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SELF-KNOWLEDGE: Its Limits, Value, and Potential for Improvement

Timothy D. Wilson and Elizabeth W. Dunn

University of Virginia, Charlottesville, Virginia 22904-4400;
email: tdw@virginia.edu, edunn@post.harvard.edu

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■ **Abstract** Because of personal motives and the architecture of the mind, it may be difficult for people to know themselves. People often attempt to block out unwanted thoughts and feelings through conscious suppression and perhaps through unconscious repression, though whether such attempts are successful is controversial. A more common source of self-knowledge failure is the inaccessibility of much of the mind to consciousness, including mental processes involved in perception, motor learning, personality, attitudes, and self-esteem. Introspection cannot provide a direct pipeline to these mental processes, though some types of introspection may help people construct beneficial personal narratives. Other ways of increasing self-knowledge include looking at ourselves through the eyes of others and observing our own behavior. These approaches can potentially promote self-knowledge, although major obstacles exist. It is not always advantageous to hold self-perceptions that correspond perfectly with reality, but increasing awareness of nonconscious motives and personality is generally beneficial.

CONTENTS

INTRODUCTION	17.2
MOTIVATIONAL LIMITS TO SELF-KNOWLEDGE	17.2
Definitions of Repression, Suppression, Intentional Forgetting, and Complete Forgetting	17.3
Empirical Evidence for Repression, Suppression, Intentional Forgetting, and Complete Forgetting	17.5
Summary	17.6
NONMOTIVATIONAL LIMITS TO SELF-KNOWLEDGE: DISSOCIATION BETWEEN IMPLICIT AND EXPLICIT PROCESSES	17.7
Implicit Versus Explicit Perception	17.7
Implicit Versus Explicit Motor Learning	17.8
Implicit Versus Explicit Personality	17.9
Implicit Versus Explicit Attitudes	17.10
Implicit Versus Explicit Self-Esteem	17.11
Summary	17.12
INCREASING SELF-KNOWLEDGE	17.12

17.2 WILSON ■ DUNN

Introspection 17.12
Other Routes to Self-Knowledge 17.15
Is It Always Desirable to Improve Self-Knowledge? 17.19
SUMMARY 17.21

INTRODUCTION

How well do people know themselves? What are the major impediments to self-knowledge? Is it always to people’s advantage to try to analyze themselves? Although these are fundamental questions about the nature of the human mind and its ability to know itself, self-knowledge has not been a mainstream topic in psychology. There are many areas of research related to self-knowledge, including the psychoanalytic tradition, personality research in which traits are measured with self-report inventories, and social psychological research on the nature of the self-concept—not to mention the many treatises on self-improvement that occupy substantial shelf space in most bookstores. Self-knowledge has not been a central, organizing topic in empirical psychology, however. There are few courses taught on the topic and few researchers who identify this as the major theme of their research.

One reason for this state of affairs is that investigations of self-knowledge inexorably lead to thorny questions about the limits of consciousness and the nature of the unconscious mental processes, which most psychologists (until recently) have been loathe to examine. For many years, research psychologists artfully dodged these difficult issues, developing sophisticated theories of the self and personality with nary a mention of the word “unconscious.”

Times have changed. It is difficult to pick up a psychology journal without some reference to nonconscious processing or related terms such as implicit versus explicit processes, automaticity, or procedural versus declarative knowledge. As research on the limits of conscious awareness has exploded, compelling questions about self-knowledge have begun to be asked.

This chapter is divided into three parts. First, we review the most commonly cited reason why people lack self-knowledge, namely motivational factors that lead to repression or suppression. Second, we review nonmotivational systemic reasons why people do not have full access to their mental processes, focusing on research that has found dissociations between implicit and explicit mental processes. Third, we discuss ways in which self-knowledge might be increased and whether this is a worthy goal, focusing on research on introspection and self-perception.

MOTIVATIONAL LIMITS TO SELF-KNOWLEDGE

There are several reasons why people are not an open book to themselves. There might simply be too much information—too many pages to keep in mind at one time. Rather than a simple atlas with a well-marked legend, people may be more like

a complex novel with interconnecting story lines, themes, and leitmotifs. Just as literary themes can take extensive analysis (and be open to myriad interpretations), so can it be difficult to unravel the complex themes of the individual psyche. Those unskilled at the art of literary dissection may not succeed in understanding themselves completely.

Perhaps the most common reason cited for failures of self-knowledge is that people are motivated to keep some thoughts and feelings outside of consciousness, usually because they are unpleasant or anxiety provoking. Motivated attempts to avoid unwanted thoughts is one of the central ideas of psychoanalysis, which argues that there is a vast repository of infantile urges that are actively kept out of conscious awareness. Self-knowledge is said to be quite limited, though repression is usually so successful that people do not *know* that it is limited.

Many researchers have attempted to test psychoanalytic ideas under controlled scientific conditions (e.g., McGinnies 1949; for reviews, see Erdelyi 1974, 1985). In recent years there has been renewed interest in the existence of repression, specifically the question of whether people can repress memories of physical and sexual abuse and then recover these memories later in life. A problem in this area of research, however, is that terms such as repression, suppression, and intentional forgetting are used in different ways by different researchers, making it difficult to find common ground. As noted by Erdelyi (1985) this is not a new problem; Freud himself used the term “repression” in different ways over the course of his career.

Definitions of Repression, Suppression, Intentional Forgetting, and Complete Forgetting

A demonstration of repression, we suggest, would have to meet the following five criteria (cf. Kihlstrom 2002): (1) People are motivated to keep thoughts, feelings, or memories outside of awareness; (2) the attempt to keep material out of awareness is itself an unconscious process; (3) people succeed in removing the undesired material from consciousness; (4) the material, once removed from consciousness, still exists in memory and continues to influence people’s thoughts, feelings, or behavior; and (5) the material is recoverable; i.e., people can become aware of it if the repressive forces are removed (see Table 1).

The term suppression has been used to refer to cases in which people consciously attempt to remove a thought from awareness or prevent themselves from expressing a thought or attitude (e.g., Crandall & Eshleman 2003). We are concerned only with the former meaning of the term, because of its relevance to the issue of self-knowledge. Controlling the expression of a thought does not necessarily limit people’s awareness that they have the thought, whereas trying to banish a thought from awareness, if successful, does.

