerge with speech acts; the reason speech acts can be about water but not about H2O is because of the words they use. Searle may think this kind of explanation is unavailable for intentional states because such states have no medium corresponding to the words of speech acts. But he also concedes that "the mental simply is neurophysiological at a higher level" (Note 4); as he puts it elsewhere, intentional states have physical "forms of realization" (Searle 1983, p. 15). So neurophysiological differences can help explain differences in the aspectual shape of intentional states in just the way that different words do for speech acts.

Searle insists that neurophysiological differences cannot make for differences in aspectual shape. A certain ambiguity in the term "height" keeps Searle from this way of putting it: "No set of neurophysiological facts under neurophysiological descriptions constitutes aspectual facts." This is undeniable so, but only because facts are relative to how we describe things. Describing things neurophysiologically is, of course, different from describing them in terms of aspectual shape. But "the mental simply is the neurophysiological at a higher level" (Note 4), So, even though we cannot describe aspectual shape in neurophysiological terms; aspectual shape is still a property of neurophysiological states. There is thus no reason why those neurophysiological states that are unconscious intentional states cannot have aspectual shape. Searle cannot invoke here the connection between aspectual shape and consciousness, since that very connection is at issue. So the neurophysiological character of unconscious states does not prevent them from having aspectual shape in their own right.

Moreover, if the mental is simply the neurophysiological "at a higher level," even conscious intentional states are neurophysiological states. Since consciousness itself is a property of neurophysiological states, why can't aspectual shape be, as well? Again, it begs the question to appeal here to the alleged tie between consciousness and aspectual shape.

Searle argues that unconscious intentional states are purely neurophysiological by considering the intentional states of unconscious people. This strategy conceals an important distinction. Unconscious intentional states also occur when we are awake, and thus conscious. Despite connections between them, what it is for a state to be conscious is distinct from what it is for a creature to be conscious.

Searle assumes that no facts other than neurophysiological facts or the fact of consciousness could explain aspectual shape and neurophysiological facts plainly cannot do so. If so, we cannot understand intentionality without understanding what it is for an intentional state to be conscious. This arguably makes it more difficult, and perhaps impossible, to explain such consciousness; intentionality is plainly far harder to understand if it is essentially conscious. In the absence of more compelling argument, therefore, we should reject the tie Searle hopes to forge between aspectual shape and consciousness.

NOTES
1. Nor is it wholly obvious that cognitive science requires deep explanations. In the quoted passage Chomsky himself hardly seems wedded to deep explanations: The postulated states "may be... even beyond the reach of conscious introspection" (my emphasis). Shallow unconscious intentional states that are for practical purposes inaccessible to consciousness would presumably suffice for most or all theoretical purposes in cognitive science.
2. Indeed, it is unclear why Searle does not conclude that unconscious states, though accessible to consciousness, have merely as-if aspectual shape, and thus only as-if intentionality.
3. Searle's views about unconscious intentionality are reminiscent of his claims about intrinsic and derived intentionality. The intentionality of speech is "derived," he maintains, in that "the direction of logical analysis is to explain language in terms of [the] Intentionality of [the] mental" (Searle 1983, p. 5). Similarly, he now urges that we can understand unconscious intentionality only in terms of conscious intentionality.
5. Searle's views about unconscious intentionality are reminiscent of his claims about intrinsic and derived intentionality. The intentionality of speech is "derived," he maintains, in that "the direction of logical analysis is to explain language in terms of [the] Intentionality of [the] mental" (Searle 1983, p. 5). Similarly, he now urges that we can understand unconscious intentionality only in terms of conscious intentionality.
6. See (Rosenthal 1985, 1990) on this point, and also for how consciousness can be explained if intentionality is independent of consciousness.

