

The Illusion of Will in Organizational Behavior Research: Nonconscious Processes and Job Design

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Abstract

Theorizing and research in organizational behavior implicitly or explicitly assumes that behavior is the product of conscious will. However, an extensive body of literature suggests that much of human behavior is automatic and that nonconscious thoughts and feelings are primary drivers of reactions and behavior. Relying on propositions in use in job design theory and research as a critical case in point, the author reviews the literatures on automatic thought and nonconscious emotions and their implications. Based on these literatures, the author develops alternative propositions for job design theory and research that are based on more realistic assumptions about the mind and human functioning. In addition to discussing implications of nonconscious processes for job design, the author draws broader implications for the field of organizational behavior.

Keywords

affect/emotions, information processing, job design

The field of organizational behavior rests on the assumption that human behavior in organizations is, for the most part, the product of conscious will. That is, organizational members are assumed to consciously react to the design of their jobs, make decisions, form attitudes and judgments, perform behaviors, and engage in a wide variety of activities with deliberate forethought. Conscious thoughts form the basis for conscious decisions, behaviors, and acts; what people think is the basis for what they end up doing and these thoughts are conscious, deliberate, and accessible.

Of course, this is how people, by and large, think about their own sense of agency and will in everyday life (e.g., Wegner & Wheatley, 1999). For decisions and actions large and small,

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we experience our choices and behaviors as if we have decided to embark on them based on a conscious thought process. Therefore, it is not surprising that when we seek to understand behavior in organizations, such as how people react to the design of their jobs, we implicitly assume that such behavior is willed behavior in that organizational members have thought about it and decided to do it for any number of reasons. In fact, organizational behavior scholars often tend to assume that an elaborate, conscious, and motivated thought process precedes behavior. Hence, organizational behavior theories often focus on what goes into these “conscious” precursors of behavior. Behavior is the endpoint; the objective of theories intended to explain behavior is identifying the conscious thoughts, feelings, and motivations that lead to behavior.

However, an extensive and growing body of literature suggests that much of human behavior is automatic, that nonconscious thoughts and feelings are primary (and adaptive) drivers of behavior and choices, and that our perception of will revolves around covariation between conscious thoughts and behaviors that are the result of prior nonconscious activity (Wegner & Wheatley, 1999). Knowing this fact, of course, will not change one’s personal experience of conscious will. As Wegner and Wheatley (1999: 490) suggest, “Believing that our conscious thoughts cause our actions is an error based on the illusory experience of will.” However, to the extent that our theories and research are based on assumptions about human functioning in organizations that may not be tenable, this should give us pause.

More specifically, given the growing and extensive evidence pointing to the automaticity of much of human functioning and the critical and primary role of nonconscious thoughts and feelings in day-to-day life (e.g., Bargh, 2007; Hassin, Uleman, & Bargh, 2005; Uleman & Bargh, 1989), the time has come for organizational scholars to question their implicit assumption of organizational behavior as predominantly consciously willed behavior. To begin such a questioning and demonstrate its value and implications, in this article I consider job design theory and research as a critical case in point. The article unfolds as follows. First, I discuss contemporary theory and research on job design to underscore the implicit (and/or explicit) and the taken-for-granted assumptions this work makes (i.e., propositions in use). In the next several sections of the article, I review theorizing and research on the illusion of will and the role of nonconscious cognitive and affective processes in human functioning. Based on the literature reviewed, I develop a set of alternative propositions regarding job design that are grounded in contemporary theorizing and research on will, consciousness, and nonconscious thoughts and feelings.

Job Design Theory and Research

Contemporary theorizing and research on job design continues to bear the imprint of Hackman and Oldham’s (1975, 1976, 1980) highly influential job characteristics model (JCM; e.g., Morgeson & Humphrey, 2006; Parker, Wall, & Cordery, 2001; for reviews and meta-analyses, see Fried & Ferris, 1987; Humphrey, Nahrgang, & Morgeson, 2007). This model posits that five core job characteristics (skill variety, task identity, task significance, autonomy, and feedback) lead to three critical psychological states (experienced meaningfulness of the work, experienced responsibility for outcomes, and knowledge of results of the work), which, in turn, lead to work and personal outcomes (Hackman & Oldham, 1980).

Three additional aspects of the JCM are important to keep in mind. First, the model adopts a motivational perspective and is focused, in particular, on how job design can lead to high

internal motivation (Hackman & Lawler, 1971; Hackman & Oldham, 1976). Nonetheless, proposed work and personal outcomes include not only internal motivation but also growth satisfaction, general job satisfaction, and work effectiveness (i.e., quality and quantity; Hackman & Oldham, 1980). Second, the model is interactional in that how people respond to the design of their jobs is proposed to depend on individual differences, including growth need strength, knowledge and skills, and context satisfaction (Hackman & Oldham, 1980). Of these three individual difference moderators, growth need strength has garnered the most attention from researchers and was also the only moderator included in the early pivotal studies (Hackman & Lawler, 1971; Hackman & Oldham, 1976); few studies have explored the role of the other two theorized moderators (Fried & Ferris, 1987). In terms of growth need strength, the basic premise is that individuals with high growth need strength will respond more positively to jobs high in the core dimensions than individuals with low growth need strength (Hackman & Lawler, 1971; Hackman & Oldham, 1976). As Hackman and Oldham (1980: 89) indicate, "Employee work effectiveness is expected to be high when jobs are high in motivating potential"; motivating potential being a function of the five core characteristics. Last, although most empirical tests of relations in the model rely on perceptual measures of key constructs (Humphrey et al., 2007), the underlying premise of the model is that workers' conscious internal states drive their reactions to the actual design of their jobs and, ultimately, their behaviors. That is, characteristics of jobs lead workers to consciously think and feel certain things about their jobs (e.g., feel accountable or responsible for their work, know how well they are doing, and think the work is meaningful), and it is these conscious thoughts and feelings that ultimately lead to personal and work outcomes (e.g., job satisfaction and job performance). Based on their review, Fried and Ferris (1987: 309) concluded that although "objective and perceived job characteristics are related . . . not all of the reliable variance in job perceptions is explained by objective job conditions." In their recent meta-analysis, Humphrey et al. (2007) were not able to determine the effects of using job incumbents to provide ratings of both job characteristics and perceptual outcomes versus using some other source for assessments of job characteristics because there were too few studies that used sources other than job incumbents' perceptions to measure the job characteristics.

