there is for us to doubt the reality of the external world that we perceive around us.[5]

Wegner fails to realize that we are not forced to interpret our experience of agency in just one way. We can make sense of our experience in many different ways, just as we can perceive events in the external world in different ways, depending on our implicit or explicit theoretical assumptions. Effectively, Wegner supposes that our concept of mind must remain frozen in a naïve folk-psychological model. By doing so, he is failing to realize the true promise of psychology: that psychological research can have a major impact by improving upon folk psychology. In Wegner's worldview, the scientific project inevitably reduces us to mindless mechanisms. In contrast, we believe science's greatest achievement will be that of transforming our personal and cultural understanding of ourselves to better correspond with human nature.

NOTES

1. To be fair to Wegner, this theoretical distinction has only recently come to the fore (Jack & Shallice 2001; Lambie & Marcel 2002; Schooler 2002).

2. Wegner explains automatisms via his theory of ironic processes. The idea is that the conscious intention not to perform a certain action actually has the effect of giving rise to the action that the subject is trying to inhibit. Wegner has produced substantial evidence that inhibitory mental sets have such ironic effects in other contexts (notably thought suppression). Although the conscious intention causes the action, the subject does not experience the action as willed because the action is inconsistent with the aim of the intention.

3. Wegner (2003a) cites Jack and Shallice (2001) as providing such a framework.

4. The belief is so abstract that it is hard to imagine what it would be like to have it. Direct access implies certain knowledge, so the illusion would cause the subject to believe that their experience of agency cannot be mistaken. If you can doubt your experience of agency, then you cannot be suffering from an illusion of causal transparency.

5. The argument that Wegner implicitly relies on to reach his profoundly skeptical view of the mind closely echoes the argument Descartes uses to derive his skepticism about the external world. In both arguments the demonstration that we can be mistaken on occasion is used to motivate the much more radical view that we should question everything. The difference is that for Descartes, the mind was certain and the external world was thrown into doubt, whereas for Wegner, mechanistic explanation is solid while the mind is thrown into doubt.

"An unwarrantable impertinence"

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Abstract: Wegner's many examples of illusory involuntariness do not warrant the conclusion that the experience of voluntariness is also an illusion. His arguments appear to be related to the contemporary emphasis on automaticity in social cognition and behavior; both appear to represent a revival of situationism in social psychology.

In his *Meditations* of 1641, Descartes asserted that consciousness, including free will, sharply distinguished man from beast (cf. Descartes 1641/1680), and thus he initiated the modern philosophical and scientific study of the mind. As time passed, however, philosophers of a more materialist bent began denying this distinction, most visibly Julien Offray de la Mettrie, whose *Man a Machine* (Mettrie 1748/1749) claimed that humans were conscious automata, and Shadworth Holloway Hodgson, whose *The Theory of Practice* (Hodgson 1870) introduced the term *epiphenomenalism.* Although materialist monism was highly attractive to those who would make a science of psychology, William James, in his *Principles of Psychology* (James 1890/1980, p. 141), dismissed "the automaton-theory" as "an *unwarrantable impertinence in the present state of psychology*" (emphasis in original).

James was clearly committed to a causal role for consciousness, and thus for free will, but his statement implied a willingness to alter his view, when warranted, as psychology advanced. Indeed, the behaviorist revolution carried with it a resurgence of the automaton theory, reflected in Watson's emphasis on conditioned reflexes and Skinner's emphasis on stimulus control (Tolman's purposivist interpretation of learning was an exception). On the other hand, the cognitive revolution implied an acceptance of James' functionalist view: the primary reason to be interested in beliefs, expectations, and mental representations is that they have some causal impact on what we do. In fact, modern cognitive psychology accepts a distinction between automatic and controlled mental processes (e.g., Logan 1997; Shiffrin & Schneider 1984): Automatic processes are inevitably evoked following the presentation of some cue, are incorrigibly executed, consume little or no cognitive capacity, and are strictly unconscious. By contrast, controlled processes lack these properties, and are – although many scientific psychologists do not like to use the term – reflections of "conscious will."

To many of us, this seems to be a perfectly reasonable compromise, but Wegner's book appears to be a reassertion of the automaton-theory in pure form. His very first chapter argues that "It usually seems that we consciously will our voluntary actions, but this is an illusion" (Wegner 2002, p. 1). Just to make his point clear, Wegner offers (Fig. 3.1, p. 68) a diagram showing an "actual causal path" between an unconscious cause of action and conscious action, and another "actual causal path" between an unconscious cause of thought and conscious thought, but only an "*apparent* causal path" (emphasis in original) – the experience of conscious will – between conscious thought and conscious action. He concludes with Albert Einstein's image of a self-conscious but deluded moon, blithely convinced that it is moving of its own accord. In Wegner's view, apparently, we are conscious automata after all.

