The Willful Self

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William James devoted a chapter of his Principles of Psychology *to the nature and function of the will, elaborating several specific means by which individuals engage in willful behavior. For James, the self was centrally involved in the will, and "willing" often involved perceiving the end state, or goal, in terms of the self. Until quite recently most approaches to the will, intention, and motivation since James have minimized the role of the self. This article describes recent conceptions of the self and discusses how these may allow us to refine and extend some of James's notions about the operation of the will. It focuses specifically on the importance of making an intention self-relevant, the ways that the self may allow the person to maintain attention on an intended act, and the process by which the self may control willful behavior. It is argued that further developments in understanding willfulness require thorough analysis of the interdependence between the structure and functioning of the self system and volitional behavior.*

As psychologists grapple with how to put cognition, emotion, motivation, and personality back together again, the ideas of William James are unparalleled in their relevance. One hundred years after the publication of *The Principles of Psychology*, they are stunningly fresh and provocative, and references to them can be seen everywhere in increasing numbers. Most of the recent references to James are either to his comprehensive and compelling ideas on the self and its functioning or to his theory of emotion. By contrast, James's thinking about "will" has yet to be thoroughly rediscovered.

Until quite recently (see Fiske, 1989; Wegner & Schneider, 1989) there has been a sort of collective reticence by psychologists when it comes to discussions of will. Those who speculate freely about cognition, emotion or motivation have often drawn the line when it comes to the same kind of speculation about will. This reticence, however, is being rapidly replaced by a renewed interest in the function of intention and volition (Kuhl & Beckmann, 1985; Nuttin, 1984), self-regulation (Carver & Scheier, 1981), and self-efficacy (Bandura, 1986). For example, a recent volume entitled *Goal Concepts in Personality and Social Psychology* (Pervin, 1989) begins with a call for attention to one of James's fundamental concerns: "What is the relation between cognition of an end result and action; that is, how do we account for the translation of wish into will?" (pp. 2-3). The questions abound. What is will? Is it separate from cognition, emotion, and motivation? Does it derive from them? As James originally argued, and as Kuhl (1985) has forcefully underscored, will is not the same as motivation, nor is it just an epiphenomenal by-product.

Personality and Social Psychology Bulletin, Vol. 16 No. 4, December 1990, 726-742

"A CERTAIN ELECTRIC CONNECTION"

Following a variety of suggestions implicit throughout James's (1890/1983) essay on will, it is our contention that a more specific understanding of the origins and consequences of will requires knowledge of the structure and functioning of the self-system. Although many theorists have explicitly invoked the self in understanding the control and regulation of behavior (e.g., Bandura, 1986; Carver & Scheier, 1981; Harter, 1986; Kanfer, 1970) and have demonstrated the importance of constructs like self-efficacy and perceived competence in all types of performance, we have yet to identify the origin or the nature of the self-structures that afford willful control over one's behavior.[1] What is the nature of the self-relevant knowledge that enables one to pass up ice cream or a cigarette, run another mile, study another hour, hold one's tongue—that is, to do what one could very easily, and seemingly very happily, not do?

Our goal in this article is to characterize recent conceptions of the self and then to discuss how these current conceptions may allow us to refine and extend some of James's early notions about the operation of the will. Specifically, we will focus on James's ideas of the importance of making an intention self-relevant, on the ways that the self may allow the person to maintain attention on an intended act, and on the processes by which will may control behavior. Our basic point is that many of the issues that James grappled with a hundred years ago may now be somewhat better understood, or at the very least more productively framed, if we implicate what is known about the nature and functioning of the self-system.

The Self as the Source of Will

According to James (1890/1983), if desire is accompanied by a sense that "attainment is not possible, we simply *wish*, but if we believe that the end is in our power, we *will* that the desired feeling, having or doing shall be real; and real it presently becomes" (p. 1098). It appears that, for James, the self was the source of the will; as he wrote, "volition is primarily a relation . . . between our Self and our own states of mind" (p. 1172). James suggests that one's will "power" over events, objects, or ideas begins when one's internal representations of these events, objects, or ideas implicates one's representation of the self. Thus, an idea becomes an individual reality when it "*stings* us in a certain way, makes as it were a certain electric connection with our Self" (p. 1172). This quality of reality "is not like other qualities. It is a relation to our life. It means *our* adoption of the things, *our* caring for them, *our* standing by them. . . . And the transition from merely considering an object as possible, to deciding and willing it to be real; the change from . . . the 'don't care' state of mind to that in which 'we mean business' is one of the most familiar things in life" (p. 1173).

As this quotation suggests, James considered that most cases of "willing" seem to require elaborating the desired end state in terms of the self. Connecting an idea or an action with the self implies making it self-relevant, moving it from the vague, the global, or the abstract to the personal, the individual, or the concrete. The intended action is then no longer just one of a repertoire of possible actions.

For James, this engagement of the self was particularly important on those occasions that were especially difficult or involved great effort. A person may decide that he or her eggs need salt and so reaches for the salt shaker. This behavior is certainly intentional, but it involves little deliberation, conflict, or effort (unless one's doctor has strictly forbidden salt). But we experience an altogether different type of willing when the chosen behavior is difficult, is nondominant, or requires great effort (Fiske, 1989). In this kind of decision, James describes that "we feel, in deciding, as if we ourselves by our own willful act inclined the beam. . . . The slow dead heave of the will that is felt in these instances makes of them a class altogether different" (p. 1141). It is this effortful type of will—choosing to follow the nondominant "line of greatest resistance" (p. 1154)—that is our primary interest here.