Based on their review and meta-analysis, Fried and Ferris (1987) concluded that the JCM was modestly supported but also in need of some modifications. For example, they found that the job characteristics were more strongly related to psychological outcomes than to behavioral outcomes and found some support for the mediating role of the psychological states for psychological outcomes (but not for performance). In terms of growth need strength, they concluded that "moderator effects were found to be largely artifactual, although there appears to be evidence that GNS moderates the job characteristics-job performance relationship" (Fried & Ferris, 1987: 314). A more recent meta-analysis was conducted by Humphrey et al. (2007) who also found support for the JCM while suggesting the need for modifications. For example, they found that the five core characteristics were positively related to job and growth satisfaction and internal motivation, whereas relations with performance were more mixed and generally more supportive for subjective performance and less supportive for objective performance. In terms of the theorized mediating role of the three psychological states, due to missing data, Humphrey et al. (2007) were only able to test mediation for the following three outcomes: internal motivation, job satisfaction, and subjective performance. Results provided some support for the hypothesized mediating role of the psychological states, and in particular, the mediating role of experienced meaningfulness. Humphrey et al. (2007) did not provide any

analyses or tests regarding the moderating role of growth need strength or the other two theorized moderators (Hackman & Oldham, 1980).

Recognizing that the JCM, in focusing on the motivational aspects of job design, did not consider other important aspects of job design, contemporary approaches have expanded the set of potentially relevant characteristics to be considered. For example, Humphrey et al. (2007) include both social characteristics and work context characteristics (in addition to an expanded set of motivational characteristics) in their model of work design. As another example, Parker et al. (2001) include job characteristics at the individual and group levels and interactions of characteristics in their model.

Theory and research has also questioned certain assumptions in the job design literature as well as expanded on the range of mechanisms by which job design can affect workers. For example, Wrzesniewski and Dutton (2001) call into question the assumption that jobs are designed by managers and taken as a “given” by workers in their model of job crafting that proposes why and how workers can construct or craft their own jobs, the conditions under which job crafting is more or less likely to occur, and its consequences. As another example, Grant’s (2007) job impact framework proposes how the impact of a job on potential beneficiaries and the jobholders’ contact with beneficiaries can lead to certain internal states in jobholders (i.e., the belief that they are positively affecting the well-being of beneficiaries and affective commitment to beneficiaries), which, in turn, results in their motivation to have a positive impact on beneficiaries. This latter factor, the “motivation to make a prosocial difference,” is theorized to be the direct precursor to work (i.e., effort, persistence, helping) and personal (i.e., competence, self-determination, social worth) outcomes (Grant, 2007).

Although classic (e.g., Hackman & Oldham, 1976, 1980) and contemporary approaches to job design (e.g., Grant, 2007; Parker et al., 2001; Wrzesniewski & Dutton, 2001) vary in a number of ways, what they do share is an underlying emphasis on the performance of work tasks as willed behavior. Jobholders perceive, react to, and/or shape job design characteristics, which, in turn, lead to some internal conscious states (i.e., conscious thoughts, feelings, and motivations) that are the direct precursors to the performance of work tasks. Of course, this is how people are likely to intuitively view their own work and nonwork behavior (i.e., as the product of their conscious will). An extensive and growing body of literature suggests that work behavior as consciously willed behavior may be the exception rather than the norm. As Wegner and Wheatley (1999: 490) suggest,

The real causal mechanisms underlying behavior are never present in consciousness. Rather, the engines of causation are unconscious mechanisms of mind . . . In fact, unconscious and inscrutable mechanisms create both conscious thought about action and create the action as well, and also produce the sense of will we experience by perceiving the thought as the cause of actions.

Classic and contemporary job design theory and research can be characterized in terms of “Propositions in Use,” which underscore the implicit (and/or explicit) assumptions this work makes with regard to the role of will and conscious cognitive and affective processes. Although these propositions in use likely fail to do justice to the nuances and important contributions of extant work, articulating them nonetheless has the potential to help us think about job design in new and alternative ways.

Perhaps most generally, the job design literature tends to implicitly assume that conscious internal mechanisms account for the effects that global job design features have on jobholders' reactions, attitudes, and behaviors. By global job design features, I mean "general job characteristics" (Hackman & Lawler, 1971: 263) that are broad in that they describe jobs at a somewhat abstract level (e.g., in terms of skill variety or task significance). That is, jobholders perceive the fundamental characteristics of their jobs, these perceptions result in conscious cognitions and affect, and these conscious cognitions and affect drive motivation, behavior, and attitudes. For example, as mentioned earlier, Hackman and Oldham's (1976, 1980) JCM proposes that core job characteristics lead to psychological states, which, in turn, lead to internal motivation, effectiveness on the job, and attitudes. The nature and definitions of these psychological states that are the explanatory causal mechanisms in the model linking job design to outcomes belies their conscious nature. That is, experienced meaningfulness of the work, experienced responsibility for work outcomes, and knowledge of results are defined as follows: "The degree to which the individual experiences the job as one which is generally meaningful, valuable and worthwhile"; "the degree to which the individual feels personally accountable and responsible for the results of the work he or she does"; "the degree to which the individual knows and understands, on a continuous basis, how effectively he or she is performing the job" (Hackman & Oldham, 1976: 256-257).

As another example, Grant's (2007) job impact framework suggests that job impact on, and contact with, beneficiaries leads jobholders to perceive the effects they have on beneficiaries and develop affective commitment toward them. Perceptions of impact on beneficiaries and affective commitment, in turn, lead to the motivation to make a prosocial difference and it is this motivation that drives behavior (as well as identity-based outcomes). Perceived impact on beneficiaries, defined as "the degree to which employees are aware that their actions affect others" (Grant, 2007: 399), is a conscious cognition and affective commitment to beneficiaries, defined as "emotional concern for and dedication to the people and groups of people impacted by one's work" (Grant, 2007: 401), is a conscious constellation of cognition and affect. Other models of job design also implicitly or explicitly assume that responses to job design are conscious (e.g., Wrzesniewski & Dutton, 2001). This leads to the following proposition:

Proposition in Use 1: People respond to global features of the design of their jobs in a conscious manner.

