

but, as we will show, some theorists (mis-)understand it by tacitly reintroducing the unnecessary "isomorphism" in a dimly imagined subsequent translation or "projection" in consciousness.

5. Cf. Pylyshyn 1979: "No one . . . is disposed to speak *literally* of such physical properties of a mental event as its color, size, mass, and so on – though we *do* speak of them as *representing* (or having the experiential content of) such properties. For instance, no one would not properly say of a thought (or image) that it was large or red, but only that it was a thought *about* something large or red (or that it was an image *of* something large or red). . . . It ought to strike one as curious, therefore, that we speak so freely of the *duration* of a mental event."

6. P. S. Churchland (1981a, p. 172) notes a difference between "masking in the usual sense" and "blinking in short term memory," which perhaps is an allusion to these two possibilities, but does not consider how one might distinguish between them.

7. Consider the medio-temporal region of cortex (MT), which responds to motion (and apparent motion). Suppose then that some activity in MT is the brain's concluding that there was intervening motion. There is no further question, on the Multiple Drafts model, of whether this is a pre-experiential or post-experiential conclusion. It would be a mistake to ask, in other words, whether this activity in MT was a "reaction to a conscious experience" (by the Orwellian historian) as opposed to a "decision to represent motion" (by the Stalinesque editor).

8. See also his dismissal of MacKay's suggestion of a more moderate reading (Libet 1981, p. 195; 1985b, p. 568).

9. Libet's final summation in 1981, on the other hand, was inconclusive: "My own view . . . has been that the temporal discrepancy creates relative difficulties for identity theory, but that these are not insurmountable" (p. 196). Presumably they would be undeniably insurmountable on the backwards *projection* interpretation, and Libet later (1985b, p. 569) describes these difficulties in a way that seems to require the milder reading: "Although the delay-and-antedating hypothesis does not separate the actual time of the experience from its time of neuronal production, it does eliminate the necessity for simultaneity between the *subjective timing* of the experience and the actual clock-time of the experience." Perhaps Eccles's enthusiastic support for a radical, dualistic interpretation of the findings has misdirected the attention of Libet (and his critics) from the mild thesis he sometimes defends.

10. In an earlier paper, Libet conceded the possibility of Orwellian processes and supposed there might be a significant difference between unconscious mental events and conscious-but-ephemeral mental events: "There may well be an immediate but ephemeral kind of experience of awareness which is not retained for recall at conscious levels of experience. If such experiences exist, however, their content would have direct significance only in later unconscious mental processes, although, like other unconscious experiences, they might play an indirect role in later conscious ones" (1965, p. 78).

11. Harnad (1989) sees an insoluble problem of measurement, but denies our contention that there is no fact of the matter: "Introspection can only tell us when an event *seemed* to occur, or which of two events *seemed* to occur first. There is no independent way of confirming that the real timing was indeed as it seemed. Incommensurability is a methodological problem, not a metaphysical one." So Harnad asserts what we deny: that among the real timings of events in the brain is a "real timing" of events *in consciousness*.

12. In a later response to a similar suggestion of Hoffman and Kravitz (1987) Libet asks the rhetorical question, "Are we to accept the primary evidence of the subjects' introspective report (as I do), or are we going to insist that the subject had a conscious experience which he himself does not report and would even deny having had?" (1987, p. 784). This is another expression of Libet's a priori preference for a Stalinesque position.

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The where and when of what?

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Dennett & Kinsbourne (D & K) set out to replace what they take to be a bad picture of consciousness, "Cartesian materialism," with one they prefer, their "Multiple Drafts" model. Once made explicit, they maintain, Cartesian materialism is an obvious mistake (sect. 1.1., para. 10). Nevertheless it is hard to escape its grip, they claim; its imagery continues to infect much current thought about consciousness. In this commentary I shall not discuss D & K's arguments against Cartesian materialism in any detail. Instead, I shall argue that the most charitable reading of their critique commits them to the view that consciousness *does not exist*—to *eliminativism* about consciousness. Although eliminativism follows from their central claims, other passages suggest that they believe consciousness *does* exist. Consequently, their position on the ontological status of consciousness needs clarification.