Current Conceptions of the Self

Most current views of the self characterize it as a complex, dynamic system which reflects ongoing behavior and which also mediates and regulates this behavior (e.g., Greenwald & Pratkanis, 1984; Kihlstrom & Cantor, 1984; Markus & Wurf, 1987; Rosenberg, 1979). Psychologists and sociologists alike now concur that the self-concept is probably best framed as a multifaceted phenomenon, as a set of images, schemas, conceptions, prototypes, theories, goals, or tasks (Carver & Scheier, 1981; Epstein, 1980; Greenwald, 1982; Higgins, Strauman, & Klein, 1986; Markus, 1983; Schlenker, 1980; Stryker, 1987). The consensus on the multifaceted, dynamic nature of the self is of relatively recent vintage. Despite James's claims that the self was a composite of material, social, and spiritual selves, until quite recently many approaches to the self-concept formulated it as a fairly monolithic or global entity (see Mead, 1934).

The self-representations that make up the self are a diverse set. Some are more important and more elaborated with behavioral evidence than others. Some are positive, some negative; some refer to the individual's here-and-now experiences, while others refer to past or future experiences. One's well-developed self-representations, called self-schemas (Markus, 1977), core conceptions (Gergen, 1968), or salient identities (Stryker, 1980), lend structure and coherence to the individual's self-relevant experiences. They are constructed creatively and selectively from one's past experiences in a particular domain.

People with a self-schema in a particular domain (schematics)—whether it is for their attributes of independence, generosity, or shyness; for their expertise about sports, food, or the stock market; or for their roles as leader, teacher, parent, or spouse—are those who consider these domains to be of critical personal importance (Markus, 1977). It is the self-schema—the representation and articulation of a given attribute, skill, or ability—that allows an individual to use her or his abilities or attributes instrumentally and to have a sense of control and expertise with respect to these abilities. Thus, the individual who knows or understands that he or she is "smart" or "good in school" will be enduringly sensitive and responsive to issues relevant to intelligence or school achievement (Eccles, 1983; Markus, Cross, & Wurf, 1990). This expertise will include an elaborate understanding of the nature of the ability, of

the strategies for displaying or exercising one's ability, and of those situations that will inhibit or foster its display (Cantor & Kihlstrom, 1983; Markus & Wurf, 1987). These well-elaborated structures of the self shape the perceiver's expectations. Moreover, they determine which stimuli are selected for attention, which stimuli are remembered, and what types of inferences are drawn (Markus & Sentis, 1982). In this way the self-concept becomes a significant regulator of the individual's behavior and may be maintained through self-symbolizing (Wicklund & Gollwitzer, 1982), self-verifying (Swann, 1983), or self-affirming (Steele, 1988) behaviors.

Splitting the Universe Into the "Me" and the "Not Me": The Importance of Self-Relevance

The process of willing a difficult decision seems to begin when the individual invests a particular alternative with self-relevant meaning, claiming the desired end state as his or her own and making it part of the self. As James wrote,

> One great splitting of the whole universe into two halves is made by each of us; and for each of us almost all of the interest attaches to one of the halves; but we all draw the line of division between them in a different place. When I say that we all call the two halves by the same names, and that those names are "*me*" and "*not-me*" respectively, it will at once be seen what I mean. The altogether unique kind of interest which each human mind feels in those parts of creation which it can call *me* or *mine* may be a moral riddle, but it is a fundamental psychological fact. (1890/1983, p. 278)

The splitting of the universe into "me" and "not-me" is a continual, ongoing project. Some actions and domains are permanently designated as "me." It is in these areas that one develops self-schemas. Other actions and domains gain or lose their residence status within the boundaries of the self depending on situational and environmental contingencies (McGuire & Padawer-Singer, 1976). Those activities that are claimed as "me" become connected to the self through an intersection of the representations of the self and the representations of target actions or domains (see Markus & Sentis, 1982). Dieting, for example, may initially constitute a concept consisting of impersonal elements such as cutting calories, forbidden foods, scales, and special recipes. When one resolves to stick to a diet, and manages it, there will be an overlap between the diet concept and the self-concept. The elements of this overlap will be representations of "*me* feeling virtuous when refusing ice cream," "*me* weighing myself every morning, seeing no progress but sticking to the diet anyway," "*me* feeling lighter," and "*me* giving away clothes that are too big." We would argue that the first step in the slow dead heave of the will requires making one alternative (e.g., eating fruit vs. eating ice cream) more self-relevant than the other and thereby achieving the "electric connection." If the anticipation of satisfaction from wearing clothes two sizes smaller results in more, or more intense, cognitive, affective, or somatic self-representations than the anticipation of the delicious tastes and immediate gratification, the mandate to restrain oneself from eating for another hour can be more easily formulated.

Once a choice or alternative is claimed as "me," it will loom larger in the person's perceptual field, commanding more attention (Bargh, 1982). Other alternatives, even those that were formerly attractive or compelling, may become temporarily peripheral and marginal. The actor will begin to privilege information about this domain, showing heightened sensitivity to it, processing information about it more efficiently and more confidently, and remembering it more easily. Information that might impede one's willful actions may be suppressed or ignored (see Markus & Sentis, 1982, for a detailed review of self-relevant information processing). As a particular domain, such as exercising or staying fit, becomes an enduringly salient aspect of the self, it may become progressively easier to maintain one's resolve in this domain and to exercise one's will. An important by-product of defining oneself in terms of particular actions is a sense of control, responsibility, or self-efficacy in this domain (Bandura, 1986). Such feelings or beliefs may contribute additionally to one's willingness to attempt change or to pursue a new course of action.