Consistent with the notion that job design affects behaviors through the conscious cognitions and affect it produces is the notion that jobholders consciously choose among alternative behavior patterns on the job. That is, jobholders consciously decide to expend high or low effort and perform a variety of behaviors at a certain level based on global evaluations of their jobs. This leads to the next proposition:

Proposition in Use 2: Behavior on the job is the result of a conscious choice on the part of the jobholder driven by global evaluations of the job.

A theme in the job design literature is that the more consciously engaged employees are on their jobs, the better the results in terms of work and attitudinal outcomes. That is, the more certain key characteristics are present on a job that lead to desired conscious internal cognitions

and affective reactions, the better the outcomes for organizations and their members, taking into account the role of individual differences. Also, and perhaps more at an implicit rather than explicit level, the literature tends to assume that in addition to being exclusively conscious, positive affective reactions are desirable, negative reactions are undesirable. This leads to the following three propositions:

Proposition in Use 3: High levels of conscious engagement in work activities are beneficial, and the more engagement the better in terms of desired work outcomes.

Proposition in Use 4: High levels of (desired) job characteristics theorized to be influential are beneficial such that the more these characteristics are present, the better the outcomes (taking into account the role of individual differences).

Proposition in Use 5: Positive affective reactions are beneficial, and negative affective reactions are detrimental.

Although clearly these implicit propositions in use have led to major advances in our understanding of job design, research on automatic thought and nonconscious cognitive and affective processes suggests that the field might be advanced by considering alternative propositions that might be more reflective of the manner in which the human mind functions. I address this research below.

Automatic Thought

Automatic thought takes place when cognitive processes satisfy as least one of the following conditions: cognitive processes are effortless, cognitive processes are not under conscious control, cognitive processes take place without awareness, or cognitive processes take place without deliberate intention (Andersen, Moskowitz, Blair, & Nosek, 2007; Bargh, 1989, 1994). Analogously, conscious cognitive processes are characterized by awareness, intention, effort, and control (Bargh & Chartrand, 1999). With automatic thought, knowledge is used unconsciously and, hence, must be available in memory, accessible, and applicable (Andersen et al., 2007; Higgins, 1996a; Higgins & King, 1981).

Perception of features and elements in the external environment is an automatic process in that people do not will to see certain things or see them in a certain way but rather automatically create an internal representation of what is presented to them externally. With perception comes automatic categorization into schemas, scripts, stereotypes, and other knowledge structures given such structures exist in memory, are accessible, and are applicable. Automatic priming of these knowledge structures through perception produces behavior, more often than not, in the absence of deliberate conscious intention and forethought such that perception of the environment directly leads to behavior without a prior conscious choice taking place (Bargh & Chartrand, 1999).

Of course, when it comes to work behavior, one could argue that much or at least a sizeable portion of work behavior and task performance is purposive or goal oriented in that jobholders have tasks that need to be accomplished, work that needs to get done, and goals that need to be achieved. As in everyday life, however, these accomplishments, achievements, and goals are likely also represented in mental knowledge structures that are automatically activated on perception of relevant cues (Bargh, 1990, 1997; Bargh & Chartrand, 1999; Kruglanski, 1996).

This automaticity comes about through repeated pairings between environmental cues and events and internal responses that yield behavior both through intentional and unintentional pathways (Bargh & Chartrand, 1999; Shiffrin & Schneider, 1977). When automaticity comes about intentionally, people deliberately strive to learn appropriate responses or acquire needed skills. Through practice and repetition, the responses become automatic with little need for conscious deliberation or choice to precede enactment of the behavior on perception of cues in the environment. Learning many work tasks proceeds in this manner, whether it is routine medical procedures performed by physicians, financial statement analyses performed by accountants, food preparation by chefs, or long-haul truck driving. As soon as conscious deliberation is no longer needed for execution of the behavior, it exits, adaptively freeing up limited conscious capacity to focus on other things or respond to the unexpected (Bargh & Chartrand, 1999).

Automaticity and learning also can (and very often is) acquired unintentionally (Bargh & Chartrand, 1999; Wilson, 2002). That is, people have their own enduring motives and aims that are hierarchically structured or organized in memory from the more abstract (e.g., motives to achieve, to accomplish, to be liked, to be kind) to the more intermediate (e.g., goals to get a good job, perform well, make a good impression, help others) to the more concrete (e.g., plans and strategies such as researching employment prospects, putting forth extra effort on the job, seeking out people with common interests, offering advice and guidance) to actual specific behaviors (e.g., Bargh & Chartrand, 1999). These are stable motives that can be activated in a variety of situations—situational features and cues activate the motives and goals that then drive behavior and learning without conscious choice.

The unconscious can be thought of as a pattern detector—detecting relevant cues in the environment, automatically matching them up to stored knowledge structures in memory, and enacting behavior, which, of course, is adaptive given the very limited processing capacity of the conscious mind (Wilson, 2002). Moreover, learning can take place nonconsciously. For example, Lewicki, Hill, and Bizot (1988) demonstrated, in a laboratory experiment, that participants were able to learn a complex decision rule determining where in a sequence an “X” would appear in the four quadrants of a computer screen without being able to consciously articulate what rule they were following. When the rule changed and their performance suffered, they did not know why. The kind of rule the participants learned nonconsciously in the experiment is very difficult to learn via conscious efforts, thus demonstrating the adaptability of the unconscious (Lewicki et al., 1988; Wilson, 2002).

Importantly, automatic thought and the behavior and learning it enacts are context dependent. Contextual cues automatically and nonconsciously activate or prime knowledge structures that are already accessible and these knowledge structures, in turn, are altered by their context-driven activation and use (Andersen et al., 2007). Consistent with this premise, is research that suggests that when “choosing” among behaviors, such “choices” are made locally at the time of behavior enactment and, thus, are determined by the local context; at times, it is not even clear a “choice” has been made but rather an action has been taken, which may be viewed as a choice around or after the time it occurs (Shafir, 2007).

