

day out. One of Wegner's own examples illustrates the *initiation of movement* part of the will to move. The amputee who is conscious of moving nonexistent toes is obviously not relying on peripheral sensations. She reports mentally doing what, in someone with toes, accurately governs their movements. By abnormally removing the peripheral component of this process, nature has isolated Hume's "*impression we feel and are conscious of, when we knowingly give rise to any new motion of our body*" (Hume 1739/1888, p. 399, quoted in sect. 1.1.1 of the target article, emphasis in original). The associated movements are gone, but the experience of will in this trivial sense of connecting mind and body remains, and there is no reason to believe that the subject's consciousness of its operation *per se* is inaccurate, despite the illusory downstream effects. This consciousness is different in kind from mere association; if a tree branch actually moved without my proprioception of will every time I thought of its moving, it would not feel as if I suddenly had a previously unrecognized muscle, but instead would probably give me the eerie sensation of having my mind read (see Gray Walter's experiment in Dennett 2003a, p. 240).

*Maintenance of resolution* is more important. It is where both strength and freedom of will reside, and our beliefs about it have practical effects on self- and social control. Defending direct perception of this resolution is hard because, although observers have agreed on many functional properties – the effects of practice, of reference to principles, of single lapses, and so forth (Ainslie 2001, pp. 119–20) – they have not agreed on a way of describing the thing itself. I have argued that resolution is not a thing, or unitary sensation, at all, but an intertemporal process analogous to bargaining, and that it is just as directly reportable as the events of interpersonal bargaining are (Ainslie 2001, pp. 90–104). Briefly: The way we make our intentions consistent is to perceive our current decision as a test case for how we will decide similar choices generally, so that our expected reward from consistent intention is staked on "cooperating" with our future selves and is sharply reduced if we "defect" to an impulsive alternative. Although people conceive the mechanics of this contingency variously, under the rubrics of morality, principle, personal intention, and even divine help, we universally experience a big stake as resolve and a lapse as a loss of part of this stake, engendering guilt. The proprioception here is the recursive self-monitoring process, the testing of our will, which is not prominent in behaviors we are confident of executing but is glaringly evident when we resolve to resist a favorite vice or to dive into a cold lake. The mind's compass to which Wegner refers (sect. 3) is not the same thing as our will but, rather, is a component of it, as integral as the thermometer is to a thermostat. Furthermore, the sensitive dependence of our behavior on our compass readings – the feedback prospective outcome of tentative choices – is enough to account for the experience of freedom, our sense that we are participating in the outcome but that even we cannot be sure of its final form in advance.

Is there an illusion, then? A penetrating chapter on "virtual agency" (not in the *Précis*) suggests a more defensible illusion, involving a *third part* of the experience of will – neither the part that connects mind to action in little dabs nor the long-lasting property that manages resolve, but the part that connects our actions with our idea of our selves. The evidence of this chapter indicates that it is not our sense of action that is illusory (I like "virtual" better), but, rather, our sense of self. Wegner argues for possibilities that I have also advocated: that a person interprets her own actions in the same way she interprets others' – *empathically*, as I put it – so that the ownership of both kinds of action and the notion of ownership itself are open to construction, and facts without major practical implications are chosen for belief on the basis of how regularly they occasion emotion (Ainslie 1995; 2001, pp. 175–89). Wegner says that the conscious will departs when people feel possessed or depersonalized; that they have lost their empathic sense of self, their "emotion of authorship," leading them to feel that they do not own their activities. Nevertheless, these people continue to perform consciously the other two functions of will: initiating actions and maintaining resolutions. The ownership compo-

nent could indeed be called illusory or virtual or emotional, but it is not essential for the functioning of conscious will.