The Importance of Possible Selves

Individuals also have ideas about themselves that refer not to their past or current experiences but to their future. They have ideas, beliefs, and images about their potential and about their goals, hopes, and fears. This is particularly so in those domains that are important for self-definition. According to James, some of the most significant aspects of the self are those that reflect an awareness of one's potential. "The seeker of his truest, strongest, deepest self must review the list [of possibilities] carefully, and pick out the one on which to stake his salvation. All other selves thereupon become unreal, but the fortunes of this self are real. Its failures are real failures, its triumphs real triumphs, carrying shame and gladness with them" (1890/1983, pp. 295-296). James termed such aspects of the self "potential selves," but he did not, in the chapter on will, speculate on what role potential selves might play in the determination of willful action.

Contemporary social and personality psychologists are increasingly aware of the role that representations of potential selves in the future play in understanding the individual's current behavior. In recent work, the future-oriented possible selves have been described as *personal projects* (Little, 1983), *life tasks* (Cantor & Kihlstrom, 1983, 1987), *ego tasks* (Breckler & Greenwald, 1986), *desired identity images* (Schlenker, 1985), *psychological careers* (Raynor & McFarlin, 1986), *personal strivings* (Emmons, 1986; Emmons & King, 1988), *current concerns* (Klinger, 1975), and *possible selves* (Markus & Nurius, 1986) (see Cantor & Zirkel, in press, for a thorough review of these and related perspectives). Common to all these perspectives is an emphasis on the individual's idiosyncratic and personal construal of the self and of self-relevant circumstances and situations.

Concerned with how conceptions of potential may influence current functioning, Markus and Nurius (1986), for example, have developed the idea of *possible selves*. These representations of the self in future states encompass not only the positive potential selves that concerned James but also the individual's negative potential selves. Possible selves are those elements of the self-concept that represent "what

individuals could become, would like to become, or are afraid of becoming" (p. 954). These possible selves are not just static images or conceptions of future states; rather, they are motivational resources that are invoked by the individual, alone or in interaction with other possible selves, in the course of willful action. We suggest that the act of invoking possible selves and filling one's mind with them has the immediate consequence of organizing and energizing one's actions in pursuit of these desired end states. As James claims, "Whether or [not] there be anything else in the mind at the moment when we consciously will a certain act, a mental conception made up of memory-images of these sensations, defining which special act it is, must be there" (1890/1983, p. 1104).

Many of the recent conceptualizations of the potential self mentioned above help us to understand *what* will be chosen as the object of the will. For example, Raynor and McFarlin (1986) suggest that those behaviors that provide positive informational value (i.e., tell us something about ourselves) or positive affective value (i.e., allow us to feel good about ourselves) will be the focus of volition. But our primary concern (and, we think, James's primary concern) is with *how* these future images of the self facilitate the "production of voluntary movements" (p. 1098). We suggest that possible selves work first to enable the person to attend to or focus on the intended action; the possible self allows the person to "sustain a representation" of the intended act (James, 1890/1983, p. 1170). Second, possible selves allow the person to simulate or to imagine the behaviors and actions necessary to accomplish that desired act. In the following sections, we describe recent research relevant to these functions of the self in volition.

"HOLDING IT FAST BEFORE THE MIND"

Why is it so often the case that the initial "slow dead heave of the will" produces little but an internal thud? Most people can recall times when they have "pledged themselves" (Keisler, 1971) to a particular intention, exercising their will to the greatest extent possible. After a day or perhaps two, they find that their resolve is slipping; they are sleeping an extra hour instead of jogging, sneaking a cigarette or two, or indulging in ice cream instead of carrots. What causes a resolve to weaken? Why are we unable to carry out our intentions?

James argued that the will is strongest when the image of the self in the desired end state occupies most of the person's cognitive space. He says, "The essential achievement of the will, in short, when it is most 'voluntary' is to ATTEND to a difficult object and hold it fast before the mind" (1890/1983, p. 1166). The idea of being thin, of being a lawyer, or of being a nonsmoker may not always be adequate for effective exercise of the will. From the perspective of possible selves, it is when the desired end state is made self-relevant or is personalized that it is most easily held before the mind – the person must see *me* buying smaller, more fashionable clothes; *me* articulately arguing a case in court; *me* refusing a cigarette – for attention to be held. Such personalizing of the goal makes the intended action both more interesting and more accessible to memory (Markus, 1977; Nuttin, 1984), allowing the person

to concentrate more easily on the task and to bring attention back to the goal after the mind has wandered. For James, "the faculty of voluntarily bringing back a wandering attention, over and over again is the very root of judgment, character, and will" (1890/1983, p. 401). It is through the articulation of vivid and elaborate possible selves that the end state may remain accessible to attention and fast before the mind.

This "filling of the mind by an idea" (James, 1890/1983, p. 1169) may prevent conflicting or distracting ideas from sneaking into awareness. Thus, the student whose attention is riveted on the possibility of attending law school may be less likely to think about how she could be spending her time socializing instead of studying. The person whose mind is filled with the anticipation of the praise he or she will get after shedding 30 lb may be less likely to think about the pleasures of ice cream. For James, the presence of such conflicting ideas or habits made willful action the most difficult. Replacing conflicting thoughts with possible selves may make some actions in pursuit of the goal so well learned or rehearsed that they become almost automatic; after awhile the student no longer must deliberate over whether to study or not; the dieter banishes the idea of buying ice cream.