Successful suppression shares all the features of repression except one, namely people’s awareness of the attempt to remove something from awareness

17.4 WILSON ■ DUNN

TABLE 1 Different ways in which people can lack knowledge of their own feelings, thoughts, and memories

	Successful repression	Successful suppression (intentional forgetting)	Complete forgetting	Unsuccessful suppression	Inaccessibility of the adaptive unconscious
1. Are people motivated to keep material out of awareness?	Yes	Yes	Yes	Yes	No
2. Are people aware of their attempt to keep material out of awareness?	No	Yes	Yes	Yes	N/A
3. Do people succeed in removing the material from awareness?	Yes	Yes	Yes	No	N/A
4. Does the material still exist outside of awareness and influence thoughts, feelings, or behaviors?	Yes	Yes	No	N/A	Yes
5. Is the unconscious material recoverable?	Yes	Yes	N/A	N/A	No

(criterion 2). Repression is, in a sense, an early defense system, whereby material is intercepted and blocked before it reaches consciousness (as noted by Erdelyi 1985, Freud did not always argue that repression was unconscious, though this criterion is part of the contemporary psychoanalytic meaning of the term.) If these early defenses fail—for example, if anxiety-provoking sexual or aggressive thoughts succeed in reaching consciousness—then suppression is the next line of defense, whereby people deliberately and consciously attempt to eliminate those thoughts. If they succeed in doing so, then the result is the same as with successful repression: The material is kept out of consciousness but continues to influence people’s thoughts, feelings, and behavior, and is potentially recoverable (see the third column of Table 1). Similarly, intentional forgetting is the case in which people succeed in removing material from memory (i.e., reducing their ability to recall it), though as will be seen shortly, the material is not completely erased from memory and can be recovered under some circumstances.

Complete forgetting is illustrated in the fourth column of Table 1 and is the theoretical case in which people succeed in removing material from memory completely. The material is erased and is no longer present in memory. The fifth column illustrates the case in which attempts to suppress or forget information fail; people do not succeed in removing the unwanted material from consciousness. Table 1 is meant to bring some definitional order to the use of the terms repression, suppression, intentional forgetting, and the like. Whether there is empirical support for these phenomena is another question.

Empirical Evidence for Repression, Suppression, Intentional Forgetting, and Complete Forgetting

There is no doubt that people often want to keep troubling thoughts or feelings from occupying their conscious minds (criterion 1); 99% of college students reported having attempted to suppress thoughts, in an informal survey conducted by Erdelyi & Goldberg (1979; cited in Erdelyi 1993). Are such conscious attempts at suppression successful? A substantial amount of work by Wegner and colleagues indicates that suppression often fails. Suppression requires substantial mental resources, and if people are under cognitive load it can backfire, increasing the accessibility of the unwanted thought (Wenzlaff & Wegner 2000).

Some recent evidence suggests that suppression can be successful when people are not under cognitive load. Anderson & Green (2001) had participants memorize word pairs (e.g., ordeal-roach) and then presented one of the words with the instruction either to recall and think about or suppress thoughts of the associated word. On a subsequent test, participants showed impaired memory for words that they had previously been asked to suppress, even when offered monetary incentives for accurate recall. Similarly, Macrae et al. (1994) asked participants to avoid stereotypical thinking while writing a passage about a typical day in the life of a male skinhead. Their passages were rated as less stereotypical relative to passages written by control participants who had received no special instructions.

The extent to which suppression is generally successful or unsuccessful continues to be debated (e.g., Crandall & Eshleman 2003, Monteith et al. 1998, Wenzlaff & Wegner 2000). If people do succeed in suppressing or forgetting unwanted thoughts, it is clear that the thoughts are not truly gone. It is, of course, virtually impossible to show that any memory has been completely forgotten because this would involve proving the null hypothesis that no trace of the forgotten material exists in memory (see Table 1, column 4). Research has provided clear evidence for the alternative hypothesis, however, that previously suppressed material can continue to exert an effect (criterion 4).

Wegner and colleagues (1987, Wegner 1994) have shown that attempts to suppress a thought can produce a postsuppression rebound effect, whereby the taboo thought comes to mind with even greater frequency after the suppression episode. Research on intentional forgetting has shown that words people are instructed to forget can influence the word associates people generate in a subsequent "unrelated" study (e.g., Basden et al. 1993, Paz-Caballero & Menor 1999). Similarly, participants in Macrae et al.'s (1994) study who had previously been asked to suppress stereotypic thoughts about skinheads were actually faster to recognize stereotype-relevant words on a lexical decision task, and they chose to maintain greater social distance from a skinhead, relative to controls. Thus, thoughts that people have blocked out of consciousness may still influence them without their awareness.

Under the right conditions, people may be able to regain conscious access to material previously blocked out by their attempts to forget or suppress it (criterion 5). For example, Bjork (1989) and Basden et al. (1993) found that people do well on

17.6 WILSON ■ DUNN

recognition tests for words they had previously been instructed to forget. Likewise, participants who had previously engaged in suppression wrote highly stereotypical passages about a different male skinhead after the instruction to suppress was relaxed, demonstrating increased accessibility of the stereotypic material (Macrae et al. 1994).

If people can suppress and then recover individual words and stereotypic thoughts, could they also forget and then remember complex personal memories? Most of the controversy in the recovered memory debate centers on this question. There is no doubt that recovered memories can be false, particularly when other people suggest that the events might have occurred (e.g., Loftus 1997, Mazzoni et al. 2001). There is accumulating evidence that such memories can also be true. Schooler (2001), for example, reviewed several case histories in which people remembered instances of being abused, they claimed to have forgotten these events at some point in their lives, and there was independent corroborative evidence of the abuse having occurred. As Schooler (2001) notes, however, these cases do not necessarily meet the criteria necessary to establish repression. People might never have truly forgotten the events, but instead reclassified or redefined them in a way that they confused with having forgotten it. Thus, the most controversial claim about recoverability—that people can forget traumatic events and then remember them years later—has yet to be established definitively.

