WHY THREATS TRIGGER COMPENSATORY REACTIONS: THE NEED FOR COHERENCE AND QUEST FOR SELF-VERIFICATION

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There is considerable agreement that threatening people's beliefs may trigger compensatory activity designed to reaffirm the beliefs that have been challenged. Disagreement reigns, however, regarding the nature of the mechanism that underlies such compensatory activity. We propose that the desire for coherence that motivates self-verification processes underlies these processes. For example, research on self-verification has demonstrated that just as people with positive self-views react to negative evaluations by amplifying their efforts to confirm their positive self-views, people with negative self-views react to positive evaluations by amplifying their efforts to confirm negative self-views. Further, whereas past research on self-verification strivings demonstrate that coherence strivings motivate efforts to confirm negative as well as positive self-views, recent work on meaning maintenance activities indicates that people work to verify implicit as well as explicit self-views.

. . . children are born with the expectation of finding a regularity. It is connected with an inborn propensity to look for regularities, or with a *need* to *find* regularities. . . . This "instinctive" expectation of finding regularities . . . is logically a priori to all observational experience, for it is prior to any recognition of similarities . . . and all observation involves the recognition of similarities (or dissimilarities). (Popper, 1963, pp. 47-48)

One way to appreciate the significance of Popper's "regularities" or coherent patterns is to observe how people cope with incoherence. Deprived of a sense that their worlds are coherent, people will begin to question the bedrock assumptions on which their beliefs are based. If answers are not forthcoming, they will eventu-

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ally despair that the world lacks meaning and that their lives lack purpose and direction, a state of psychological anarchy. Threats to people's sense of coherence thus represent the most fundamental of all threats, for organisms who feel that their beliefs and expectations cannot be trusted have no basis for coping with life's challenges. As Popper's remarks imply, if people cannot detect regularities and coherent patterns in the world around them, their very capacity for logical reasoning will be compromised and the nature of reality will remain opaque and impenetrable. The desire for coherence is therefore a very basic and fundamental one.

THE DESIRE FOR COHERENCE

The rudiments of a desire for coherence appear to be wired into the neural circuitry of humans and nonhumans alike. Some of the earliest support for this proposition comes from an investigation of chimps. Tinkelpaugh (1928) began by putting a desirable food such as lettuce under one of two cups as the monkey watched intently from across the room. A screen that blocked the monkey's view of the cups was lowered briefly, afterwhich the monkey could approach the food. Almost invariably, the monkey raced across the room and picked up the cup with the food and ate it.

   After the monkey became accustomed to this procedure, Tinkelpaugh altered the script by surreptitiously switching the type of food under the cup during the delay period. For example, if the monkey witnessed lettuce being placed under the cup, Tinklepaugh replaced it with an equally desirable food such as a banana. The monkeys were bewildered and upset when they realized that the food was not what their experiences had led them to expect:

> She extends her hand to seize the food. But her hand drops to the floor without touching it. She looks at the banana but (unless very hungry) does not touch it. She looks around under the cup and behind the board. She stands up and looks under and around her. She picks the cup up and examines it thoroughly inside and out. She had on occasion turned toward observers present in the room and shrieked at them in apparent anger. (p. 224)

Among humans, early manifestations of the desire for coherence emerges in the form of a predisposition to find patterns and regularities. Some have even contended that newborns possess the precursors to a desire for coherence (Sluyters et al., 1990). This makes sound evolutionary sense, for without such a predisposition, children would be incapable of learning (e.g., Guidano & Liotti, 1983; Heine, Proulx, & Vohs, 2006). Popper (1963), for example, contended that all learning is based on the perception of regularities and the feelings of coherence that this perception produces.

   As children mature and their knowledge systems become more and more detailed, their desire for regularity and coherence begins to influence an increasingly wide range of responses. A desire for coherence even shapes musical preferences. Within any given epoch, a consensus emerges regarding pleasant versus unpleasant interval sizes. Whereas the Greeks were partial to octaves, later musicians developed a fondness for shorter intervals. Such efforts to innovate often elicited stiff resistance from those who found that the shorter intervals frustrated their desire

for coherent patterns. For example, when some 14th-century vocalists began singing in thirds, Pope John XXII stepped in and issued a decree against the practice. It took nearly half a century before the Church finally relented and welcomed thirds into the fold (e.g., Lecky, 1945). Even today, people typically express ambivalence when they first encounter unfamiliar tonal combinations or rhythmic variations (e.g., the flatted-9ths and -5ths common in jazz). Only after the new patterns have become integrated with their knowledge structures (i.e., "coherent") do people come to enjoy new tonal combinations.