How one controls one's own thinking has recently been investigated by several researchers. In fact, an entire volume has been dedicated to exploring the nature and purposes of automatic and controlled thought (Uleman & Bargh, 1989). For example, Wegner, Schneider, Carter, and White (1987) have demonstrated that recurrent thoughts (e.g., continual thinking about ice cream) can be decreased by thinking about an alternative topic. (See also Fiske, 1989, for an insightful statement of automatic and controlled processes in intention, and Bargh, 1989, on goal-directed automatic processes.) In other research, Heckhausen and Gollwitzer (1987) suggest that attention to the goal is facilitated by what they term an "implemental mind-set," in which individuals concentrate on the positive consequences of their decision and ignore or minimize negative or alternative outcomes. Such a pattern protects the will from thoughts that would undermine action. According to Gollwitzer and Kinney (1989), an implemental mind set is characterized by information processing biased in favor of the decision. Such selective processing fosters an illusion of control, which makes goal striving more likely (Taylor & Brown, 1988).

We hypothesize that these attempts to protect the will by limiting or controlling one's thoughts will be most effective when the alternative topic (as in Wegner's study) or the goal (in the Heckhausen & Gollwitzer studies) is self-relevant or involves a possible self. This connection to the self should make the object of thought compelling and more easily attended to, allowing the person to suppress or ignore distractions. This function of possible selves was suggested by Inglehart, Markus, and Brown (1988), who studied medical students enrolled in a 7-year combined BA-MD program. Controlling for background differences such as high school grades, they found that students who had only one occupational possible self upon entering the program (e.g., "becoming a doctor") had better grades and higher scores on the national board exams 5 years later than students who had two or more occupational possible selves. Inglehart et al. (1988) argue that focusing on this single possible self enables the

student to better structure, organize, and motivate his or her action toward achieving that goal.

Kuhl (1986) refers to the process of protecting the intention or commitment from competing or conflicting possibilities as "shielding the intention." To accomplish this, Kuhl suggests that the person may engage in several processes that facilitate "action control," or the carrying out of one's intentions. These include motivation control, active attentional selectivity, emotion control, and environmental control. Kuhl's theory assumes that these processes are engaged when a decision or goal is self-relevant, but he does not suggest how the self directs these processes or how these processes specifically involve the self. We contend that most of these processes of action control may be consequences of claiming a particular behavioral domain as self-relevant or self-identifying. For example, the person striving for what Kuhl calls "motivation control" attempts to strengthen the intention by summoning additional reasons for completing the desired action. We would argue that for these reasons to be compelling and to shore up one's flagging motivation, they must importantly implicate the self; they must be rooted in that portion of the world the person calls "me" (James, 1890/1983). So the person who succeeds in a bid to quit smoking will be the one who has envisioned a number of self-relevant positive consequences of being a non-smoker: *oneself* looking and feeling better or *oneself* spending the money saved on an exotic vacation. By keeping this possible self in mind, the individual who is schematic in a domain will be the one who can most easily engage in what Kuhl calls "active attentional selectivity," in which the person ignores new information that might distract him or her from the task, and in "emotion control," in which he or she inhibits emotional reactions in order to protect an intention from degeneration or competition from other actions. Finally, because the schematic individual has a much more well-elaborated knowledge structure of the self in this domain than the aschematic, he or she is better able to perform "environmental control," or changing the environment so as to make carrying out the intention more likely.

In fact, Cross and Markus (1989) found support for these hypotheses in a study examining attitude and performance differences between subjects who had the same scores on college entrance tests but who were either schematic or aschematic for thinking logically and analytically. After completing a test of logical reasoning ability, subjects were given an instrument modeled after Kuhl's (1985) Action Control Scale but directed specifically toward the logical reasoning test. For example, when presented with the incomplete phrase "When I start to question an answer I have given on a test like this," schematic subjects were more likely to respond, "I first think of the reasons for my answer and the implications of my decision," while aschematic subjects were more likely to respond, "I often get anxious and worried about whether I made the right decision." We found that schematic subjects scored much higher on this task-specific test of action control than aschematic subjects. In a subsequent task, schematic subjects also demonstrated that possible selves relevant to the logical schema were activated in working memory. Cross and Markus suggest that having a schema for such an ability provides the person with the action structure for concen-

trating on the current task; this person is more likely to have highly organized knowledge structures relevant to the task (Markus & Ruvolo, 1989), which allow him or her to more effectively employ his or her abilities and skills, training his or her attention on the task at hand and away from his or her own affective states. The schematic is also more likely to articulate relevant possible selves that serve as standards or incentives for action on domain-relevant tasks.

Holding a behavioral alternative fast before the mind may also be enhanced by a consideration of the consequences of *not* engaging in the activity deemed necessary. The successful dieter can fix in his or her mind the positive results of his or her self-denial, such as being in good shape, looking better, and feeling better, but he or she can also elaborate a set of "feared" possible selves to direct his or her behavior (Markus & Nurius, 1986). The image of being fat, out of shape, and unhealthy may impede one's course toward the refrigerator. In a study of people who were schematic for their shyness, Wurf (1988) found that those who developed feared possible selves related to shyness were more likely to be actively seeking to become less shy than those who had no feared selves in this domain. Yet, a feared self alone, without a balancing expected possible self, may be debilitating, producing inaction or a stopping in one's tracks. Oyserman and Markus (1990) found, for example, that teenagers who feared dropping out of school or being unemployed, and who did not expect to have a good job or to get through school, were more likely to be delinquent than teenagers with "balanced" possible selves. Their research suggests that a feared possible self may be most effective in directing willful action when it is offset or balanced by a self-relevant positive expected self *in the same domain* that provides the outline of what one might do to avoid the feared state.