What about the second criterion for repression, that the attempt to remove unwanted material from one's mind is itself unconsciously? Although there is relatively little empirical support for this tenet, which distinguishes repression from the related phenomena included in Table 1, there is suggestive evidence. Some research suggests that if people continue to engage in successful suppression of unwanted material (e.g., prejudiced thoughts), then the process can become automatic through practice (Moskowitz et al. 1999, 2000). That is, exposure to a stimulus (e.g., a member of another race or gender) might trigger inhibition automatically and nonconsciously.

Summary

People are commonly motivated to keep material out of consciousness (criterion 1) and can sometimes do so successfully in the short run (criterion 3), though suppression often fails as a long-term strategy. Suppressed material can potentially influence people without their awareness (criterion 4). The material has been shown to be recoverable under the right circumstances (criterion 5), at least in laboratory studies of relatively innocuous material. It is less clear whether attempts to block unwanted material from mind can be triggered unconsciously (criterion 2), which is the critical piece separating repression from the other phenomena, though recent research on chronic egalitarian goals suggests that this process can occur automatically. Thus, a patchwork of studies depicts a mental architecture that would allow repression to occur, though no single study has demonstrated all the necessary criteria to establish the existence of repression definitively. To the extent that people

are motivated to block out thoughts, feelings, or memories, and succeed in doing so, self-knowledge will obviously suffer.

NONMOTIVATIONAL LIMITS TO SELF-KNOWLEDGE: DISSOCIATION BETWEEN IMPLICIT AND EXPLICIT PROCESSES

A more pervasive limit on self-knowledge, we suggest, is the fact that much of the mind is inaccessible to conscious awareness. Empirical research has increasingly documented the role of nonconscious mental processing (e.g., Kihlstrom 1987, Nisbett & Wilson 1977, Wilson 2002). A new view of unconscious processing has emerged that differs considerably from the Freudian, psychoanalytic version. The mind is viewed as a collection of processing modules that operate efficiently outside of awareness and may have existed before consciousness evolved. These processes are involved in perception, attention, learning, evaluation, emotion, and motivation.

Wilson (2002) referred to these nonconscious processes as the “adaptive unconscious” and specified three main ways in which they differ from the Freudian unconscious. First, mental processes are unconscious because of the architecture of the mind, rather than because of repression or suppression. That is, there are no motivational forces preventing people from knowing their thoughts and feelings; instead, much of the mind is simply inaccessible to consciousness (see the last column of Table 1). Second, the unconscious is much more than the repository of the primitive, infantile drives and desires discussed by Freud. The mind operates quite efficiently by relegating to the unconscious “normal” processes of perception, attention, learning, and judgment. Third, the modern approach makes different assumptions about people’s ability to view their unconscious states. Rather than assuming that such states are “recoverable” (see criterion 5 in Table 1), it assumes that a large part of mental functioning is inaccessible to conscious awareness, no matter how much people introspect.

Put differently, modern research on unconscious processes paints a simpler picture than models of repression and suppression. Only one of the criteria necessary to demonstrate repression is applicable, namely criterion 4 (slightly restated), that unconscious processes exist and influence people’s thoughts, feelings, or behavior, independent of conscious processes. There is no need to demonstrate people’s motives for repression or suppression; the assumption is that a great deal of mental processing is simply inaccessible to conscious scrutiny. Consistent with this assumption, a good deal of independence between nonconscious and conscious processing has been found in many types of psychological functioning.

Implicit Versus Explicit Perception

Few people would claim that they have direct knowledge of how their perceptual systems operate, such as how they perceive depth in their visual fields. People do

17.8 WILSON ■ DUNN

sometimes make conscious, deliberate judgments about the nature of the physical world, however, such as judging the distance between two points or the incline of a hill when setting out for a hike. Recent research on visual perception has revealed a disconnect between such conscious perceptions and the nonconscious visual system that guides people's behavior.

When walking across uneven terrain, for example, people are quite adept at judging the incline of the ground in front of them and adjusting their gait accordingly. They do so quickly and nonconsciously; people can walk without stumbling while thinking about something else entirely. When asked to make explicit judgments about inclines and distances, however, people make systematic errors, often underestimating distances and overestimating slants (Bhalla & Proffitt 2000, Creem & Proffitt 1999, Proffitt et al. 2003). Further, explicit judgments of distance and slant are easily biased by people's level of fatigue, physical fitness, and health status, whereas implicit judgments (as measured by visually guided action) are not (Bhalla & Proffitt 2000). For example, going for a long run inflates joggers' verbal estimates of a hill's slant, but such fatigue does not affect their ability to accurately adjust a tilt board to match the slant of the hill (Proffitt et al. 1995).

Given that people can assess accurately the steepness of a hill using a tilt board, why do their explicit reports of slant reveal consistent biases? To the extent that conscious visual awareness allows people to plan and modulate their exertion of effort, it may be useful for explicit judgments to reflect one's own physical condition. In contrast, visually guided action must reflect a pure, veridical evaluation if we want to make it up a hill without doing backward somersaults (Bhalla & Proffitt 2000).

Implicit Versus Explicit Motor Learning

But suppose we do want to make a backward somersault. How would our implicit and explicit knowledge allow us to complete this gymnastic feat successfully? Research on motor skill learning suggests that explicit knowledge would guide our somersaults initially, as we imitated a friend or followed a coach's instructions, but that after continued practice implicit knowledge would eventually guide our tumbling (Fitts 1964, Jenkins et al. 1994, Logan 1985). In fact, after extended practice, trying to reassert conscious control over our somersaulting technique might even impair performance (Baumeister 1984, Kimble & Rezabek 1992; see Baumeister & Showers 1986 for a review).

Because implicit knowledge can guide motor skill learning independently of explicit knowledge, amnesiacs can learn complex motor skills, even though they may have no memory of having practiced the skill (Gabrieli 1998). Similarly, normal college students respond faster to stimuli on a computer screen when the positions of the stimuli are determined by a regular, repeating sequence than when the positions are determined randomly, even if they show no awareness or explicit learning of the sequence (Nissen & Bullemer 1987, Willingham & Goedert-Eschmann 1999; but see Shanks & St. John 1994).

Over time, some participants may gain explicit knowledge of the sequence and this knowledge may then guide their behavior, which had previously been guided by implicit knowledge (Willingham 1998). Although the precise relationship between explicit and implicit motor skill learning is unknown, there is some evidence that explicit and implicit learning may be acquired in parallel as one performs a motor task (Willingham & Goedert-Eschmann 1999). While explicit processes allow the gymnast to comply with a coach's demands that she straighten her legs in completing the somersault, implicit processes record this movement, facilitating its future execution.