STRIVING FOR THE COHERENCE OF SELF-KNOWLEDGE

A crucial characteristic of the desire for coherence can be appreciated by comparing it to a related but distinct propensity, the desire for consistency. Consistency strivings are typically conceptualized as *ahistorical* in that they deal only with information present in the situation at hand. For example, in dissonance theory's forced compliance paradigm (e.g., Festinger & Carlsmith, 1959), participants presumably derived their attitudes by combining information regarding behaviors they had just enacted with information about potentially relevant situational pressures. Importantly, potentially relevant self-views were ignored. In contrast, coherence strivings involve individuals' efforts to understand their recently enacted behaviors in light of their self-views. Because self-views presumably summarize past experiences, coherence strivings are *necessarily* historical in that they require individuals to reconcile information available in the present situation with pre-existing knowledge, most importantly knowledge of oneself (see also Swann, 1990; Swann, Rentfrow, & Guinn, 2003).

   In principle, any knowledge might provide grist for the coherence strivings mill. In practice, however, information regarding the self will be particularly influential in coherence strivings because it is so extensive. That is, the sheer abundance of information determines the certainty with which it is held, and certainty determines the weight information is accorded in coherence strivings (Swann, 1983).

   Powerful testimony to the capacity of self-knowledge to guide coherence strivings comes from several case studies reported in the 1960s. The cases involved individuals who underwent an innovative eye surgery developed by Italian surgeon Benedetto Strampelli. By carefully grafting an acrylic lens onto the eye, surgeons were able to restore sight to patients who had been blind for decades. Strampelli expected that potential beneficiaries of his new procedure would line up at his door and that their newly acquired sightedness would vastly improve the quality of their lives. Unfortunately, there was a fly in the ointment, for he found that many of his patients could not readily negotiate the shift from being blind to being sighted.

   Sociologist Robert Scott reported an illustrative case study. The patient was a middle-aged woman who had been blind since the age of 6. She had valiantly overcome her disability, graduating from high school and college with honors and obtaining a postdoctoral degree. When Scott met her, she was living a very active and satisfying life: The head of a major rehabilitation clinic in New York, she enjoyed a happy marriage and was the devoted mother of two teenage daughters (Scott, 1991; cf. Sacks, 1993). Then she underwent Strampelli's sight-restoring surgery. Immediately after the "miraculous" operation, she was euphoric. Convinced

that she was on the threshold of a much richer life, she eagerly embraced the world of visual images that had been denied to her since childhood.

As the full implications of her newfound sightedness slowly sank in, however, her euphoria gradually gave way to ambivalence and then to depression. As her depression deepened, her life slowly began to unravel. First, her employer insisted that she take a leave of absence. Then her husband filed for divorce. Eventually, even her children and friends became disaffected with her. When Scott last heard from her, the woman's life was descending into an accelerating downward spiral.

Apparently, the woman's efforts to take on the identity of a sighted person (i.e., the self-views, roles, etc.) were stymied by obstacles that no one had anticipated. After her operation, she sensed that people expected her to act differently. Yet, she couldn't put her finger on precisely how her new "self" was supposed to act or how this new self "fit in" to a physical and social landscape that was so radically altered. She had no idea how to "act sighted." In a very profound sense, she was forced to relearn the world around her and her place within it, painstakingly translating every detail of the tactile world that she knew so well into the bright and colorful images of a perplexing new visual world. In many ways, she felt childlike and naive, confronted by a reality that she only dimly comprehended (for a discussion of perceptual difficulties often associated with this surgery, see Valvo, 1971). The result was the nagging sense that she had lost the old self that had defined her existential reality. She constantly complained that her life now lacked a feeling of coherence and that her old confident sense of self had eluded her. When asked to describe herself, she used terms like "hollow," "vacuum," and "nothingness."

The intense ambivalence of such suddenly sighted persons defies the common assumption that all people want, and will eagerly embrace, certain "objectively" desirable states such as being sighted. Although this phenomenon may seem counterintuitive, it makes sense once one considers that their newfound sightedness challenged a core component of their identities. Such challenges are enormously significant because people's identities are foundational aspects of their knowledge system that determine the sustainability of a vast collection of associated beliefs. For example, the belief that one is, or is not, sighted will enable them to generate a wide range of predictions regarding the reactions of others within almost every aspect of one's personal and professional life. This helps explain why people will work to maintain their core identities, even when doing so comes at considerable personal cost.