Wegner musters a great deal of evidence to support his claim that our experiences of voluntary and involuntary action are illusory, including an entire chapter devoted to hypnosis. In fact, Wegner goes so far as to note that "hypnosis has been implicated in many of the curiosities of will we have discussed" (p. 272). Certainly it is true that hypnotic subjects often feel that they have lost control over their percepts, memories, and behaviors. This quasi-automatic character of hypnotic experiences, bordering on compulsion, even has a special name: the *classic suggestion effect* (Weitzenhoffer 1974). However, I think that Wegner's interpretation of this effect is off the mark. In my experience, hypnotized subjects do not experience a "transfer of control to someone else" (p. 271) – namely, the hypnotist. Rather, they typically experience the phenomena of hypnosis as happening *by themselves.* This experience of involuntariness is what distinguishes a hypnotic hallucination from a simple mental image, and posthypnotic amnesia from simple thought suppression. But the experience of involuntariness is not the same as the transfer of control. Hypnotized subjects claim their involuntary behavior as their own, even as they experience it as involuntary – which is why it can persist when the suggestion is canceled, in contrast to behavior under the control of an experimenter's verbal reinforcement (Bowers 1966; 1975; see also Nace & Orne 1970).

Of course, this nonconscious involvement (Shor 1959; 1962) is illusory. As Shor noted, "A hypnotized subject is not a will-less automaton. The hypnotist does not crawl inside a subject's body and take control of his brain and muscles" (Shor 1979, p. 124). Even posthypnotic suggestion, the classical exemplar of hypnotic automaticity, lacks the qualities associated with the technical definition of automaticity. For example, Spanos et al. (1986) showed that posthypnotic response varied depending on the context in which the cue was given, thus violating the criterion of inevitable evocation. In addition, Hoyt (1990) showed that execution of a posthypnotic suggestion consumed considerable cognitive capacity, thus violating the criterion of effortlessness. By all standards, posthypnotic behavior counts as controlled, rather than automatic, but the subject does not experience it as such. The subject experiences it as an involuntary, or at least unwilled, behavior.

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Although there are a few dissenters (Kirsch & Lynn 1997; 1998a; 1998b; Woody & Bowers 1994; Woody & Sadler 1998), most theorists of hypnosis, whatever their other disagreements, agree that the experience of involuntariness in response to hypnotic suggestions is in some sense illusory. In Hilgard's (1977) neodissociation theory of divided consciousness, the experience of involuntariness results from the subject's lack of conscious awareness of the volitional activities required to execute the suggestion (see also Kihlstrom 1992b). From a social-psychological perspective, Sarbin and Coe (1972) identified the description of hypnotic phenomena as ""happenings" rather than "doings" as central to the hypnotic role. Similarly, Spanos (1986a; 1986b; Spanos et al. 1985) characterized reports of involuntariness as a strategy for convincing others that one was really hypnotized, and identified some of the conditions under which subjects could actually persuade themselves that such reports were true.

In fact, most of the other phenomena described at length by Wegner, such as the Chevreul pendulum, automatic writing, the Ouija board, and even facilitated communication, have this quality: behavior that is experienced by the individual as involuntary is actually voluntary in nature. Documenting this illusion would make for an interesting book, as indeed it has (Spitz 1997). But Wegner puts this evidence to a different rhetorical use – he tries to convince us, by citing examples of illusory *in*voluntary behavior, that our experience of *voluntary* behavior, in the ordinary course of everyday living, is illusory as well. Logically, of course, this does not follow. To be sure, there exist illusions of control as well (e.g., Alloy et al. 1989), but even these do not justify the strong conclusion that *all* experiences of voluntariness are illusory – which is what Wegner seems to be claiming.

Given that the evidence for an illusion of voluntariness is weak, the rationale for Wegner's claim must be found elsewhere – in theory, or perhaps in ideology. In this respect, Wegner's book can be viewed in the context of a trend in contemporary social psychology that I have come to call *the automaticity juggernaut:* the widespread embrace of the view that, even with respect to complex social cognition and behavior, we are conscious automatons whose experiences, thoughts, and actions are controlled by environmental stimuli – just as Skinner said they were (Bargh 1997; Bargh & Chartrand 1999; Bargh & Ferguson 2000; Wegner & Bargh 1998). The idea that the experience of conscious will is illusory follows naturally from this emphasis on automaticity, which has its roots in the situationism that has infected social psychology almost from its beginnings as an experimental science (Kihlstrom 2004). But based on the evidence mustered by Wegner, the "illusion of conscious will" seems now, as it did to James more than a century ago, to be an "unwarrantable impertinence."