Implicit Versus Explicit Personality

The study of human personality has been approached from many angles, including psychoanalysis, behaviorism, behavioral genetics, and phenomenology. With the exception of psychoanalysis, few of these approaches have been concerned with nonconscious psychological processes that determine a person's "characteristic behavior and thought," to use Allport's definition of personality (1961, p. 28). In recent years, researchers in diverse areas of personality have begun to investigate the role of implicit personality variables and their relationship to explicit measures.

As in research on perception and motor learning, a striking divergence between implicit and explicit measures has been found (for reviews see Wilson 2002, Wilson et al. 2000). For example, people's chronic motives, such as their needs for achievement, affiliation, and power, have traditionally been measured with the Thematic Apperception Test (TAT), in which people are asked to tell stories about people in photographs, and the content of these stories is systematically coded for the presence of various motives. McClelland et al. (1989) argued that the motives uncovered by this technique are implicit, in that they do not exist at an explicit, conscious level. In fact, explicit, self-report measures of the same motives typically correlate at a very low level with the motives revealed by the TAT (Spangler 1992). Such low correlations, of course, could stem from the fact that one or both measures are low in reliability or validity. McClelland et al. (1989) argued, instead, that the measures tap valid but different motivational constructs. Implicit motives "automatically influence behavior without conscious effort" (pp. 698–699), whereas "self-attributed motives" guide more deliberative, effortful behaviors.

Implicit measures of personality have also been found to correlate poorly with explicit measures in other domains, including dependence (Bornstein 1995), attachment (Bartholomew & Shaver 1998, Wilson et al. 2000), and explanatory style (Peterson & Ulrey 1994). Robinson et al. (2003) found substantial independence between self-reported traits (e.g., of extraversion) and a new implicit personality measure, the speed with which people categorize the valence of information (e.g., people's response time on a task in which they classify a word as neutral or negative in meaning). In some studies, implicit and explicit measures of traits (e.g., shyness) do correlate to some degree, but they uniquely predict different kinds of behavior and a dissociation model fits the data well (Asendorpf et al. 2002).

17.10 WILSON ■ DUNN

Implicit Versus Explicit Attitudes

Social psychologists traditionally assumed that people have one attitude at a time toward an attitude object and are able to report this attitude. Recently, however, there has been an explosion of research on implicit attitudes (Blair 2002, Brauer et al. 2000, Devine 1989, Dovidio et al. 1997, Fazio & Olson 2003, Greenwald & Banaji 1995, Wilson et al. 2000). One problem with this literature is that a number of different definitions of implicit attitudes have been offered. All share the view that implicit attitudes are automatic responses, but as noted by Bargh (1994), many hybrids of automatic processes vary on the dimensions of conscious access, intentionality, controllability, and effort. Different definitions of implicit attitudes focus on some of these dimensions more than others do. Greenwald & Banaji (1995) emphasized a lack of awareness of the origins of the attitude, such as a failure to recognize that one's positive evaluation results from repeated exposure to an attitude object. Fazio et al. (1995) emphasized the lack of controllability and effort involved in the expression of implicit attitudes, while arguing that the attitude itself is usually conscious (see Fazio & Olson 2003). Gaertner & Dovidio (1986) argue that at least at times, the attitude itself, such as prejudiced feelings, can exist outside of awareness. Wilson et al. (2002) emphasized a lack of awareness of the origin of the attitude and the unintentional and uncontrollable activation of that attitude when the attitude object is encountered, and suggested that awareness of the attitude itself varies according to the type of implicit attitude involved. Brauer et al. (2000) distinguished between two types of implicit prejudice, the extent to which prejudiced attitudes are activated automatically, and the extent to which they are applied when judging members of the target group.

As in the other areas we have reviewed, many studies have found low correlations between explicit and implicit measures of attitudes (e.g., Dovidio et al. 1997, Fazio et al. 1995), though some have found higher degrees of correspondence (e.g., Blair 2002, Nosek et al. 2002). Two main reasons for a lack of correspondence have been discussed (Nosek & Banaji 2002). The first is that people have only one attitude toward an attitude object but are often motivated to distort or disguise that attitude when asked to report how they feel. Implicit measures are viewed as ways to bypass these self-presentational motives because people have less control over their responses on these measures. Fazio et al. (1995), for example, called their implicit priming measure a "bona fide pipeline," reflecting their view that it taps attitudes untainted by self-presentation. According to the self-presentation view implicit and explicit measures will reveal different attitudes in domains in which people are motivated to hide or distort their views (e.g., a prejudiced person who wants to appear unprejudiced), but will reveal the same attitude in domains in which people are willing to report how they really feel (e.g., attitudes toward politics or movies; Greenwald et al. 1998).

The second position argues that there can be a dissociation between implicit and explicit attitudes toward the same attitude object, due to different systems of evaluation. Wilson et al. (2000) endorsed this view in their model of dual attitudes,

arguing that neither implicit nor explicit attitudes are “true” or “bona fide,” rather, each can exist and direct behavior (albeit different kinds of behavior; see also Dovidio et al. 1997). According to this view, the two systems could in principle evaluate an attitude object in similar ways, resulting in concordance, but often come up with different evaluations, resulting in discordance. In support of the separate systems view, discordance has been found in domains in which self-presentational concerns would seem to be low, such as attitudes toward fruit and bugs (Nosek & Banaji 2002, Wilson et al. 2000).

Implicit Versus Explicit Self-Esteem

In recent years several implicit measures of self-esteem have been developed. As in the other areas we have reviewed, discordance between these measures and explicit measures have often been found. Implicit self-esteem is generally viewed as an efficient evaluation of the self that occurs unintentionally and without awareness, in contrast to explicit self-esteem, which represents a more conscious, deliberative assessment of the self; Greenwald & Banaji (1995, p. 11) defined implicit self-esteem as “the introspectively unidentified (or inaccurately identified) effect of the self-attitude on evaluation of self-associated and self-dissociated objects.”