Nonconscious Emotion

Although the nature and definition of nonconscious emotion is not without controversy, there does seem to be a consensus that a good deal of emotional processes take place without

conscious awareness and that there is a progression from nonconscious emotion to emotions or feelings that are consciously experienced and known, although this progression does not necessarily take place all or most of the time (e.g., Bargh & Ferguson, 2000; Berridge & Winkielman, 2003; Damasio, 1994, 1999, 2003; Scherer, 2005; Winkielman, Berridge, & Wilbarger, 2005). For example, Scherer (2005: 312)

attempt[s] to refrain from classifying phenomenon into conscious and unconscious . . . [and] . . . rather . . . assume[s] that a large majority of emotion processes functions in an unconscious mode and that only some of these processes (or their outcomes) will emerge into consciousness for some periods of time.

Damasio (1999) proposes that there is a progression from “emotions” that are automatically and nonconsciously activated by encountering stimuli that have implications for one’s survival and well-being, to “feeling emotions” in terms of creating an internal mental image of one’s changed body state in the brain, to “knowing” that one has the feeling (what is typically viewed as an emotion and what we consciously experience and know to be, for example, joy or suffering). Emotions and feeling emotions can occur nonconsciously while knowing that one has a feeling requires consciousness. On encountering stimuli that have implications for well-being, nonconscious emotions are immediately triggered, which set in motion a series of adaptive somatic reactions with the aim of ensuring one’s survival and well-being (Damasio, 1999). In this regard, Damasio (1999: 51) suggests that (nonconscious) emotions are

complicated collections of chemical and neural responses, forming a pattern; all emotions have some kind of regulatory role to play, leading in one way or another to the creation of circumstances advantageous to the organism . . . emotions are biologically determined processes, depending on innately set brain devices, laid down by a long evolutionary history.

Research in a variety of areas documents both the occurrence of nonconscious emotions and their adaptive value. For example, based on Damasio’s (1994) somatic marker hypothesis, Bechara and colleagues (e.g., Bechara & Damasio, 2005; Bechara, Damasio, Tranel, & Damasio, 1997) conducted a series of laboratory experiments in which groups of normal participants (control condition), groups of patients with damage to the ventromedial prefrontal cortex, and groups of patients with damage to the amygdala performed a gambling task. Patients with both types of brain damage suffer from impaired decision making, not because of cognitive limitations, but rather because of emotion impairment (Bechara & Damasio, 2005; Bechara, Damasio, & Lee, 1999). In particular, the somatic marker hypothesis “attributes these patients’ inability to make advantageous decisions in real-life to a defect in an emotional mechanism that rapidly signals the prospective consequences of an action, and accordingly assists in the selection of an advantageous response option” (Bechara & Damasio, 2005: 339).

In the gambling task, participants are given play money and have the objective of maximizing returns by choosing cards to draw from 1 of 4 decks. Two of the decks result in high immediate payoffs and larger long-term losses for a net long-term loss, whereas two of the decks result in lower immediate payoffs and smaller long-term losses for a net long-term gain. Participants select one card at a time from whichever deck they choose and can switch decks as often as they like. Although they do not know how many cards they will be allowed to choose in advance, they

choose 100 cards. Normal participants experienced emotions as indexed by physiological states when they received gains (rewards) or losses (punishments) as a result of their card selections. Interestingly enough, before they are consciously aware of the differences between the decks, normal participants experience emotions (as physiologically indexed) prior to choosing from the loss decks and start avoiding these decks (before they are conscious of why or the actual differences between the decks). The patients with damage to the ventromedial prefrontal cortex and the patients with damage to the amygdala don't experience emotions prior to choosing throughout the experiments and even when they have a sense of what is going on with the decks, do not make advantageous card selections. As Bechara and Damasio (2005: 346, 348) suggest,

Without the ability to generate these emotional signals, the patients fail to avoid the decks that lead to painful losses, and instead they sample the wrong decks until they go broke in a manner that is very similar to how they behave in real life. . . "knowledge" without "emotional signaling" leads to dissociation between what one knows or says, and how one decides to act.

For the normal participants, emotions signal and result in correct choices before the participants are consciously aware of the differences between the decks. Thus, nonconscious emotions lead the normal participants to make the correct choice even though they are not aware of the emotions or the reason for their occurrence.

Research on automatic reactions suggests that people automatically and rapidly react to most stimuli that they encounter in terms of whether they are good or bad without having the deliberate intention to do so or being aware of having done so (e.g., Bargh & Ferguson, 2000). Again, this is adaptive and relates to approach/avoidance tendencies toward stimuli that are "good" (rewarding) or "bad" (punishing) for survival and well-being (Chen & Bargh, 1999).

More generally, Overskeid (2000) proposes that problem solving is adaptively guided by feelings. People become aware of problems and seek to solve them when they feel bad or when they can envision feeling better than they currently do. Problems are solved and choices are made based on the feelings that are generated by alternatives (whether consciously or nonconsciously) and not necessarily by cognitive criteria that might be applied to them. Similarly, Loewenstein, Weber, Hsee, and Welch's (2001) risk as feeling hypothesis proposes that visceral feelings at the time of making risky decisions, that are not necessarily cognitively mediated, known, or linked to deliberation of decision parameters and alternatives, play an important role in decision making. Moreover, emotions that arise in the course of risky decision making often are not congruent with cognitive evaluations of risks and parameters, and when this occurs, emotions tend to dominate choice and behavior (Loewenstein et al., 2001).

Automatic Thought and Nonconscious Emotion Are Adaptive

Common to many perspectives on automatic thought and nonconscious emotion is the recognition that unconscious processes are adaptive and, thus, have been selected for through evolution (Wilson, 2002). At a very basic level, people are bombarded with so much sensory input on a moment to moment basis that it is impossible for them to consciously attend to it all. For example, each second that a human being is awake, the five senses are processing more than 11,000,000 bits of information in receptor cells that are linked to the brain via nerves (Norretranders, 1998; Wilson, 2002). Consciousness can maximally process about 40 such

bits that enter consciousness via a nonconscious filter, leaving the remainder to the unconscious (Norretranders, 1998; Wilson, 2002). And this is just sensory input.