SELF-VERIFICATION: STRIVING FOR A COHERENT AND STABLE SELF

People infer their self-views from their experiences, especially the treatment they receive from others (Cooley, 1902; Mead, 1934). That is, people infer that they *deserve* the treatment they receive, particularly from those who are important to them and whose opinions they trust (Rosenberg, 1973). In addition, people learn about themselves by comparing themselves to other people (Festinger, 1957) and by observing their own behavior in various situations (Bem, 1972). In short, people do not just "know" who they are; they systematically construct their self-views from several distinct sources of information.

Once people form self-views, they rely on them to guide their behavior and make sense of the world around them. Because self-views serve these crucial pragmatic

and epistemic functions, over time people become increasingly reliant on them, and grow to welcome information that confirms their self-views. This desire for self-confirmation grows in significance until it becomes a centerpiece of people's very humanity: "The basis of man's life with man is twofold, and it is one—the wish of every man to be confirmed as what he is . . . and the innate capacity of man to confirm his fellow man in this way" (Buber, 1951, p. 105).

When Buber spoke of the wish of every person to be confirmed as "what he is," he referred to a desire to validate relatively stable, core self-views, those self-views through which people make sense of their worlds. For Buber, then, stable self-views do more than merely grease the wheels of social interaction; they provide the "glue" that hold people's perceptions of reality together, giving them a vital sense of psychological coherence. From this perspective, stable beliefs and the feelings of coherence they engender are as integral to our mental well-being as air is to our physical survival. To persons struggling to predict and control their worlds, this sense of coherence is what the purr of the automobile is to the driver or the roar of the jet engine is to the pilot: a signal that everything is operating smoothly. Feelings of coherence tell people that their perceptions of reality are accurately reflecting reality.

In a sense, a coherent and stable self conveys nothing more than one's ability to accurately surmise the nature of reality. Nevertheless, most abilities are tied to particular tasks or domains, such as thinking quickly, talking clearly, or singing beautifully. The implications of the sense of coherence associated with stable beliefs, however, are more widespread, as they pertain to the ability to understand reality and to determine our relation to it. Depriving people of this special form of competence thus poses a profound existential threat. So deprived, people will not merely feel incompetent, they will fear that their very existences, their moorings in the world, are in jeopardy. In the most serious cases, they will fear that their sense of self is fragmenting or disintegrating. Existential philosopher May (1979) explained that because such anxiety:

> attacks the foundation (core, essence) of the personality, the individual cannot "stand outside" the threat, cannot objectify it, and thereby is powerless to take steps to meet it . . . [Such anxiety] is described on the philosophical level as the realization that one may cease to exist as a self. (pp. 192-193)

Prescott Lecky (1945) was among the first to appreciate and articulate the critical role of stable self-views in fostering a need for coherence. He proposed that stable self-views offer people a strong sense of coherence which motivates them to maintain these self-views. Related ideas surfaced again a decade or two later in the form of several self-consistency theories (e.g., Aronson, 1968; Festinger, 1957; Secord & Backman, 1965). Nevertheless, the most prominent consistency theorists transformed Lecky's theory in a fundamental way, for they abandoned Lecky's emphasis on the role of chronic self-views in consistency strivings. Most strikingly, the most influential of these theories, cognitive dissonance (Aronson, 1968; Festinger, 1957), emphasized the ways in which people construct self-consistency by bringing their transient self-images into accord with their overt behaviors. This is precisely the opposite of Lecky's conviction that stable self-views organize people's efforts to maximize coherence.

Self-verification theory (Swann, 1983) subsequently revisited Lecky's emphasis on people's efforts to seek feelings of coherence by stabilizing their chronic self-views. The theory holds that as people gather more and more evidence to support their self-views, they become increasingly certain of them. As the certainty of self-views increase, people can feel more confident in relying on them as a means of understanding themselves and their relation to the world around them. The sheer weight of the evidence buttressing self-views will make people especially invested in them and thus more motivated to strive to confirm them. Moreover, this should hold whether the self-views in question are positive or negative.