In an early demonstration of this phenomenon, Nuttin (1985) found that people consistently preferred letters that were contained in their own names. Subsequent research has demonstrated that this “name-letter effect” emerges across a variety of cultures and languages and cannot be easily accounted for by alternative explanations, such as mere exposure (Koole & Pelham 2003). Importantly, participants who exhibit the name-letter effect generally do not report having thought about their own names in evaluating the letters, which suggests that this effect occurs without conscious awareness (Koole et al. 2001). This subtle preference for name-letters may influence major life-decisions; people are disproportionately likely to choose careers and home cities whose names resemble their own (e.g., Larry becomes a lawyer in Lawrence; Pelham et al. 2002).

Evidence for implicit self-esteem has also been found using response-time measures designed to assess the degree of association between the self and positive versus negative concepts. On the Implicit Association Test, for example, Greenwald & Farnham (2000) found that participants were much faster to respond when self-relevant items (e.g., their birth month) were paired with pleasant words than when self-relevant items were paired with unpleasant words.

Using a wide range of measures, researchers have consistently observed a dissociation between implicit and explicit self-esteem, with correlations ranging from zero to weakly positive (Bosson 2003, Bosson et al. 2000, Greenwald & Farnham 2000, Jordan et al. 2003, Spalding & Hardin 1999). When, if ever, do implicit and explicit self-esteem correlate with one another? In contrast to the common intuition that we may unearth our deepest, subconscious self-relevant feelings through thoughtful introspection, explicit self-evaluations are more likely to be concordant with implicit self-esteem when motivation and capacity to engage in deliberation

17.12 WILSON ■ DUNN

are lacking; participants' explicit judgments of whether positive and negative traits described themselves were related to their scores on the name-letter test only when these self-judgments were made quickly or under cognitive load (Koole et al. 2001). Conversely, favoritism for name-letters evaporates when participants are asked to consider their reasons for liking the letters, suggesting that engaging in deliberation steers people away from their immediate, intuitive response in making self-relevant judgments (Koole et al. 2001).

In line with research on the predictive validity of implicit and explicit attitudes more broadly, implicit and explicit measures of self-esteem predict distinct types of behavior. For example, during an interview about their emotional health, participants' self-reported anxiety was related to their explicit self-esteem, whereas their nonverbal anxiety (as rated by the interviewer) was related to implicit self-esteem (Spalding & Hardin 1999).

Summary

Research on such disparate topics as perception, motor learning, personality, attitudes, and self-esteem reveals a frequent discordance between implicit and explicit measures of internal states. There are several reasons why this might be the case, such as people's desire to distort their attitudes on explicit measures due to self-presentational concerns. The discordance has been found even in domains in which self-presentational concerns are low, however. There is substantial evidence that implicit measures often tap mental processes that are nonconscious and inaccessible to introspection (Wilson 2002). Whereas it is relatively unsurprising that people lack conscious access to the mental processes that allow them to judge slant or perform somersaults, the apparent lack of access to one's traits, attitudes, and self-concept is noteworthy. Currently researchers are going beyond demonstrations of discordance and are asking important theoretical questions about the conditions under which discordance will occur (e.g., Nosek 2002) and the consequences of discordance (e.g., Robinson et al. 2003).

INCREASING SELF-KNOWLEDGE

Given the limits to self-knowledge we have reviewed, in what ways can people seek to know themselves better? Is this always a desirable goal? Perhaps the most common way in which people attempt to decipher their feelings, judgments, and motives is introspection.

Introspection

A common metaphor for introspection is that it is like an archaeological dig, whereby people attempt to excavate their hidden mental states. Some aspects of our mental lives are near the surface and easy to examine, whereas others lie under

multiple strata and require considerable excavation. Freud, an avid collector of antiquities, was fond of the archeological metaphor, and used it often to describe the process of psychoanalysis, in which considerable digging is often required in order to reveal unconscious wishes and drives.

The more contemporary view is that the vast adaptive unconscious is dissociated from conscious awareness and can never be directly viewed via introspection. Introspection reveals the contents of consciousness, such as at least some of people's current thoughts and feelings. It cannot, however, no matter how deeply people dig, gain direct access to nonconscious mental processes. Instead, people must attempt to infer the nature of these processes, by taking what they know (e.g., their conscious states) and filling in the gaps of what they do not know (their nonconscious states) by constructing a coherent narrative about themselves (McAdams 1993, 2001).

According to this view, introspection is less a matter of unearthing hidden feelings and motives and more a constructive process of inferring what these states might be. Several areas of research on different kinds of introspection can be understood within this framework. With some types of introspection the construction process goes awry and has negative consequences. With others, people succeed in constructing a more coherent narrative than they held before, with beneficial consequences.

EFFECTS OF ANALYZING THE REASONS FOR ONE'S FEELINGS AND ATTITUDES One kind of introspection that can go awry is thinking about the reasons why we feel the way we do. It might seem like a relatively easy matter to access and report such reasons (e.g., why we like or dislike different models of cars), and that such an analysis would sharpen decision making (e.g., which car we should purchase). There is considerable evidence, however, that people have limited access to the reasons for their evaluations and that the process of generating reasons can have negative consequences. Analyzing reasons has been shown to lower people's satisfaction with their choices (Wilson et al. 1993), lower people's ability to predict their own behavior (Wilson & LaFleur 1995), lower the correlation between people's expressed feelings and their later behavior (Wilson & Dunn 1986, Wilson et al. 1984), lower the correlation between people's evaluations of a product and expert evaluations of it (Wilson & Schooler 1991), and lower the accuracy of sports fans' predictions about the outcome of basketball games (Halberstadt & Levine 1999).

Why does analyzing reasons have these effects? Consistent with the idea that introspection is often a constructive process, people do not have complete access to the actual reasons behind their feelings, attitudes, and judgment and thus generate reasons that are consistent with cultural and personal theories and are accessible in memory (Nisbett & Wilson 1977). But, people do not recognize that the reasons they have just generated are incomplete or inaccurate, and thus assume that their attitude is the one implied by these reasons. Put differently, people construct a

17.14 WILSON ■ DUNN

new attitude, at least temporarily, that is consistent with the reasons that happen to come to mind, but which might not correspond to their implicit attitudes (Wilson et al. 1989, 1995, 2000).