Equally important, people have vast repertoires of concepts, schemas, scripts, goals, needs, desires, and ingrained predispositions residing in the unconscious. At any moment in time, only a very small subset of this accumulated material of the mind is represented in consciousness. When people engage in behavior and make decisions and choices, they are often guided by the unconscious and are not consciously aware of why they are acting as they do and making what seem to be choices (Wilson, 2002). This is adaptive because the unconscious can process vastly more information than consciousness, compromises multiple systems and abilities rather than a single system, and is a quick and largely accurate pattern detector (Wilson, 2002). What are referred to as “gut” feelings are usually the result of unconscious processes, and when these gut feelings are replaced by conscious deliberation, suboptimal preferences sometimes result given the limits of consciousness (Wilson, 2002; Wilson & Schooler, 1991).

Of course, gut feelings need to be informed. As Wilson (2002: 171-172) suggests,

We should gather as much information as possible, to allow our adaptive unconscious to make a stable informed evaluation rather than an ill-informed one. . . The trick is to gather enough information to develop an informed gut feeling and then not analyze that feeling too much . . . we should not analyze the information in an overly deliberate, conscious manner, constantly making explicit lists of pluses and minuses. We should let our adaptive unconscious do the job of forming reliable feelings, and then trust those feelings, even if we cannot explain them entirely.

In several laboratory studies, Wilson and colleagues demonstrated that when engaging in activities ranging from choosing art posters, predicting how long a current romantic relationship will last, evaluating jams, or selecting college courses, participants tend to make better choices or judgments when they rely on their “gut” feelings and tend to make inferior choices or judgments when instructed to list or think about reasons for the judgments or choices (Wilson, 2002; Wilson, Dunn, Bybee, Hyman, & Rotundo, 1984; Wilson & Kraft, 1993; Wilson et al., 1993; Wilson & Schooler, 1991). Why is this the case? Wilson (2002) suggests that when coming up with conscious reasons for judgments or choices, people rely on faulty or incomplete information (e.g., what comes to mind at the time, what is easiest to verbalize, or what their own personal theories suggest should go into such judgments or choices) and thus make less advantageous choices. Those relying on gut feelings perhaps have access to more complete and veridical thoughts and feelings relevant to the task at hand.

Importantly, although conscious thought might be directed on a certain activity, the unconscious can be focused on something else. In particular, unconscious thought theory (UCT) suggests that conscious affective and cognitive processes can be focused on a particular task, activity, or stimulus, whereas unconscious affective and cognitive processes can be adaptively focused on something else (e.g., Dijksterhuis, 2004; Dijksterhuis & Meurs, 2006; Dijksterhuis & Nordgren, 2006). For example, take the case of a product designer who is trying to come up with a new concept for a combined pizza/artisan bread machine over the course of several weeks, picking up the project when time allows and then shifting gears when more pressing short-term demands arise. While preparing a required quarterly report on her activities and accomplishments, her conscious attention is focused on summarizing her work efforts over the past 3 months. At the same time, her unconscious may be continuing to work on the design of the new machine, without her conscious awareness. While putting the finishing touches on her

report, an idea “pops” into her consciousness, presumably out of the blue, for how to solve a problem with the product design that had been eluding her. According to the UCT, insights such as these on ongoing tasks and problems that just seem to pop into consciousness while engaged in another activity like taking a shower, driving to work, or preparing a meal are the result of unconscious processes that at a certain point become crystallized and accessible to consciousness (Dijksterhuis & Nordgren, 2006).

UCT suggests that allowing time for unconscious processes is beneficial and superior to relying on conscious processes alone because unconscious processes have vastly greater capacity than conscious processes that are typically limited to temporarily considering and remembering seven things at a time (Dijksterhuis, Aarts, & Smith, 2005; Dijksterhuis & Nordgren, 2006; Miller, 1956; Norretranders, 1998; Wilson, 2002). Additionally, conscious processes tend to act in a convergent manner, whereas unconscious processes operate in a more bottom-up, divergent manner and are good at integrating and weighing information (Dijksterhuis & Nordgren, 2006).

That allowing time for unconscious processes is beneficial for performance on complex tasks has been demonstrated in a series of laboratory experiments conducted by Dijksterhuis (2004). In these studies, participants engaged in complex judgment tasks in which they had to either evaluate or choose among roommates or apartments based on information about multiple attributes of the roommates or apartments (with one apartment or roommate being relatively superior, one being relatively inferior, and one or two being somewhat neutral). Participants were randomly assigned to three conditions: in the immediate condition, judgments had to be made right after receiving the information; in the conscious thought condition, participants were given some time to think about the task before deciding; in the unconscious thought condition, participants worked on an unrelated task for the same amount of time as in the conscious thought condition before returning to the task and deciding. Participants in the unconscious thought condition performed better than those in both the immediate and conscious thought conditions.

Clearly, automatic thought and nonconscious cognition and emotion are functional and adaptive, and people could not survive without them. And although automaticity has long been recognized in work on complex skill acquisition (e.g., LaBerge & Samuels, 1974; Logan, 1985, 1989; Schneider, 1985), in the organizational behavior literature, there remains a tendency to assume (implicitly or explicitly) that conscious thoughts and reactions precede behavior. An extensive body of research suggests that this might be more the exception than the norm and that automaticity is the driver of most day-to-day reactions and behaviors (Andersen et al., 2007; Bargh & Chartrand; Wegner & Wheatley, 1999).

Alternative Propositions for Job Design Theory and Research and Their Implications

Below, I develop a set of “Alternative Propositions” for job design theory and research based on explicit consideration of the illusion of will and the role of nonconscious thoughts and feelings. These alternative propositions have the potential to shed new light on how people respond to the design of their jobs, and more generally, behave in and around organizations.