Researchers have reported considerable support for self-verification strivings. For example, as early as mid-childhood (Cassidy, Ziv, Mehta, & Feeney, 2003), individuals prefer and seek self-verifying evaluations. By the time people have matriculated in college, the tendency to seek self-verifying evaluations has become quite robust. Indeed, there are now dozens of studies that support the notion that just as people with positive self-views preferentially seek positive evaluations, those with negative self-views preferentially seek negative evaluations (e.g., Hixon & Swann, 1993; Robinson & Smith-Lovin, 1992; Swann, Hixon, Stein-Seroussi, & Gilbert, 1990; Swann, Pelham, & Krull, 1989; Swann, Wenzlaff, Krull, & Pelham, 1992; Swann, Wenzlaff, & Tafarodi, 1992). Moreover, people with negative self-views appear to be truly drawn to self-verifying interaction partners rather than simply avoiding non-verifying ones. For example, when given both options, people with negative self-views chose to interact with a negative evaluator over participating in another experiment. More impressive, when people find that their relationship partners see them either more or less favorably than they see themselves, they are less intimate and more likely to divorce their partner (for a meta-analytic review, see Kwang & Swann, 2010). Finally, people are particularly likely to seek self-verifying evaluations if their self-views are confidently held (e.g., Pelham & Swann, 1994; Swann & Ely, 1984; Swann, Pelham, & Chidester, 1988), important (Swann & Pelham, 2002), or extreme (Giesler, Josephs, & Swann, 1996).

In recent years, researchers have extended the earlier work which focused on personal self-views by showing that people strive for verification of collective self-views, which are personal self-views linked to social groups (Chen, Chen, & Shaw, 2004; Chen, Shaw, & Jeung, 2006). For example, Chen et al. (2006) reported that those who received greater verification of self-attributes judged to be prototypical of their group were more committed to the group. In addition, stronger collective verification was found among group members who were most identified with the group, evidenced by greater correspondence between self and other ratings on group-relevant attributes. This finding parallels prior evidence that verification efforts are strongest when self-views are relatively important.

A further extension involved demonstrations that people seek verification of in-group identities that they do not *personally* possess (Gómez, Seyle, Huici, & Swann, 2009). For instance, an American may subscribe to the in-group identity that Americans are ambitious but see herself as content and relaxed. Regardless of the nature of their personal self-views, people preferred to interact with evaluators who verified their in-group identities, and this was true whether the identities were positive or negative. Taken together, these studies point to the generality of self-verification strivings, in that they influence responding involving one's personal self, the collective self, and group identities that are not even descriptive of oneself.

There is also some evidence that the desire for coherence motivates self-verification activities. In one study, the researchers (Swann, Stein-Seroussi, & Giesler, 1992) had participants with positive and negative self-views think out loud into a tape recorder as they selected an interaction partner who had previously evaluated them. As in the earlier studies, people with positive self-views tended to choose the positive evaluator and people with negative self-views tended to choose the negative evaluator. The audio recordings provided direct support for self-verification theory. The remarks of self-verifiers—both those with negative self-views who chose negative partners and those with positive self-views who chose favorable partners—indicated that they preferred partners who made them feel that they knew themselves. For example, many expressed concern with the match between the partner's evaluation and what they knew to be true of them: "Yeah, I think that's pretty close to the way I am. [The negative evaluator] better reflects my own view of myself, from experience." Note, however, that there was also evidence that participants with negative self-views did not display a masochistic fervor to receive negative evaluations; instead, they seemed torn and ambivalent as they chose negative partners. One person with negative self-views, for example, noted that:

> I like the [favorable] evaluation but I am not sure that it is, ah, correct, maybe. It *sounds* good, but [the negative evaluator] . . . seems to know more about me. So, I'll choose [the negative evaluator].

There was also evidence that the desire for coherence was not restricted to purely epistemic considerations but also extended to a desire for coherent and predictable *social relationships*. For example, some self-verifiers voiced a concern with getting along with the evaluators during the forthcoming interaction: "Since [the negative evaluator] seems to know my position and how I feel sometimes, maybe I'll be able to get along with him."

In short, the results of the think aloud study indicated that both epistemic and interpersonal considerations moved participants to choose partners whose evaluations confirmed their self-views. Together, these considerations gave rise to feelings of coherence that are thought to be the goal of self-verification strivings (for a further discussion of the reasons underlying self-verification strivings, see Swann, 2011). In the following section, we consider how these strivings may underlie and motivate compensatory activities.

SELF-VERIFICATION STRIVINGS AND COMPENSATORY ACTIVITY

A key issue in this article is the role that self-verification strivings play in people's responses to threat. Self-verification theory assumes that feedback that challenges people's negative (or positive) self-views will trigger compensatory efforts to reaffirm these self-views. Thus, for example, when people learn that others do not see them as they see themselves, they compensate by working to bring that person to view them as they view themselves—even when this entails lowering an interaction partners' overly *positive* evaluation of a negative quality.