"AWAKENING THE ACTUAL MOVEMENT": POSSIBLE SELVES AND THE SIMULATION OF INTENDED ACTION

For James, focusing one's attention and thereby holding a desired end state "fast before the mind" was the essential aspect of will because once the end state was held in mind, instrumental action toward this desired state, unless blocked or inhibited in some way, would naturally follow. This reasoning was based on the notion of "ideomotor action." James wrote, "Wherever movement follows *unhesitatingly and immediately* the notion of it in the mind, we have ideo-motor action" (1890/1983, p. 1130). He continued, "We may then lay it down for certain that every representation of a movement awakens in some degree the actual movement which is its object; and awakens it in a maximum degree whenever it is not kept from so doing by an antagonistic representation present simultaneously to the mind" (1890/1983, p. 1134).

James seemed to be suggesting that the consequence of envisioning (or in some other way sensing) a desired end state and holding it fast before the mind is the initialization, or the setting in motion, of the scripts or programs that will produce the anticipated outcomes. The representations of the desired action that fill up the mind and the plans that create a bridge of self-representations between the current self and the possible self are not separate from "real" or overt behavior. Instead they are one feature of the total behavioral sequence.

In support of his ideomotor theory, James cites the work of Féré, a physician who reports studies in which he closed and opened his own hands in front of his subjects. Soon these subjects began to describe corresponding feeling in their own fingers and began to "irresistibly" close and open their own hands. Given these conditions of preparation, Féré found that his subjects could apply much more pressure to a hand dynamometer than without such preparation. Presumably the representation of the target's behavior in the subject's mind in some way primed the subject's own hand-opening and hand-closing routines.

Since James, there have been remarkably few systematic attempts to chart the paths between thoughts, feelings, and overt behavioral outcomes and to become specific about how the representation of an action may "awaken the actual movement." Recently, however, a number of studies suggest just such a connection. Gregory, Cialdini, and Carpenter (1982) found that many more people who imagined themselves with cable television subscribed to it than among those who simply listened to a persuasive message about its virtues. Sherman and Anderson (1987) found that psychotherapy patients who imagined themselves returning for at least four sessions were less likely to drop out than those who did not engage in this imagery. And Marlatt (1978) was able to improve the recidivism rate for alcoholics by encouraging them first to imagine situations in which drinking would be a definite temptation and then to envision how to avoid taking a drink.

Markus and Ruvolo (1989) suggest that holding the idea of an intended action in mind can have a variety of consequences—cognitive, affective, and somatic. It remains to be determined which of these consequences, or which combination of them, is most directly responsible for awakening the actual movement. With respect to cognitive consequences, envisioning a desired end state produces selective information processing favoring the intended actions. As a consequence, the action seems more likely, and people are able to construct effective plans (Anderson, 1983; Hayes-Roth & Hayes-Roth, 1979; Klinger, Barta, & Maxeiner, 1980).

Envisioning an action can also have affective or somatic consequences. Thus, by imagining a possible action, one may anticipate and actually experience part of the affect, positive or negative, associated with the end state. In one study, for example, Wright, Contrada, and Patane (1986) described easy, moderately difficult, or very difficult tasks to subjects who believed they would be performing them later. Those who were preparing to work on the moderately difficult task had a high increase in systolic blood pressure, while those anticipating an easy task or a very hard one experienced only slight increases. The individuals expecting a moderately difficult task presumably were the most invested in the task and thus able to create a realistic sequence of possible selves, and this, in turn, had arousing or energizing effects. Also relevant to the somatic effects of possible selves is a little-cited literature on the beneficial effects of mental practice (e.g., Feltz & Landers, 1983). This work demonstrates that mental practice (the symbolic rehearsal of physical activity in the absence of any gross muscular movements) is very often associated with improved task performance. For example, Richardson (1967a, 1967b), in a review of 25 studies on mental practice or symbolic rehearsal, found improved performance in ring tossing,

juggling, tennis, card sorting, digit substitution, muscular endurance, and mirror drawing. Such studies are consistent with the report of numerous athletes who relate how they prepare for successful performance. For example, Greg Louganis, the Olympic champion high diver, has described how his performance is enhanced by envisioning every feature of his upcoming dive, mentally rotating his body through time and space.

Notably, some research indicates that when a person imagines the performance of an action, the corresponding muscles may be slightly activated (Korn & Johnson, 1983). To some small degree motor pathways may become innervated in the same way they are when the muscles are actively engaged in the behavior. The physical reaction of the muscles is mimicked during imagery, and some learning occurs. Mackay (1981) suggests that mental and physical events have the same underlying component. He postulates a hierarchy of the neurons that regulate mental activity and muscle movements. Because of practice, activation of the pathways between nodes becomes more familiar, and transmission along the pathways becomes faster, leading to enhanced performance. This facilitation can take place even if the practice is mental, because when mental nodes are activated, the corresponding muscle movement nodes are "primed" or partially activated, even though no muscle movement takes place.

Envisioning an intended action affords a rehearsal not just of the required movements but of the coordination of perceptual schemas with action schemas. Finke (1980) has charted the equivalencies between imagery and actual perception and has shown that visual imagery shares portions of the visual perceptual cycle such that an individual who imagines reading a book shows a pattern of perceptual activity very similar to that of someone actually reading a book and a very different pattern from that of someone imagining a ship on a horizon. A recent study (Farah, 1989) finds that as soon as 200 msec after an instruction to imagine a stimulus, subjects show a pattern of activity on the visual cortex that is similar to that obtained with actual perceptual activity. The fact that the brain activity occurs so quickly when imagining an action could have an impact on performance in just the way James theorized. Such work implies a coherence and an interdependency among imagery, perception, and action that is only now beginning to unfold (see Volpert, 1985).