Cartesian materialism is the view that remains when Cartesian dualism is rejected but "the associated imagery of a central (but material) theater where 'it all comes together'" is retained (sect. 1.1, para. 8). Although Cartesian materialism includes the questionable view that there is a single place in the brain where all conscious experiences occur, it also includes the more plausible and widely held view that conscious states, processes, and so forth, are *functionally characterizable* (sect. 1.1, para. 10; sect. 2.2, para. 1). According to functionalism, token brain states or processes are conscious if and only if they bear appropriate causal relations to other token states and processes (and inputs and outputs). Consequently, on functionalist theories there need be no single place in the brain that subserves only consciousness, let alone a single place where all consciousness occurs. Each experience must simply occur somewhere or other.

In arguing against Cartesian materialism, D & K set out to show that there are no facts about exactly when token experiences happen (note 12), for example, when they begin or end. Settling "on some moment of processing in the brain as the moment of consciousness," they write, "has to be arbitrary" (sect. 2.2, para. 21). There is no moment of absolute time of an experience (sect. 3.1, para. 8; sect. 3.2, para. 8). From the claims expressed in these passages, and others like them, it is meant to follow that Cartesian materialism is false. The idea, presumably, is that if there is a place in the brain where a given experience occurs, there is necessarily some time when it occurs also. But there is no such time and consequently no such place.

Putting aside the question of whether D & K have argued soundly for the claims expressed in the passages cited above, it is worth considering how those claims are to be best understood. I can think of three ways of interpreting their statements. The first takes them as straightforwardly denying that conscious experiences are temporally located, that they begin, persist for some interval, and end. Clearly this interpretation leads directly to eliminativism, given materialistic assumptions. For

every physical state, event, process, and so on, is temporally located in this sense. If there exist conscious states and processes, therefore, they are as well.

Perhaps, however, D & K's picture is a more subtle one. What they seem to be critical of is the notion that experiences have "exact" or "absolute" temporal locations, that they have beginnings or endings that can be fixed upon with "precision." Perhaps, then, their idea is that while conscious experiences are temporally located in the sense in which everything is, the temporal boundaries of conscious experiences are *vague*. Thus, if one wished to state precisely (e.g., in milliseconds) when an experience began or ended, one would have to choose arbitrarily from among equally good alternatives, there being no fact of the matter about which choice is correct. The trouble with this interpretation, however, is that it is trivially true, since *everything* has vague temporal boundaries relative to some sufficiently fine-grained scale or other. Consider, for example, a scale of microseconds (one millionth of a second), and everyday events like a sneeze, the running of an engine, or an action potential in a cortical cell. Fixing the beginnings or endings of any of these events in microseconds would demand arbitrary choices from among thousands of alternatives. The temporal boundaries not only of experiences, therefore, but of every neurophysiological state or event are vague relative to some temporal scale. (Analogous points hold for spatial boundaries.) Consequently, merely asserting that the temporal boundaries of experiences are vague amounts to a truism, and has no bearing on Cartesian materialism.

A third way of reading the above passages is to understand them as claiming that conscious experiences are temporally located, but the time scale appropriate for the measurement of neurophysiological events (e.g., milliseconds) is too fine-grained to determine nonarbitrary temporal boundaries for experiences. This claim is not trivial since it implies that conscious experiences cannot be identified with functional states or processes (assuming such states or processes are realized by neurophysiological states or processes). The basic idea underlying this interpretation, then, is that the temporal boundaries of conscious experiences are "bigger and fuzzier" than the boundaries that carve up functional states and processes in the brain. But now there is a difficulty: Conscious experiences have no role in the functional organization of the brain. Hence they are not causally related to any states or processes that *are* functionally characterizable. (If they were they would be functional states or processes themselves.) It follows that conscious experiences cannot be introspected and reported on, they cannot be caused by sensory input, they cannot play a role in causing behavior and thought, and so on. Indeed it is difficult to see how one could even *think* about one's own conscious experiences, if one's thoughts were causally unconnected to those experiences. It would seem, therefore, that this third interpretation reduces to absurdity.