EFFECTS OF FOCUSING ON ONE'S FEELINGS Rather than analyzing the reasons for an attitude perhaps people should focus on the nature of the attitude itself. Several studies have purported to find that focusing on how one feels (as opposed to why one feels that way), increases the accessibility of people's feelings and increases the extent to which these feelings predict people's subsequent behavior (e.g., Carver & Scheier 1981, Fazio et al. 1982, Snyder 1982, Wicklund 1982). This kind of self-focus might help sharpen and clarify people's feelings. However, Silvia & Gendolla (2001) reached a different conclusion. They argued that increased self-awareness, induced by focusing one's attention inward, increases people's motivation to act consistently with their attitudes, and does not necessarily increase people's awareness of their feelings.

RUMINATION WHEN DISTRESSED Another kind of introspection that can be harmful is rumination, whereby people in negative moods repetitively think about how they feel and why they feel that way, without taking action to improve their situation. Research has found that this type of introspection focuses people's attention on negative aspects of their pasts and futures, leads to self-defeating, negative interpretations of their problems, and lowers their ability to find effective solutions to their problems (Lyubomirsky et al. 1998, Nolen-Hoeksema 2000, Ward et al. 2003). One problem with rumination is that it focuses people's attention on negative information about themselves, providing more grist for a pejorative self-narrative.

WRITING ABOUT TRAUMATIC EVENTS Surely, not all forms of introspection are harmful. Many studies by Pennebaker and colleagues have demonstrated that writing about emotional or traumatic personal experiences has positive effects on health (e.g., Pennebaker et al. 1988), academic performance (e.g., Pennebaker et al. 1990), and job outcomes (Spera et al. 1994; see Pennebaker 1997 for a review). Participants are typically instructed to spend 15 to 30 minutes over three to five days writing about important emotional issues.

Why does this exercise promote physical and mental well-being, while engaging in rumination has negative consequences? Pennebaker's writing exercise may provoke ruminative thoughts initially, but people may gain greater understanding of the problem over the course of writing, thereby reducing intrusive thoughts and worries. Indeed, combining six previous studies, Pennebaker et al. (1997) found that participants who exhibited an increased use of language related to causation (e.g., *infer*) and insight (e.g., *understand*) over the course of writing exhibited greater positive effects of the writing exercise.

In coding transcripts of interviews with recently bereaved gay men, Nolen-Hoeksema et al. (1997) distinguished between thoughts reflecting rumination

versus self-analysis. Rumination and self-analysis were negatively correlated, and rumination was associated with more negative outcomes than self-analysis overall. Engaging in more self-analysis was associated with greater well-being in the short term, but also with a relatively slow recovery over the long term.

OTHER KINDS OF INTROSPECTION Perhaps people can detect their nonconscious dispositions and motives by vividly imagining a future situation and attending to how it would make them feel. Suggestive evidence for this possibility was found in studies by Schultheiss & Brunstein (1999) that examined the relationship between people's implicit and explicit motives. Before being placed in situations that were relevant to people's implicit power motives (e.g., playing a competitive video game), some participants took part in a goal-imagery procedure in which they listened to detailed tape-recorded descriptions of the situations and imagined how they were likely to feel. Compared to control participants, those who did the goal-imagery exercise showed a high correspondence between their implicit and explicit motives, as if they consciously recognized the extent to which the situations were relevant to their implicit motives. The explicit motives of control participants, in contrast, were independent of their implicit motives. Thus, vividly imagining an upcoming situation might allow people to "sample" feelings triggered by their unconscious motives and attitudes.

SUMMARY The research we have reviewed is consistent with the interpretation that introspection does not provide a direct pipeline to nonconscious mental processes. Instead, it is best thought of as a process whereby people use the contents of consciousness to construct a personal narrative that may or may not correspond to their nonconscious states. Introspection has negative consequences to the extent that it focuses people's attention on unrepresentative data about themselves, and causes people to construct incorrect or incomplete narratives. People who analyze the reasons for their attitudes, for example, often focus on incomplete information and construct new attitudes that are inaccurate. People who ruminate when distressed focus on negative information about themselves and often become more depressed. Introspection can be beneficial if it helps people make sense out of traumatic events that were difficult to explain; by constructing a more meaningful, coherent narrative about the events, people may put the events behind them and achieve more beneficial outcomes.

Other Routes to Self-Knowledge

If introspection is of limited use in accessing one's unconscious states, how can people improve self-knowledge?

SEEING OURSELVES THROUGH THE EYES OF OTHERS A potential source of self-knowledge is other people. By carefully observing how other people view us, and noticing that their views differ from our own, we could revise our self-narratives

17.16 WILSON ■ DUNN

accordingly. A description of this process, called symbolic interactionism, has a long tradition in sociology and social psychology, dating to Cooley (1902) and Mead (1934).

This process has the potential to teach us about our nonconscious states, to the extent that other people assess us by observing behaviors that emanate from our nonconscious traits and motives. Some studies, for example, find that (a) people often disagree with their peers about their own personality traits; e.g., Mary's view of how agreeable and conscientious she is differs from how agreeable and conscientious her friends think she is; (b) peers often agree among themselves about the target's personality, suggesting that they are picking up on something valid; e.g., Mary's friends are likely to agree with each other about how agreeable and conscientious Mary is; and (c) in at least some studies, peers' views of the target predict the target's behavior better than the target's self-views; e.g., Mary's friends' judgments of her personality correlate more with Mary's behavior than does Mary's view of her own personality (Kenny 1994, Kolar et al. 1996, Spain et al. 2000).

One interpretation of these findings is that Mary's self-views are based on a self-narrative that does not fully capture her nonconscious personality traits. Her friends might have based their views of Mary on observations of her past behavior that emanated from these nonconscious traits. To the extent that her future behavior emanates from these same traits, her friends will make better predictions than she will. In order to improve the accuracy of her self-narratives, Mary could try to see herself through the eyes of her friends, realize that they view her differently than she views herself, and revise her narrative accordingly.