James's ideomotor theory thus denies that a gap necessarily exists between intention and action. "We do not have a sensation or a thought and then have to *add* something dynamic to it to get a movement" (p. 1134). James probably would have been amazed that a century later theories about mind-body interdependencies are still exceedingly controversial and are only recently gaining support. He would no doubt have concurred with Nuttin (1984), who argues:

> Behaviorism, as we all know, has constructed a deep cliff between cognition and overt behavior, between mental activity and action, and thus also between goals, intentions, and plans on one side, and executive behavior on the other side. I would like to argue that this deep cliff does not really exist; it is an artificial construct. . . . it may be sufficient to say that cognition and overt action are the two sides of behavior. . . . Mental and overt-behavioral functioning

> together constitute behavior. Therefore, the separation between cognition and overt behavior is an artificial one; man's dealing with this work is cognitive and manipulative at the same time. (p. 160)

The implications of an ideomotor theory for the functioning of the will are straightforward. If we hypothesize that mental and physical events have the same underlying components, the more precisely one can mentally simulate a desired action, the more likely that action is to be accomplished (see also Ajzen & Fishbein, 1977). Given our ideas about the importance of the self in the exercise of will, it is interesting to note that the beneficial effects of mental simulation are strongest when the person uses what is called "internal imagery," viewing the activity as he or she would while performing it (Mahoney & Avenir, 1977; Nigro, 1983; Orlick, 1986). Performance effects are less strong when the person takes an external perspective and sees himself or herself as an outside observer would. We would argue that imagining from an internal perspective allows one to create possible selves not just of the end state but of the required substates or intermediate states as well, thus allowing some practice of all aspects of the performance.

CONCLUDING COMMENTS

James made some very clear statements about the importance of the self in willful action. He argued that willful action includes commitment to a choice or alternative and that this commitment must make a "connection" with the self to be of any consequence. To carry through such a commitment, he suggested that the choice must be "held fast before the mind" and that conflicting thoughts must be suppressed or ignored. Further, he speculated about the psychological and physiological role of such mental images in action.

In this article we have discussed the role of the self in those actions that require great effort or engender intense internal conflict. In these cases, willful action implicates the self; indeed, it is a desire of the self that we contend is the source of voluntary action. It is a vision of the self in the future that configures one's motivation and creates the specific outlines of one's intention. Further, such willful behavior is in the service of validating one's most important self-concepts or identities. Individuals cannot lay claim to particular conceptions of the self unless they behave in accordance with them. Creating and maintaining a self system thus requires willful, voluntary action. Actions that are compelled by others or actions that are completely habitual or routine are not as self-diagnostic or affirming as those that are self-determined (Fiske, 1989). Willful action can be best understood with reference to the self-system.

Once will is rooted within the self-system, it is possible to characterize many will-related phenomena as consequences of the nature, structure, and functioning of the self-system and to become more specific in our speculations about their origin and their nature. Much of our behavior is in the service of maintaining consistency, satisfying needs, reducing tensions, or in some way maintaining homeostasis. By

contrast, much willful behavior involves overcoming inertia, "going beyond," and changing the most likely course of behavior. This is behavior that Kozielecki (1984) calls "transgressive" and Nuttin (1984) labels "uphill."

We have explored only a fraction of James's wealth of ideas concerning will. For example, he wrote about differences in the exercise of the will, describing some people as having an "explosive," or unconstrained, will, whereas others were characterized by an "obstructed," or overly restrained, will. What factors contribute to the development of these differences in "willing," and how is the self represented in these types of decisions? How might current perspectives of the role of the self in action help us understand such examples of a distorted will as depression or anorexia? Depression, for example, seems to involve an inability to commit to a particular behavioral alternative and to heave the will in a particular direction. If we assume that people engage in voluntary action when they feel good about the self-conception they are validating, then depressives may refrain from such actions because they typically feel quite negatively about many aspects of themselves. Willful action might only serve to validate these aspects.

Many questions remain about the development of the self and the concomitant development of the will. The studies of Mischel and his colleagues (Mischel, Shoda, & Rodriguez, 1989) reveal that some children can exercise their will and delay gratification much better than others at a very early age. Why? The answer to such questions becomes particularly important in light of recent findings indicating that the ability to delay gratification can predict intellectual performance years later. Are children who have a clear conception of themselves in a particular domain ("good at following the teacher's instruction") those who will be the most interested in validating this self-conception by willful action—committing to a particular alternative and holding it fast before the mind? What must be created within the self system before individuals can become willful and engage in voluntary action? What is the difference between deciding *not* to do something (e.g., eat a bowl of ice cream) and deciding *to* do something (e.g., go for a run)? How can we characterize the self system of people who commit to certain actions against all odds? Recent efforts to describe the structures of the willful self (e.g., possible selves, life tasks, personal projects, personal striving) suggest that a century later we are ready to explore that "certain electric connection" between the self and will.

NOTE

1. Although the term *willful* is often used today to describe a person who is headstrong or stubborn, we will use it as a modifier of action that is intentional or deliberate.

REFERENCES

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin, 84*, 888-918.

Anderson, C. A. (1983). Imagination and expectation: The effect of imagining behavioral scripts on personal intentions. *Journal of Personality and Social Psychology*, 45, 293-305.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bargh, J. A. (1982). Attention and automaticity in the processing of self-relevant information. *Journal of Personality and Social Psychology, 43,* 425-436.

Bargh, J. A. (1989). Conditional automaticity: Varieties of automatic influence in social perception and cognition. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 13-51). New York: Guilford.