Alternative Proposition 1

Given that automatic thought underlies the vast majority of day-to-day behavior (Andersen et al., 2007; Bargh, 2007; Hassin et al., 2005; Uleman & Bargh, 1989), it is likely that people’s responses to the design of their jobs are also an automatic process. Essentially, local

cues in organizational settings prime nonconscious knowledge structures that guide behavior. These local cues can range from various features of the physical environment in organizations (Elsbach & Pratt, 2008) to task directives and processes to interpersonal communication and narratives (Grant, 2008; Johns, 2006). Although the job design literature tends to implicitly assume that people consciously think about and make sense of global features of their jobs, and that these global reactions guide responses to job design, research on automaticity suggests that this is not likely to be the case. Rather, this research suggests that the local cues people encounter as they go about performing their jobs are likely to nonconsciously activate knowledge structures that guide their behavior without conscious forethought. Although these local cues could include cues related to the actual design of jobs, it is not so much that global and conscious interpretations of jobs drive reactions as it is the knowledge structures that are automatically activated by local cues. These knowledge structures can include schemas, scripts, goals, and motives and needs. Which knowledge structures actually get activated by local cues depends on their accessibility (Andersen et al., 2007; Forster & Liberman, 2007). For example, take the case of an industrial worker employed by an organization which has had frequent Occupational Safety and Health Administration violations and industrial accidents involving deaths and injuries and also recent layoffs. On entering the workplace, the worker sees highly visible signs and placards extolling the importance of safety. Rather than being conscious reminders to the worker to follow safety procedures, these sign automatically activate the employee's highly accessible self-preservation goal in this work environment (e.g., the goal to keep his or her job and avoid injury in the context of management's disregard for worker safety and overemphasis on the bottom line). Automatic activation of this self-preservation goal leads, for example, to the employee automatically mistrusting those in management he or she comes into contact with, doubting the sincerity of communications from management, and trying to get through the day without incident.

Alternative Proposition 1: People respond to the design of their jobs in an automatic fashion based on local cues and the nonconscious activation of knowledge structures.

Consideration of Alternative Proposition 1 points to several intriguing topics for future research. First, there are a wide variety of local cues in organizations that can automatically influence people's reactions and behaviors, and some of these local cues may provide conflicting signals (Elsbach & Pratt, 2008; Johns, 2006). An important topic for future research is determining which cues, of the multitude that may be available in an organizational setting, tend to be most influential in terms of automatically influencing people's behavior. Sutton and Rafaeli's (1988) findings that in convenience stores, clerks adjust their behavior in response to how busy the store is and the presence of long lines suggest, for example, that proximal and immediate cues related to the performance of core tasks might be especially influential. In this regard, it is important to keep in mind that somewhat slight differences in cues can result in different knowledge structures being automatically activated (Andersen et al., 2007).

Moreover, which cues people nonconsciously pay attention to depends on the accessibility of constructs and knowledge structures in memory. Accessibility depends on the importance to the self of the construct or knowledge structure (e.g., an important goal a person has), how frequently the construct or knowledge structure has been used, and how recently it has been used (Andersen et al., 2007; Forster & Liberman, 2007; Wilson, 2002). Knowledge structures that are frequently used are chronically accessible (Andersen et al., 2007; Bargh, 1999; Bargh

& Thein, 1985; Higgins, King, & Mavin, 1982), whereas those that have been recently used have a transient accessibility (Andersen et al., 2007; Higgins, 1996b). Thus, it is important for future research to determine how aspects of job design and the context in which jobs are performed influence the accessibility of constructs and knowledge structures in jobholders' memories.

Thus, local cues can come from the design of the work itself in addition to the context in which the work is performed. And sometimes, it may be the case that aspects of the organizational context (including processes and procedures) may override aspects of job design to the extent that these are locally salient. For example, take the case of a researcher who has high levels of autonomy on the job and for whom research (and the autonomy to conduct it) are highly valued personal goals. If this researcher also, at the same time, is required to periodically complete detailed reports outlining accomplishments, work in progress, and milestones (both small and large), the tedious and disliked reporting process and the time it consumes might be particularly salient cues that affect the researcher's reactions to his or her job in a negative fashion, despite the fact that when performing actual research, high levels of autonomy do, in fact, prevail.

Of course, one could argue that the constructs and knowledge structures that jobholders nonconsciously access are isomorphic to, for example, the five core dimensions in the JCM. Although this is ultimately an empirical question, the wide array of contextual factors and influences in organizations (e.g., Elsbach & Pratt, 2008; Griffin, 1983; Griffin, Bateman, Wayne, & Head, 1987; Johns, 2006; Salancik & Pfeffer, 1977, 1978) as well as the variety of important and highly accessible personal goals and needs jobholders may have suggests that it unlikely that the five core dimensions are *the* primary knowledge structures all or most jobholders nonconsciously access as they go about performing their jobs. For example, a worker for whom economic security is an overarching concern will likely be influenced by different cues and access different knowledge structures than one who is concerned with competitive strivings.

Alternative Proposition 2

Although the job design literature tends to assume that people consciously choose, among alternative behaviors and efforts levels, which behaviors to perform and at what levels of intensity (e.g., effort and persistence), based on global evaluations of their jobs, we know from the decision-making literature that choices are made sequentially, locally, and automatically and are very sensitive to minor changes in context (e.g., Shafir, 2007; Shafir & LeBoeuf, 2002). So, for example, take the case of a doctoral student in a large state university teaching his or her first undergraduate class. The presence of a well-used Scantron scoring machine in the department's work room might lead the student to "choose" to give multiple choice tests to his or her students; in the absence of such a machine, the student might consider alternative means to gauge students' learning. In either case, it is not so much the student's global evaluations of his or her job as an instructor that matter so much as the local context he or she encounters when putting together a syllabus.

Alternative Proposition 2: On-the-job behaviors (direction of effort and intensity) are more driven by the local context in which behaviors occur, less driven by global evaluations of the job, and reflect a series of sequential and predominantly automatic choices rather than an overall global approach to the job.

Thus, to understand the stream of naturally occurring behavior on jobs and what cues lead to what sequential choices as to behaviors and effort levels, it is important for future research to consider work behaviors in a temporal context (Fried, Grant, Levi, Hadani, & Slowik, 2007; George & Jones, 2000). By sampling workers over a series of days and tracking their actual on-the-job behaviors, researchers might be able to uncover what local cues are actually leading them to engage in specific behaviors at specific effort levels. For example, by observing convenience store clerks at busy and slow times, Sutton and Rafaeli (1988) were able to determine that displayed emotions were a consequence of store busyness. When stores were busy, clerks were cued to display neutral emotions so as to efficiently handle long lines of customers.