Several studies, however, call into question people's ability to detect accurately how other people view them, when those views differ from their own (Felson 1993, Kenny & DePaulo 1993, Klonsky et al. 2002, Shrauger & Schoeneman 1979). Rather than taking an objective look at how other people view them and noticing the fact that this view might differ from their own, people often assume that other people see them the way they see themselves (Kenny & DePaulo 1993). Deciphering others' views may also be difficult because people often try to hide their negative assessments, out of politeness or a desire not to hurt someone's feelings. Finally, as with any theory, there is a confirmation bias with self-views, whereby people are more likely to notice and recall instances in which other people seem to share their views than instances in which they do not.

Even if we did recognize that other people viewed us differently than we view ourselves on a particular dimension, it is not always clear who is correct. If Mary realizes that Jason thinks she is undependable, who is to say whether he is more correct than she is? It is possible that Jason is correct, to the extent that his impression is based on careful observations of Mary's past behavior. Surely, however, there are times when people know themselves better than their peers know them.

The extent to which people could better detect how others view them, and decide wisely when it was best to adopt the others' view or maintain their own

self-theories, is not clear. Nor is it clear that it is always to people's advantage to adopt others' views, even when they are more accurate (a point we will return to shortly). The obstacles to using others as a route to self-knowledge are likely to be formidable.

INFERRING OUR NONCONSCIOUS STATES FROM OUR BEHAVIOR If Mary has a faulty view of her own personality, and often acts contrary to this view, there might be a simpler way for her to improve her self-knowledge. Rather than trying to see herself through her friends' eyes, she could observe her own behavior. According to self-perception theory, inferring our internal states from our behavior is a major source of self-knowledge (Bem 1972). To the extent that people's internal states are "weak, ambiguous, or uninterpretable" (Bem 1972, p. 5), people infer these states by observing their behavior and the conditions under which the behavior occurs. If people notice that they are constantly late for appointments, for example, they might rightly infer that they are not as conscientious as they thought. If they see themselves eating a lot of clam dip, and can find no compelling external reason for doing so, they infer that they must like the dip.

Perhaps people can gain knowledge of their nonconscious traits, attitudes, and motives in this manner. To the extent that some of their behavior is driven by these states, people can use these behaviors as a clue to their hidden dispositions. People could discover their nonconscious prejudice toward a minority group, for example, by observing the fact that they avoid contact with members of this group or treat them negatively.

Two nuances to the self-perception process, however, complicate its use as a route to self-knowledge. First, as noted by Wilson (2002), there is an unresolved ambiguity about whether people reveal unconscious states by observing their behavior (which Wilson called self-revelation) or mistakenly infer states that did not exist before (which Wilson called self-fabrication). The self-revelation possibility holds that people had an internal state of which they were not fully aware (e.g., a love of clam dip), which only became conscious when people observed their behavior (eating their fourth portion). Few proponents of self-perception theory have espoused this position, because it would require them to endorse the existence of unconscious attitudes and evaluations—a claim that many theorists were adverse to make. Bem (1972) himself argued that "such claims can edge dangerously close to metaphysics" and "should surely be resisted mightily until all other alternatives, save angels perhaps, have been eliminated" (p. 52).

The self-fabrication possibility holds that people did not previously hold an internal state of which they were unaware, but instead mistakenly inferred the existence of a state that was not actually present. People might mistakenly infer that their fourth portion of clam dip is a sign they love it, when they are really eating so much of it to please their grandmother, who keeps coming around with the hors d'oeuvres tray and telling them that they look too thin. This would be an example of the fundamental attribution error, whereby people underestimate the effects of external factors on their behavior (their hovering grandmother) and misattribute

17.18 WILSON ■ DUNN

their actions to an internal state (their love of clam dip; see Jones 1990, Ross & Nisbett 1991).

Interestingly, most studies on self-perception theory are examples of self-fabrication and not self-revelation. In the typical study, the experimenter subtly induces people to act in a certain way, such as pressuring people to agree to go a street corner and get signatures on a petition to reduce air pollution. Rather than correctly inferring that they did so because of the experimenter's arm-twisting, people infer that they must feel especially strong about the issue (Kiesler et al. 1969). In other studies, people are induced to attribute their physiological arousal (or signs of it) to the existence of an emotional state such as fear, anger, or sexual attraction (e.g., Schachter & Singer 1962, Zillmann 1978). Valins (1966), for example, asked men to view pictures of scantily clad women while listening to the amplified sound of their heart beating. During some pictures, the men heard their heart rate increase rapidly, and they inferred that these were the pictures that they especially liked. In fact, the sounds they heard were not their heart rates but a prerecording. Thus, the men were induced to infer an internal state (preferences for certain pictures) that had not previously existed.

Most studies on self-perception theory involve self-fabrication, and not self-revelation, because of methodological constraints. In order to demonstrate self-revelation participants would have to be found who had a specific, nonconscious attitude (e.g., a preference for clam dip of which they were unaware), and the conditions under which they inferred the existence of that state studied—a formidable task. It is much easier to induce people to behave in a certain way (e.g., volunteer to collect signatures on a petition) and then get them to mistakenly think this behavior reflects a previously existing internal state (self-fabrication).

It is getting easier to demonstrate self-revelation with the invention of new implicit measures, such as those discussed earlier. As noted, one explanation for the discordance between implicit and explicit measures of attitudes is that people are unaware of the implicit attitude. It may be easier to examine the question of when people will infer the existence of the implicit state, such as having the opportunity to observe their behavior toward the attitude object. Thus, although most research on self-perception theory has examined self-fabrication, self-revelation may also occur.

Such a route to self-knowledge is not easy, because people would need to be relatively certain that the behavior in question is driven by an implicit state and not, for example, by some aspect of the situation (e.g., the hovering grandmother), and be able to put aside their explicit theories about how they feel. As noted earlier, people often view their internal states through the lens of their self-narratives, which might make it difficult to notice and remember behaviors that are inconsistent with these narratives.

A second nuance to self-perception theory concerns people's awareness of the inference process itself. In order to use the self-perception process as a route to self-knowledge, people would need to do it consciously and deliberately; vowing, for example, to keep closer track of how they act in the presence of minority group

members to detect better their level of prejudice. There is considerable evidence, however, that the self-perception process is itself quick and nonconscious. Nisbett & Wilson (1977) reviewed several studies in which people did not seem to be aware of the kinds of inferences they were drawing about their internal states by observing their behavior. In Schachter & Singer's (1962) study of emotion, for example, in which people were given shots of epinephrine and induced (in some conditions) to attribute their subsequent arousal to emotional sources, it is unlikely that people consciously thought, "Gee, I'm feeling kind of revved up; I wonder why? Let's see, it could be that shot, but the experimenter told me it would not have any side effects. Hey, the other participant sure seems angry about this questionnaire we are filling out. Oh, I see, I guess I'm angry too." Instead, people appear to make rapid, nonconscious inferences about their internal states by observing their behavior and the surrounding situation.