Breckler, S. J., & Greenwald, A. G. (1986). Motivational facets of the self. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior.* New York: Guilford.

Cantor, N., & Kihlstrom, J. F. (1983). *Social intelligence: The cognitive basis of personality* (Tech. Rep. No. 60). Ann Arbor: University of Michigan.

Cantor, N., & Kihlstrom, J. F. (1987). *Personality and social intelligence.* Englewood Cliffs, NJ: Prentice-Hall.

Cantor, N., & Zirkel, S. (in press). Personality, cognition, and purposive behavior. In L. Pervin (Ed.), *Handbook of personality theory and research.* Hillsdale, NJ: Lawrence Erlbaum.

Carver, C. S., & Scheier, M. F. (1981). *Attention and self-regulation: A control-theory approach to human behavior.* New York: Springer-Verlag.

Cross, S., & Markus, H. (1989, May). *The role of self-schemas in competence.* Paper presented at the 61st Annual Meeting of the Midwestern Psychological Association, Chicago.

Eccles, J. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motives* (pp. 75-146). San Francisco: W. H. Freeman.

Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology, 51,* 1058-1068.

Emmons, R. A., & King, L. A. (1988). Conflict among personal strivings: Immediate and long-term implications for psychological well-being. *Journal of Personality and Social Psychology, 54,* 1040-1048.

Epstein, S. (1980). The self-concept: A review and the proposal of an integrated theory of personality. In E. Staub (Ed.), *Personality: Basic issues and current research.* Englewood Cliffs, NJ: Prentice-Hall.

Farah, M. J. (1989). Semantic and perceptual priming: How similar are the underlying mechanisms? *Journal of Experimental Psychology: Human Perception and Performance, 15,* 188-194.

Feltz, D. L., & Landers, D. M. (1983). The effects of mental practice on motor skill learning and performance: A meta-analysis. *Journal of Sport Psychology, 5,* 25-57.

Finke, R. A (1980). Levels of equivalence in imagery and perception. *Psychological Review, 87,* 113-132.

Fiske, S. T. (1989). Examining the role of intent: Toward understanding its role in stereotyping and prejudice. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 253-283). New York: Guilford.

Gergen, K. J. (1968). Personal consistency and the presentation of self. In C. Gordon & K. J. Gergen (Eds.), *The self in social interaction* (Vol. 1). New York: Wiley.

Gollwitzer, P. M., & Kinney, R. F. (1989). Effects of deliberative and implemental mind-sets on illusion of control. *Journal of Personality and Social Psychology, 56,* 531-542.

Greenwald, A. G. (1982). Social psychology from the perspective of the self. In J. Suls (Ed.), *Psychological perspectives on the self* (pp. 151-181). Hillsdale, NJ: Lawrence Erlbaum.

Greenwald, A. G., & Pratkanis, A. R. (1984). The self. In K. S. Wyer & T. Srull (Eds.), *Handbook of social cognition* (Vol. 3, pp. 129-178). Hillsdale, NJ: Lawrence Erlbaum.

Gregory, W. L., Cialdini, R. B., & Carpenter, K. M. (1982). Self-relevant scenarios as mediators of likelihood estimates and compliance: Does imagining make it so? *Journal of Personality and Social Psychology, 43*, 89-99.

Harter, S. (1986). Processes underlying the construction, maintenance, and enhancement of the self-concept in children. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self*. Hillsdale, NJ: Lawrence Erlbaum.

Hayes-Roth, B., & Hayes-Roth, F. (1979). A cognitive model of planning. *Cognitive Science, 3*, 275-310.

Heckhausen, H., & Gollwitzer, P. M. (1987). Thought contents and cognitive functioning in motivational versus volitional states of mind. *Motivation and Emotion, 11*, 101-120.

Higgins, E. T., Strauman, T., & Klein, R. (1986). Standards and the process of self-evaluation: Multiple affects from multiple stages. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior*. New York: Guilford.

Inglehart, M. R., Markus, H., & Brown, D. R. (1988, August). *The effects of possible selves on academic achievement: A panel study*. Paper presented at the International Congress of Psychology, Sydney, Australia.

James, W. (1983). *The principles of psychology*. Cambridge, MA: Harvard University Press. (Original work published 1890)

Kanfer, F. H. (1970). Self-regulation: Research, issues, and speculations. In C. Neuringer & J. L. Michael (Eds.), *Behavior modification in clinical psychology*. East Norwalk, CT: Appleton-Century-Crofts.

Keisler, C. A. (1971). *The psychology of commitment: Experiments linking behavior to belief*. Orlando, FL: Academic Press.

Kihlstrom, J., & Cantor, N. (1984). Mental representations of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 17). Orlando, FL: Academic Press.

Klinger, E. (1975). Consequences of commitment to and disengagement from incentives. *Psychological Review, 82*, 1-25.

Klinger, E., Barta, S. G., & Maxeiner, M. E. (1980). Motivational correlates of thought content, frequency and commitment. *Journal of Personality and Social Psychology, 39*, 1222-1237.

Korn, E. R., & Johnson, K. (1983). *Visualization: The uses of imagery in the health professions*. Homewood, IL: Dow Jones-Irwin.

Kozielecki, J. (1984). Potrzeba hubrystyczna a transgresja. *Przeglad Psychologiczny*, (2).

Kuhl, J. (1985). Volitional mediators of cognition-behavior consistency: Self-regulatory processes and action versus state orientation. In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior*. New York: Springer-Verlag.

Kuhl, J. (1986). Motivation and information processing: A new look at decision making, dynamic change, and action control. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior*. New York: Guilford.