Of course, one could argue that these local cues and the local context are heavily weighted toward, for example, the five core dimensions in the JCM. Again, although this is an empirical question, given the multitude of, and variation in, contextual conditions and workers' own pressing goals and needs, it is questionable to what extent factors such as skill variety, feedback, or any of the other core dimensions are always focal. For example, people may rely on and use skills without really thinking about whether the skills they are using are similar or different from each other; levels of skill variety might be a taken-for-granted aspect of jobs that does not drive behavior. Workers' chronically accessible knowledge structures are a good starting point for determining which cues, of the many encountered on a job, are primary drivers of behaviors. Ultimately, it is an empirical question to what extent these chronically accessible knowledge structures are isomorphic to, for example, the core dimensions in the JCM.

Alternative Propositions 1 and 2 can be addressed in future research through both laboratory and field studies. In the lab, for example, researchers could explore how performance of the same laboratory task might differ depending on the local context (e.g., physical surroundings). In such research, differences in the local context could approximate differences that are found in actual work settings. In the field, researchers could explore how responses to jobs that are similar in terms of global features might differ depending on differences in the local contexts and the ways in which these differences influence workers' chronically accessible knowledge structures.

Alternative Proposition 3

Although the job design literature tends to assume that high levels of conscious engagement and involvement on the job are uniformly beneficial, several lines of research suggest this may not always be the case, at least for the case of job performance. Clearly, when people are acquiring new knowledge or skills, high levels of conscious engagement and involvement are desirable (Ouellette & Wood, 1998; Wegner & Bargh, 1998). However, when people are using their existing knowledge and skills to solve problems, come up with creative ideas and solutions, and form complex judgments, the research discussed earlier (e.g., Dijksterhuis & Nordgren, 2006; Wilson & Schooler, 1991; Wilson, 2002) suggests that too much conscious engagement can be detrimental and lead to suboptimal outcomes. Given the vastly greater processing capacity of the unconscious (Norretranders, 1998; Wilson, 2002), the role of incubation in creativity (Sio & Ormerod, 2009), the fact that introspection and thinking about the reasons behind preferences can lead to less desirable choices (Wilson, 2002; Wilson & Schooler, 1991), and the benefits of relying on expert intuition (Dane & Pratt, 2007), it might be best to strive for high levels of conscious engagement and involvement when people are acquiring new skills and

knowledge. When people are applying or using their existing skills and knowledge, especially when uncertainty and/or complexity are high, there may be such a thing as too much conscious involvement and deliberation. This leads to the following proposition:

Alternative Proposition 3: High and sustained levels of conscious engagement and deliberation are beneficial for certain kinds of tasks (e.g., acquiring new skills and knowledge) and detrimental for other kinds of tasks (e.g., creativity and complex judgments that rely on existing knowledge and skills).

Alternative Proposition 3 has a number of interesting implications for future research. First, it is important to determine how to design jobs such that there is an appropriate balance of tasks requiring high and low levels of conscious engagement (Elsbach & Hargadon, 2006; George, 2008). Second, research should focus on how workers naturally create fluctuations in the extent of their engagement at work through planned and unplanned breaks (Jett & George, 2003). Third, the extent and role of interruptions needs to be considered in the context of job design as it has implications for levels of conscious engagement (Jett & George, 2003).

To avoid any potential confusion, Alternative Proposition 3 is not meant to imply that high engagement is important for newcomers or those with short tenure on a particular job and that as tenure increases, engagement can become detrimental. On many jobs, learning is an ongoing process that will benefit from high levels of engagement. It is also not meant to be inconsistent with research, which suggests that job complexity and intrinsic motivation can be beneficial for creativity (Shalley, Zhou, & Oldham, 2004). Rather, Alternative Proposition 3 acknowledges the important role that nonconscious thought can play for certain kinds of work tasks and processes (George, 2008).

Alternative Proposition 4

Given that the job design literature has a history founded, in part, on the desire to make routine jobs more intrinsically motivating (Hackman & Oldham, 1980), it is perhaps not surprising that research tends to assume “the more the better” in terms of desired job characteristics, taking into account the role of individual differences. Although a “more the better logic” might hold for intrinsic motivation, the job design literature also includes performance and effectiveness (both in terms of quality and quantity) as an important outcome (e.g., Hackman & Oldham, 1980). Recently, however, it has been suggested that routinization (Ohly, Sonnentag, & Pluntke, 2006) and mixing more mundane tasks with more complex tasks (Elsbach & Hargadon, 2006) can potentially be beneficial for creativity by providing jobholders with time to let their unconscious process complex problems and develop creative solutions (George, 2008). This suggests that for core job dimensions in the JCM and other more contemporary models in this tradition, “the more the better” might not apply and better outcomes might be obtained by having jobs composed of both complex and simple tasks.

Contemporary models of job design also seem to embrace a “more the better” logic. For example, in Grant’s (2007) model of relational job design, the higher the job impact on beneficiaries and contact with beneficiaries, the better. However, perhaps in this case as well, more moderation is called for. For example, when impact and contact are very high, jobholders might be so engaged in helping beneficiaries that they have less opportunity and time to think (consciously and unconsciously) about existing problems in systems and procedures and ways

to creatively solve them that ultimately have the potential to have more widespread benefits for current and future beneficiaries. This leads to the following proposition:

Alternative Proposition 4: Job characteristics should be balanced to allow for alternative modes of thinking and behaving.

Future research should focus on how to achieve such a balance in job characteristics and over what time period (George & Jones, 2000). The temporal dimension of balancing likely hinges on basic characteristics of the work being done. For example, professors sometimes try to block out a certain number of hours per day or days per week for actual research and writing and use the rest of their work time for teaching-related activities, reviewing, and administrative tasks and committee work. In this case, it is actually one of the core dimensions in the JCM, autonomy, which allows balancing to occur. A hospital nurse or a television reporter might have balancing occur within each day, whereas a home builder or small business owner might have balancing occur over a period of several days. More generally, Alternative Propositions 3 and 4 can potentially be addressed through quasi-experiments in the field that explore the effects of balancing of job characteristics and alternating levels of engagement over time.