Most of the examples of failed consciousness in the book depend on either a split of consciousness or activity below a threshold of consciousness. The splits remove the reporting self's "emotion" of agency by physically (split brain; alien hand) or motivationally (dissociation and probably hypnosis) blocking this partial self's awareness of what are often fully formed initiations and resolutions. Subthreshold phenomena include mannerisms (which can be shaped even in sleep, Granda & Hammack 1961); small drifts of activity that can be summed into Ouija-like phenomena; and the preliminary brain processes made tangible by recent advances in neurophysiology and imaging. We can now see a decision in its early stages, perhaps when it is merely being mooted and not yet a decision – the "mirror neurons" excited by watching somebody else's movements do not always, or even usually, result in your own actual movement (Iacoboni et al. 1999); perhaps Libet's electrodes (1999) are also registering the first idea of a behavior and not the decision to go forward with it, a possibility that would reduce the significance of the observed temporal offset from the conscious moment of choice. With powerful cranial magnets we can even skip the perceptual phase of suggestion and predispose directly to one alternative over another (Brasil-Neto et al. 1992), but the capacity to manipulate an early stage of will does not argue against its existence. Science sees submerged parts of an iceberg that have never been seen before, but as yet nothing that renders the conscious parts inaccurate.

The wealth of material in this book – brain imaging, electrophysiology, social experiments, anthropological observations, and thought experiments – demonstrates that the will is not a unitary organ with no discernable components and an either/or outcome structure, the black box traditionally favored by philosophers (e.g., Pap 1961, p. 213). It is divisible into separate operations, some of which can be measured as lasting finite, very short times. These elements may relate to one another in a variety of ways, including, as I have suggested, in recursive feedback systems, while being experienced only as summation phenomena – an experience that is incomplete, as Wegner demonstrates, but normally valid as far as it goes. What used to be called conation turns out to be a field as big as cognition. This book goes a long way toward defining its tasks.

#### NOTE

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## The experience of will: Affective or cognitive?

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**Abstract:** Wegner vacillates between considering the experience of will as a directly-sensed feeling and as a cognitive construct. Most of his book is devoted to examples of erroneous cognition. The brain basis of will as an immediately-sensed emotion receives minimal attention.

Wegner sometimes considers the experience of will to be "a feeling" (Wegner 2002, p. 3), directly sensed, "not unlike happiness or sadness" (p. 326). However, he more often considers it a "fabrication" (p. 3), a cognitive construct combining what he calls priority, consistency, and exclusivity (p. 69). For some of us, the idea that will is a directly-sensed feeling suggests a search for the neural correlates of this feeling (Bogen 1997). Wegner briefly refers to stimulation of the exposed cortex by Penfield and the well-confirmed result that the movements elicited are disclaimed by the patients. He contrasts this with a single case of Delgado wherein

stimulation was followed by varying explanations sounding like confabulations. From this meager observation Wegner concludes that the experience of will “may not be very firmly connected to the processes that produce action.” That is about the extent of his discussion of brain except for three pages (182–84) on the split-brain, to which I will return; the remaining 95% of the book concerns psychological observations and arguments.

Wegner does take note of Libet’s classic experiments with the readiness potential (Libet et al. 1983; cf. Libet 2003). It is quite clear that an action plan develops for some 300 milliseconds before the subject (S) is aware of the development, leaving 150 msec for the S to either abort the process or let it run to completion. At issue is not whether S’s choice is determined (either materialistically or theologically); what concerns us here is whether S’s choice affects the outcome. Wegner argues that 150 msec is not enough time for a choice to have an effect and that the experience of will “might just be a loose end” (p. 55). Wegner seems to consider consciousness, including will, to be epiphenomenal; for example, “the real causal mechanisms underlying behavior are never present in consciousness” (p. 97). Epiphenomenality is quite explicit in Figure 3.1 (p. 68 in the book), which shows that the train of causation of an action develops in parallel to the train of causation for awareness of the action; there is no contact between the two paths. This figure allows for no awareness of the developing action plan, contra Libet, and therefore no possibility of awareness affecting the outcome. Note that this figure is intended to describe the normal process, not the result of a lesion-induced disconnection as occurs with the alien hand (see below).

As disturbing as Wegner’s dismissal of will in the Libet experiment and his equal weighting of Penfield’s large data corpus with Delgado’s single case, are his muddling references to the split brain. He describes Sperry’s (1961) review as showing that the split-brain animal has “a capacity to do something with one side of the body but not the other” (p. 182). *Any* normal animal can do that! This is a remarkable bowdlerizing of Sperry’s view of the duality of intention in the split-brain. Regarding humans, Sperry (1974) wrote: “The minor hemisphere [is] thinking, remembering, reasoning, *willing*, and emoting, all at a characteristically human level” (emphasis added).