Even if the self-perception process often occurs nonconsciously, there is no reason we cannot try to perform it consciously as well. The greatest potential for increasing self-knowledge may lie in reminding ourselves to be better observers of our own behavior and to take the time to examine our actions (e.g., toward minority group members) more carefully. By so doing, people may be able to construct self-narratives that correspond more closely to their adaptive unconscious.

Is It Always Desirable to Improve Self-Knowledge?

Although obtaining self-knowledge seems desirable, there are physical and mental benefits associated with maintaining slight or moderate positive self-illusions, such as believing that one is a little more generous, intelligent, and attractive than suggested by a realistic analysis (Armor & Taylor 1998, Baumeister 1989, Taylor & Brown 1988). People who believe they are better off than they really are may be able to deal with difficult or frightening situations more effectively. HIV-positive men who showed an optimistic bias, in believing that they were relatively unlikely to develop AIDS, were more apt to engage in healthy behaviors (e.g., exercise, safe sex) than their more realistic counterparts (Taylor et al. 1992). Thus, holding inflated views of one's personal characteristics and future prospects may promote positive behavior and successful coping, particularly in situations that might be terrifying or overwhelming if viewed realistically.

Whereas holding positive expectations about one's own capacities and future outcomes may increase motivation, indulging in pure fantasy may undermine motivation (Oettingen 1996). Obese women at a weight loss clinic were asked to estimate how likely they were to achieve their weight loss goals (providing a measure of positive expectations) and to rate their emotional responses to imaginary scenarios such as seeing an old friend after completing the weight loss program (providing a measure of weight-related fantasy). Holding high expectations of future weight loss was positively associated with successful goal attainment, whereas engaging in positive fantasies about having a slim figure was negatively associated with goal attainment; positive expectations may help to lay the groundwork

17.20 WILSON ■ DUNN

for envisioning and taking steps toward achieving a goal, while fantasizing may impair this process by focusing attention on the outcome rather than the means (Oettingen & Wadden 1991). Positive self-illusions, then, may be valuable to the extent that they remain tied to reality and foster realistic planning. Armor & Taylor (1998) argue that optimism most often takes this beneficial form. For example, people consistently underestimate how long it will take them to complete tasks, displaying optimism, but their estimated times are highly correlated with their actual times, displaying a clear link to reality (Buehler et al. 1994).

Though we acknowledge the benefits of positive illusions, we suggest that accurate self-knowledge is generally a beneficial quality. Often, gaining accurate knowledge does not necessitate puncturing a positive self-balloon. Sometimes people have overly negative views of themselves, and they would be better off recognizing that they have more potential than they think as a public speaker or guitar player. Other times people may not realize which of two positive traits better describes them; they may believe incorrectly that they have more potential as a tennis player than as a musician. In such cases, people's conscious goals and self-views are out of sync with their nonconscious motives and personality, and gaining better knowledge of the nonconscious self should be valuable.

Although research on well-being and self-knowledge is limited, there is some evidence that people are happier when their conscious and nonconscious goals correspond than when they do not. Brunstein et al. (1998) compared people's implicit needs for achievement, power, affiliation, and intimacy, as assessed by the TAT, to explicit, self-report measures of these same motives. On average, people showed little correspondence between their implicit and explicit motives. The people who did, however, reported greater emotional well-being than people whose goals were inconsistent. It may be to people's advantage to develop conscious goals that correspond at least somewhat with the motives of their adaptive unconscious (Schultheiss 2001, Schultheiss & Brunstein 1999).

Similarly, discrepancies between explicit and implicit self-esteem may cause problems, especially the case in which people have high explicit but low implicit self-esteem. Participants who exhibit this dissociation would likely appear anxious during interpersonal interactions while failing to recognize that they were conveying this impression. Due to this lack of awareness, they might be unmotivated to compensate for their anxious appearance, thereby precluding the recruitment of self-presentational strategies (Spalding & Hardin 1999). Indeed, participants who showed an implicit/explicit dissociation of this sort were rated lower in extraversion and were perceived as getting sick more often by their close friends (Bosson 2003). Robinson et al. (2003) found that participants who exhibited a dissociation between implicit and explicit self-esteem reported less pleasant affect than their more congruent counterparts; interestingly, participants who were low in explicit self-esteem were actually happier if they also held low (versus high) implicit self-esteem. Thus, the failure of self-knowledge in this central evaluative domain may have important consequences for interpersonal relationships, social perception, and health.

SUMMARY

Maintaining mild positive illusions can be beneficial, and increasing self-knowledge in these instances is not a desirable goal. Often, however, it is to people's advantage to have at least some awareness of their nonconscious traits, attitudes, and self-concepts. How can people gain such insight? One approach is to reduce attempts to repress or suppress unwanted thoughts.

Although there is piecemeal evidence for the criteria necessary to demonstrate the existence of repression, no study has demonstrated all the criteria simultaneously and it thus remains an elusive phenomenon to nail down empirically. There is better evidence for successful short-term suppression and intentional forgetting, though in neither case are the unwanted thoughts and feelings erased completely, and these efforts might backfire in the long run.

A more common source of self-knowledge failure, we suggest, is the fact that the pervasive adaptive unconscious is inaccessible to consciousness. Introspection is thus of limited use to gain self-knowledge, at least directly. Some forms of introspection are beneficial by helping people construct a coherent personal narrative, even if they do not provide a direct pipeline to unconscious processes. Another approach is to try to see ourselves through the eyes of other people, and if their view differs from ours, consider the possibility that they are correct. The obstacles to this route to self-knowledge, however, are formidable (e.g., recognizing that others hold views different from our own). Making conscious attempts to observe our behavior more carefully, and determine whether it is a reflection of parts of ourselves of which we are unaware, may be easier.

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17.24 WILSON ■ DUNN

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17.26 WILSON ■ DUNN

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