It appears that the only way D & K's remarks on the temporal properties of experiences can be understood as expressing an intelligible and substantive claim is by interpreting them in such a way that eliminativism about consciousness is entailed. The two alternative interpretations that seem possible are either trivial or incoherent. The trouble with taking D & K as advocating eliminativism, however, is that nowhere do they explicitly endorse eliminativism. On the contrary, their target article contains numerous passages that imply that they think consciousness does exist; for instance, their last sentence: "The temporal sequence in consciousness is . . . purely a matter of the content represented, not the timing of the representing." (conclusion, para. 4). Thus if Dennett & Kinsbourne believe consciousness exists, they must provide an interpretation of their remarks on the temporal properties of experience that is distinct from the three I have discussed. If they do not, the passages suggesting they do must be clarified.

Throwing the conscious baby out with the Cartesian bath water

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Ms. Molly Bloom drifts off to sleep, consciously thinking these last thoughts ". . . all perfume yes and his heart was going like mad and yes I said yes I will Yes." When Ms. Bloom trades consciousness for sleep, she is trading away a single, unified narrative for none. This is what Joyce believed, this is what we believe, but this isn't what Dennett & Kinsbourne (D & K) believe. Instead, D & K believe that there is no unified stream of consciousness, no place (even functionally speaking, see sect. 1.1, para. 8) where "it all comes together." They want to replace the notion of consciousness as a master discriminator with braided streams of consciousness (to use a geological metaphor, the only one that hasn't been used yet). Instead of a single narrative, they want a "skein of narratives."

D & K have developed their view of consciousness, called the "multiple drafts model," in order to avoid Cartesian materialism and its associated view of consciousness: the Cartesian Theater model. There are several things we like about this target article. We applaud D & K's vigilance against Cartesianism (this pernicious doctrine has more lives than a cat; we tolerate even its mild forms to our detriment); we agree that there is no one place in the brain where consciousness occurs, and we do think that their clever Orwellian-Stalinesque argument shows that there is an unsolvable *descriptive* problem in the study of consciousness. Furthermore, the multiple processing and time-stamping aspects of their multiple drafts model are important additions to cognitive science's growing understanding of consciousness. But we think that they have thrown the baby out with the bath water: They seem to have rejected the essential phenomenology of consciousness in an attempt to avoid dualism and implausible neurophysiology. At least, this shall be our plaint.

D & K reject two different versions of the Cartesian Theater model: an anatomical version and a functional version. The anatomical version is the materialistic cousin of Descartes' original dualism. Descartes thought the pineal gland was the gateway to the conscious mind. Rejecting Descartes' dualism but keeping the anatomical sentiments, one might hypothesize that the pineal gland is the seat of consciousness; it is where consciousness takes place. But, as we learn from the neuroanatomists, neither in the pineal gland nor probably anywhere else in the brain is the seat of consciousness. Consciousness, as D & K note, is distributed. However, they think that rejecting the anatomical version of the Cartesian Theater requires rejecting the functional version as well (sect. 1.1, para. 8). This is a mistake. There could well be a functionally defined locus of consciousness that is both physically distributed and operates at different levels and times. One can believe as they do that the subjective temporal properties of events are *not* determined by the objective temporal properties of events anywhere in the brain and yet still believe that "it all comes together somewhere – functionally speaking." Put another way, one can believe that contents are temporally stamped – that they carry their temporal representations around with them – without having to give up the notion that consciousness is a single unified narrative.

There is more to this point than mere logic. Phenomenologically, it certainly seems that consciousness is unified and that the stream of consciousness is a single narrative (it's not always coherent, but it is a single narrative: Ms. Bloom's nocturnal thoughts are the result of *subconscious* competing and parallel processes). We will need much more than what we've been