Regarding the split-brain human, Wegner looks for support in Gazzaniga’s description of an “interpreter” in the left hemisphere that rationalizes right hemisphere actions based on information unavailable to the left hemisphere. Wegner asserts that, “This theory locates the invention of intention on the left side of the brain.” Wegner’s partisanship leads him to misinterpret Gazzaniga, who long ago (Gazzaniga 1967) noted the disconnected right hemisphere’s capacity for independent action. Although Gazzaniga has described the disconnected human right hemisphere as having less cognitive ability than a chimpanzee or even a monkey (Nass & Gazzaniga 1987), he nonetheless has consistently described its capacity for independent action (Baynes et al. 1997; Gazzaniga 1995). A capacity for intention in each hemisphere has long been recognized by split-brain animal experimenters of many nationalities and ideologies (Bogen 1977), as well as current human researchers (Zaidel & Iacoboni 2003).

Wegner’s misunderstanding of the split brain is reflected in his discussion of the alien hand (AH). This term was introduced (Bogen 1979) specifically to describe the phenomenon of disclaimed but well-coordinated, apparently purposeful behavior of the left hand in right-handed split-brain patients. Thus, the AH has been ascribed to hemispheric independence due to callosal injury. The AH has also been attributed to an intrahemispheric frontal lesion disconnecting speech generation from the cortex producing the action. (A well-informed, brief word on the AH is an editorial by Goldberg [2000].)

That there is a *reality*, significantly ordered although often random, and that we can come progressively, bit by bit, to comprehend that order are basic assumptions not only of science. Much of life is our attempt to determine what is *true* or *real*. A crucial aspect of this search for truth is a better understanding of our own

behavior. Wegner has amassed a wealth of examples to show how easily our cognizing can be misled. But it does not follow that our direct experiences of will are typically illusory. Indeed, Wegner ultimately reverts in his final chapter to considering will as an emotion and he allows as how “our experiences of will . . . often do correspond correctly with . . . the actual causal connection between our thought and action” (p. 327).

## Calling in the Cartesian loans

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**Abstract:** Wegner’s tactic of describing the conscious mind as if it inhabited a Cartesian Theater in the brain is a stopgap solution that needs to be redeemed by paying off these loans of comprehension. Just how does Wegner propose to recast his points?

Three quotations from Wegner’s (2002) book, each not just defensible but, I think, importantly insightful, take out Cartesian loans that are now overdue.

“We can’t possibly know (let alone keep track of) the tremendous number of mechanical influences on our behavior because we inhabit an extraordinarily complicated machine” (p. 27). These machines “we inhabit” simplify things for our benefit. Who or what is this “we” that inhabits the brain? A Cartesian ghost in the machine? Surely not, in spite of first appearances.

“Conscious will is particularly useful, then, as a guide to ourselves” (p. 328). Again, who or what uses this handy guide? Does one part of the brain use another part? Is it as simple as that?

“Illusory or not, conscious will is the person’s guide to his or her own moral responsibility for action” (p. 341). My body is causally responsible for whatever effects emanate from it, whether it is falling down a flight of stairs, or pulling the trigger of a gun, but I, the person “inhabiting” this body, am morally responsible only for my actions. Again, who is this person and what is he doing in my body?

I have defended Wegner’s tactic of temporarily indulging in these ways of speaking, and sketched a way for him to recast his points without relying on the ominous image of a Cartesian Theater in which the Self sits as Witness and Decision-Maker (Dennett 2003a; 2003b; 2003c). But I would like to see how he himself proposes to pay off these comprehension-loans, since he may have some other tricks up his sleeve.

## We believe in freedom of the will so that we can learn

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**Abstract:** The central theoretical issue of Wegner’s book is: *Why do we have the illusion of conscious will?* I suggest that learning requires belief in the autonomy of action.

*You should believe in freedom of the will because if you have it you’re right, and if you don’t have it you couldn’t have done otherwise anyway.*

—Sam Buss (Lecture at University of California, San Diego, 2000)

Wegner’s (2002) fascinating book argues that conscious will is like the existence of God: most everyone believes it most of the time, but it isn’t so. (The simile is mine, not Wegner’s.) Hence, what I take to be the central theoretical issue of the book: *Why do we*