Hypnosis and will

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Abstract: Although we are sympathetic to his central thesis about the illusion of will, having previously advanced a similar proposal, Wegner's account of hypnosis is flawed. Hypnotic behavior derives from specific suggestions that are given, rather than from the induction, of trance, and it can be observed in 90% of the population. Thus, it is very pertinent to the illusion of will. However, Wegner exaggerates the loss of subjective will in hypnosis.

Hypnosis and will. In a manuscript that we submitted to Wegner in 1995, in his capacity of associate editor of *Psychological Review,* we also reached the conclusion that "volition is not an introspected content of consciousness, but rather an interpretation." Our thesis was:

> Self-reports of intentionality . . . may be attributions or interpretations based on a priori, implicit theories of behavior and on perceptions of the stimulus situation. . . . Experiences of volition and involuntariness . . . are constructions or interpretations made possible by the high degree of automaticity that is characteristic of all complex behavior. (Kirsch & Lynn 1995)

Based on this thesis, we reached the conclusion that "behavior, including novel and intentional behavior, is initiated automatically" (Kirsch & Lynn 1999a, p. 504). Therefore, we are pleased to see such a thorough explication of this idea. Unfortunately, Wegner's discussion of hypnosis is inaccurate and misleading. The aim of this review is to correct these errors.

The phenomena of hypnosis. Hypnosis consists of two components: an induction procedure (e.g., "you are becoming hypnotized") and suggestions that are usually given after the induction (Wegner refers to these as "tests"). Up to 90% of the population respond to at least some hypnotic suggestions (Kirsch et al. 1995). Thus, hypnotic phenomena are very relevant to automaticity and the illusion of will, Wegner's "cautionary note" (Wegner 2002, p. 285) notwithstanding.

In examining these hypnotic phenomena, Wegner overestimates the role of inducing hypnosis and underestimates the importance of suggestions. Hypnotic suggestibility scales are not "indications of the success of the induction" (p. 282). These scales assess participants' responses to hypnotic suggestions. Usually, this is done after inducing hypnosis, leading Wegner to conclude that the responses are indications of "unique abilities possessed by those who are hypnotized" (p. 293). However, these responses can also be elicited without a hypnotic induction. In response to suggestions, people experience automatic movements, inhibited movement, hallucinations, pain reduction, and suggested amnesia, all without the induction of hypnosis. The effect of a hypnotic induction is to increase responsiveness to these suggestions, but only to a surprisingly small degree ("far less than the classical hypnotists would have supposed had the question ever occurred to them," wrote Clark Hull [1933, p. 298]) and only for a minority of subjects (Barber & Glass 1962; Braffman & Kirsch 1999; Hilgard & Tart 1966; Hull 1933; Spanos et al. 1985; Stam & Spanos 1980; Weitzenhoffer & Sjoberg 1961). Suggestion without hypnosis has even been found to reduce warts (DuBreuil & Spanos 1993) and control pain during surgery without anesthesia (Jones 1999).

Wegner also overestimates the degree of subjective automaticity in hypnosis, thereby reinforcing the mythology of hypnosis perpetuated in novels, movies, and stage presentations. He asserts that hypnosis involves a "giving over control to the hypnotist" (p. 271), in which "the subject may perceive a draining away of conscious will" (p. 288), so that hypnotic behavior occurs "without prior conscious thought" (p. 312) and is then not monitored. Most egregiously, he links hypnosis to the phenomenon of voodoo death. These claims are contradicted by data (Comey & Kirsch 1999; Lynn et al. 1990; Spanos 1986b) and by the way in which hypnotic suggestions are given. For example, hypnotic suggestions typically involve instructing subjects to imagine intentionally the desired response as a way of generating it (Bowers 1998), and hypnotized subjects can easily stop responding whenever they want to.

Theories of hypnosis. Wegner is incorrect in classifying our approach to hypnosis as a "faking theory." We do not view hypnotic behavior as due to faking, and neither do most of the other theorists that Wegner identified as belonging to this camp. Indeed, we have conducted research and argued vociferously against the identification of hypnosis with faking (Kirsch 1998; Kirsch & Lynn 1995; Kirsch et al. 1989; Perugini et al. 1998). The more accurate (and conventional) name for these theories is *nonstate* theory.[1]

Nonstate theorists do not deny that suggestions, in and out of hypnosis, produce changes in experience. Nor do they deny that the experience of being in a trance is produced in many subjects. Rather,

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