When functions are causes

Jonathan Schull
Hayward College, Havertown, PA 19041
Electronic mail: jachull@havford.bitnet

I think Searle is right in calling attention to the tacit but unacknowledged question of consciousness in cognitive science and the need for a "Darwinian" revolution in the explanation of mind-body relations. He gets the significance of Darwinism wrong, however, conflating intentionality with regularity and rule-following and intrinsic intentionality with subjective consciousness. When these errors are corrected, the implications of Searle's interesting discussion are hardly what he supposes.
Searle, J. R. Consciousness, explanatory inversion, and cognitive science 585

Open Peer Commentary
Block, N. Consciousness and accessibility 596
Bridgeman, B. Intention itself will disappear when its mechanisms are known 598
Carlson, B. A. Conscious mental episodes and skill acquisition 599
Chomsky, N. Accessibility "in principle" 600
Clark, A. Aspects and algorithms 601
Czyzewksa, M., Hill, T. & Lewicki, P. The ability versus intentionality aspects of unconscious mental processes 602
Drescher, B. E. & Hornstein, N. Language and the deep unconscious mind: Aspectualities of the theory of syntax 602
Dreyfus, H. L. Searle's Freudian slip 603
Freeman, W. J. Consciousness as physiological self-organizing process 604
Freidin, R. Grammar and consciousness 605
Glymour, C. Unconscious mental processes 606
Harman, G. Intentionality: Some distinctions 607
Higginbotham, J. Searle's vision of psychology 608
Hobbs, J. R. Matter, levels, and consciousness 610
Hodgkin, D. & Houston, A. I. "Consciousness" is the name of a nonentity 611
Holender, D. On doing research on consciousness without being aware of it 612
Kull, J. C. Is Searle conscious? 614
Limer, J. What's it like to be a guthman? 614
Lloyd, D. Loose connections: Four problems in Searle's argument for the "Connection Principle" 615

Penrose, R. Précis of The Emperor's New Mind: Concerning computers, minds, and the laws of physics 643

Open Peer Commentary
Boodos, C. On "seeing" the truth of the Godel sentence 655
Boyle, F. Algorithms and physical laws 656
Breuel, T. M. AI and the Turing model of computation 657
Butterfield, J. Lucas revived? An undefended flank 658
Chalmers, D. J. Computing the thinkable 658
Davis, M. Is mathematical insight algorithmic? 659
Dennett, D. C. Betting your life on an algorithm 660
Doyle, J. Perceptive questions about computation and cognition 661
Eagleson, R. Computations over abstract categories of representation 661
Eccles, J. C. Physics of brain-mind interaction 662
Garnham, A. Don't ask Plato about the emperor's problem 664
Gigerenzer, G. Strong AI and the problem of "second-order" algorithms 663
Gilden D. L. & Lappin, J. S. Where is the material of the emperor's mind? 665
Glymour, C. & Kelly, K. Why you'll never know whether Roger Penrose is a computer 666
Higginbotham, J. Penrose's Platonism 667
Hodgkin, D. & Houston, A. I. Selecting for the coin in consciousness 668
Johnson, J. L., Ettinger, R. H. & Hubbard, T. L. A long time ago in a computing lab far, far away . . . 670
Kentridge, R. W. Parallelism and patterns of thought 670
Matthews, R. J. Does cognitive science need "real" intentionality? 672
Lutz, R. Quantum AI 672
MacLennan, B. The discomforts of dualism 673
Madsen, M. S. Uncertainty about quantum mechanics 674
Manaster-Ramer, A., Savitch, W. J. & Zadrozny, W. Godel redux 675
McDermott, D. Computation and consciousness 676
Mortensen, C. The powers of machines and minds 678
Niall, K. K. Steadfast intentions 679
Perlis, D. The emperor's old hat 680
Roerper, T. Systematic, unconscious thought is the place to anchor quantum mechanics in the mind 681
Roskies, A. Seeing truth or just seeming true? 682
Smithers, T. The pretender's new clothes 683
Stanovich, K. E. And then a miracle happens . . . 684
Taylor, M. M. The thinker dreams of being an emperor 685
Tsotsos, J. K. Exactly which emperor is Penrose talking about? 686
Varela, F. J. Between Turing and quantum mechanics there is body to be found 687
Waltz, D. & Pustejovsky, J. Penrose's grand unified mystery 688
Wilensky, R. Computability, consciousness, and algorithms 690
Zykow, J. M. Minds beyond brains and algorithms 691

Author's Response
Penrose, R. The nonalgorithmic mind 692