As mentioned earlier, the “more the better” logic in, for example, the JCM, explicitly incorporates an interactional perspective such that people who are high on certain individual differences, in particular growth need strength, are expected to respond more positively to jobs high on the five core dimensions than people who are low in growth need strength (Hackman & Oldham, 1976, 1980). An interesting direction for future research is to explore the role of individual differences in the balancing of job characteristics. For example, individual differences in the chronic accessibility of knowledge structures, concepts, needs, and values (Bargh & Pratto, 1986; Higgins, 1989; Higgins & King, 1981; Moretti & Shaw, 1989) might influence how people respond to their jobs and how balance in job characteristics might best be achieved.

Alternative Proposition 5

The job design literature tends to assume that affective reactions are conscious and that positive affective reactions are desirable, negative affective reactions undesirable. Clearly, when work attitudes and intrinsic motivation are the outcomes of interest, positive affective reactions are desirable. However, the job design literature also considers performance or effectiveness to be an important outcome of job design (e.g., Hackman & Oldham, 1980). Based on an extensive body of literature, we know that affective reactions can be and often are nonconscious and that there is a progression from nonconscious to consciously experienced emotions (e.g., Bargh & Ferguson, 2000; Berridge & Winkielman, 2003; Damasio, 1994, 1999, 2003; Scherer, 2005; Winkielman et al., 2005). Moreover, negative emotions and affective reactions are functional and have adaptive value in terms of signaling problems that need to be addressed (Damasio, 1999; Frijda, 1988; George & Zhou, 2002, 2007). In fact, nonconscious negative emotional reactions can alter behavior rapidly in adaptive ways without conscious awareness (Bechara & Damasio, 2005; Bechara et al., 1997, 1999).

In thinking about job design issues, then, it would seem to be important for work in this area to recognize the adaptive functionality of nonconscious emotions and negative emotions and affective reactions that do become conscious. For example, in many disasters ranging from the

collapse of a pond of coal ash at the Kingston Steam Plant of the Tennessee Valley Authority, which destroyed homes and land to major financial frauds committed by Bernard Madoff and others, regulators and other relevant parties often spotted signs of these problems years before the crises ensued (Burrows, 2008; Hall, 2009). On a more mundane and day-to-day basis, people often do recognize problems at work, have an initial negative response to them, and then that negative response somehow is dampened, the underlying problem is not addressed, and the seeds for bigger problems in the future are sown. In focusing on positive attitudes and the desire to promote positive affective states via job design and other organizational initiatives, it might be that the adaptive and functional negative emotional signals that ensue automatically as jobholders encounter problematic events on their jobs are blunted. Of course, this it not meant to imply that negative affective states should be promoted. However, what it does suggest is that when people do experience naturally occurring negative emotional reactions, these are occurring for a reason and addressing the reason can lead to better outcomes.

Thus, perhaps, in addition to viewing job design as a way to promote positive affective reactions and job satisfaction, the literature should acknowledge the functionality of naturally occurring negative emotional states. And mechanisms should be put in place to allow jobholders to respond to the signals their negative emotions are providing rather than feeling that they need to somehow suppress these negative reactions and keep up a positive front. Thus, this leads to the following proposition:

Alternative Proposition 5: Both positive and negative affective reactions are functional and adaptive.

An intriguing area for future research to explore is how to design jobs and manage the wider organizational context in ways that allow workers to spontaneously respond to the negative affective reactions and emotions they do experience. For example, rather than feeling the need to suppress negative reactions and emotions, workers might be encouraged to try to understand their underlying causes and make recommendations for changes or improvements that address these underlying causes. In this regard, future field research could explore how, for instance, organizational stories that highlight how members' acknowledgement of, and responses to, their misgivings and negative emotional reactions to events and initiatives have helped them recognize problems and improve performance. Such research could explore the extent to which having such stories be a salient feature of organizational history may encourage current members to adaptively learn from their negative emotions. Additionally, future research is needed that addresses how organizations can manage the tension between needing employees to carefully deliberate over decisions while allowing naturally occurring emotional reactions to provide their important and adaptive signally input into behavior, judgment, and choice.

Methodologically, acknowledging the role of nonconscious processes in job design research, and more generally in the field of organizational behavior, suggests that researchers may want to expand the set of measurement tools that they rely on. For example, implicit measures such as implicit association tests (Greenwald, McGhee, & Schwartz, 1998) and affective priming tasks (Fazio, Jackson, Dunton, & Williams, 1995), although not without controversy (e.g., De Houwer, Teige-Mocigemba, Spruyt, & Moors, 2009a, 2009b; Gawronski, LeBel, Peters, & Banse, 2009; Nosek & Greenwald, 2009), have been used extensively in social psychology and other areas. As Haines and Sumner (2006) suggest, it is not so much that implicit measures

should be thought of as replacing more traditional explicit measures but rather that when used together, new insights might be generated.

Conclusions and Implications

As a field, organizational behavior has not kept pace with the extensive literature in social psychology and related fields attesting to the automaticity of much of everyday life (Andersen et al., 2007; Bargh, 2007; Hassin et al., 2005; Uleman & Bargh, 1989). To the extent that our theories presuppose an overly intellectualized approach to organizational life, they may fall short in terms of leading to true advances in our understanding of not just how people respond to the design of their jobs but more generally how they behave in and around organizations. Although it is certainly a challenge to operate from perhaps a very different basic set of assumptions about human nature and the workings of the mind, at the same time, it is vastly exciting to consider how theorizing and research in organizational behavior might be transformed by taking into account automaticity and the workings of the nonconscious mind. As Norretranders (1998: ix) suggests,

Scientific investigations into the phenomenon of consciousness have demonstrated that people experience far more than their consciousness perceives; that they interact far more with the world and with each other than their consciousness thinks they do; that the control of actions that consciousness feels it exercise is an illusion.

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