Kuhl, J., & Beckman, J. (Eds.). (1985). *Action control from cognition to behavior*. Berlin: Springer-Verlag.

Little, B. (1983). Person projects: A rationale and methods for investigation. *Environmental Behavior, 15*, 273-309.

Mackay, D. G. (1981). The problem of rehearsal or mental practice. *Journal of Motor Behavior, 13*, 274-285.

Mahoney, M. J., & Avenir, M. (1977). Psychology of the elite athlete: An exploratory study. *Cognitive Therapy and Research, 1*, 135-141.

Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology, 35*, 63-78.

Markus, H. (1983). Self-knowledge: An expanded view. *Journal of Personality, 51*, 543-565.

Markus, H., Cross, S., & Wurf, E. (1990). The role of the self-system in competence. In R. Sternberg & J. Kolligian (Eds.), *Perception of competence and incompetence across the life span*. New Haven, CT: Yale University Press.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*, 954-969.

Markus, H., & Ruvolo, A. (1989). Possible selves: Personalized representations of goals. In L. A. Pervin (Ed.), *Goal concepts in personality and social psychology*. Hillsdale, NJ: Lawrence Erlbaum.

Markus, H., & Sentis, K. (1982). The self in social information processing. In J. Suls (Ed.), *Social psychological perspectives on the self* (Vol. 1, pp. 41-70). Hillsdale, NJ: Lawrence Erlbaum.

Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology, 38*, 299-337.

Marlatt, G. A. (1978). Craving for alcohol, loss of control, and relapse: A cognitive-behavioral analysis. In P. E. Nathan, G. A. Marlatt, & T. Loberg (Eds.), *Alcoholism: New directions in behavioral research and treatment*. New York: Plenum.

McGuire, W. J., & Padawer-Singer, A. (1976). Trait salience in the spontaneous self-concept. *Journal of Personality and Social Psychology, 33*, 743-754.

Mead, G. H.. (1934). *Mind, self, and society*. Chicago: University of Chicago Press.

Mischel, W., Shoda, Y., & Rodriguez, M. L. (1989). Delay of gratification in children. *Science, 244*, 933-938.

Nigro, G. N. (1983). *Improvement of skill through observation and mental practice*. Unpublished doctoral dissertation, Cornell University, Ithaca, NY.

Nuttin, J. (1984). *Motivation, planning, and action: A relational theory of behavior dynamics* (R. P. Lorion & J. E. Dumas, Trans.). Hillsdale, NJ: Lawrence Erlbaum.

Orlick, T. (1986). *Psyching for sport: Mental training for athletes*. Champaign, IL: Leisure Press.

Oyserman, D., & Markus, H. (1990). Possible selves and delinquency. *Journal of Personality and Social Psychology, 59*, 112-125.

Pervin, L. A. (Ed.). (1989). *Goal concepts in personality and social psychology*. Hillsdale, NJ: Lawrence Erlbaum.

Raynor, J. O., & McFarlin, D. B. (1986). Motivation and the self-system. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior*. New York: Guilford.

Richardson, A. (1967a). Mental practice: A review and discussion, Part I. *Research Quarterly, 38*, 95-107.

Richardson, A. (1967b). Mental practice: A review and discussion, Part II. *Research Quarterly, 38*, 263-273.

Rosenberg, M. (1979). *Concerning the self*. New York: Basic Books.

Schlenker, B. R. (1980). *Impression management: The self-concept, social identity, and interpersonal relations*. Pacific Grove, CA: Brooks/Cole.

Schlenker, B. R. (1985). Identity and self-identification. In B. R. Schlenker (Ed.), *The self in social life* (pp. 65-99). New York: McGraw-Hill.

Sherman, R. T., & Anderson, C. A. (1987). Decreasing premature termination from psychotherapy. *Journal of Social and Clinical Psychology, 5*, 298-312.

Steele, C. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 181-227), Orlando, FL: Academic Press.

Stryker, S. (1980). *Symbolic interactionism: A social structural version*. Menlo Park, CA: Benjamin/Cummings.

Stryker, S. (1987). Identity theory: Developments and extensions. In K. Yardley & T. Honess (Eds.), *Self and identity: Psychosocial perspectives* (pp. 89-103). New York: Wiley.

Swann, W. G., Jr. (1983). Self-verification: Bringing social reality into harmony with the self. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self* (Vol. 2, pp. 33-66). Hillsdale, NJ: Lawrence Erlbaum.

Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin, 103*, 193-210.

Uleman, J. S., & Bargh, J. A. (Eds.). (1989). *Unintended thought*. New York: Guilford.

Volpert, W. (1985). The model of the hierarchical-sequential organization of action. In W. Hacker, W. Volpert, & M. Von Cranach (Eds.), *Cognitive and motivational aspects of action*. Berlin: Deutscher Verlagder Wissenschoflen; Amsterdam/New York: Elsevier/North-Holland.

Wegner, D. M., & Schneider, D. J. (1989). Mental control: The war of the ghosts in the machine. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought*. New York: Guilford.

Wegner, D. M., Schneider, D. J., Carter, S. R., & White, T. L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology, 53*, 5-13.

Wicklund, R. S., & Gollwitzer, P. M. (1982). *Symbolic self-completion*. Hillsdale, NJ: Lawrence Erlbaum.

Wright, R. A., Contrada, R. J., & Patane, M. J. (1986). Task difficulty, cardiovascular response, and the magnitude of goal valence. *Journal of Personality and Social Psychology, 51*, 837-843.

Wurf, E. (1988). *Negativity in the self-concept: Self-construal and feedback-seeking*. Unpublished doctoral dissertation, University of Michigan, Ann Arbor.