The results of several studies (e.g., Brooks, Swann, & Mehta, 2011; Swann & Hill, 1982; Swann & Read, 1981; Swann, Wenzlaff, & Tafarodi, 1992) offer evidence for compensatory self-verification strivings. For example, participants in one study were given feedback that indicated that a soon-to-be interaction partner found them either assertive or unassertive and were then given the opportunity to interact with the interaction partner. If the feedback challenged their self-views, both dominant and submissive participants attempted to rectify the situation by acting in a manner opposite to what the feedback indicated (Swann & Hill, 1982). In another study, depressed or non-depressed students learned that clinicians had evaluated them in a favorable or unfavorable manner. They then received an opportunity to seek further evaluations that were either positive or negative. When non-depressed participants received negative feedback on one dimension (social skills), they amplified their search for positive feedback on unrelated dimensions (athletic and artistic skills). On the other hand, when depressed participants received positive feedback on social skills, they intensified their quest for negative feedback regarding their athletic and artistic skills (Swann, Wenzlaff, & Tafarodi, 1992, Study 2).

People will also display compensatory reactions in response to the mere suggestion that someone *might* view them in a non-verifying manner—even when the feedback that reaffirms the self-view that has been challenged is undeniably negative. People who viewed themselves as either likable or dislikable learned that an upcoming interaction partner might perceive them positively or negatively. In a subsequent interaction, those who viewed themselves as likable behaved in a particularly likable manner when they suspected a negative evaluation. In contrast, those who viewed themselves as dislikable behaved in a particularly unlikable manner when they suspected a positive evaluation (Swann & Read, 1981, Experiment 2).

A later study showed that compensatory reactions could be triggered without explicitly challenging people's self-views; instead, merely preventing people from behaving in a self-verifying manner was sufficient. In this study, people who perceived themselves as assertive or unassertive were placed in a situation in which they were, or were not, allowed to voice their opinions regarding an issue about which they cared. Depriving participants of the opportunity to verify their self-views triggered compensatory activity. For example, when participants who perceived themselves as assertive were required to remain silent, they subsequently compensated by becoming particularly assertive. Apparently, people who have particular identities like to "act the part" and preventing them from doing so causes them to redouble their efforts to act in a self-verifying manner at a later time (Brooks, Mehta, & Swann, 2010).

Compensatory self-verification strivings may also influence the pro-group behaviors of people who are "fused with" (deeply aligned with) a group. This research was based on the assumption that because fused individuals have a deep emotional connection to the group, they develop highly permeable borders between their personal and social selves. As a result, they may feel that they can address challenges to their personal self-views by enacting compensatory activities associated with the fused social identity.

To test this hypothesis, researchers first challenged the personal self-views of fused and non-fused persons by providing them with unexpectedly positive feedback about personal qualities (of course, providing participants with unexpected-

ly *negative* feedback should also trigger compensatory activity, but such activities could reflect either self-verifying or self-enhancement motivations, an ambiguity that the investigators sought to avoid). After the challenge manipulation, the researchers assessed the degree to which participants endorsed pro-group behaviors. As predicted, challenging participants' personal self-views increased subsequent endorsement of pro-group activity among highly fused persons but not among non-highly fused persons (Swann, Gómez, Seyle, & Morales, 2009, Experiments 1 and 2). Here, people's efforts to compensate for challenges to one aspect of the self-system triggered compensatory activity within a somewhat unrelated aspect of the self-system.

   In summary, there is converging evidence that when people feel that their strivings for self-verification have been frustrated, they will enact compensatory efforts to elicit confirming reactions. These compensatory activities may take various forms, including feedback seeking or adopting interaction styles that are designed to bring others to see them as they see themselves. In the section that follows, we consider several independent explanatory frameworks that social psychologists have advanced to explain compensatory activity. We suggest that the coherence framework that we have presented here can explain the findings generated by each of these rival frameworks, but none of these rival frameworks has inspired tests of the hypothesis that people with negative self-views engage in compensatory activity in the wake of challenges to their negative self-views. We will return to this theme in the concluding section.

IS COHERENCE THE CORE MOTIVE UNDERLYING COMPENSATORY REACTIONS TO THREAT?

We have argued here that a coherence framework offers an especially compelling framework for understanding compensatory activity in response to threats. Yet the other articles featured in this special issue advance alternative explanations of such compensatory activity. In what follows, we critically review the viability of five frameworks that have been developed to explain compensatory activities, namely self-enhancement, uncertainty reduction, system justification, terror management, and meaning maintenance formulations. We suggest that although each of these frameworks can explain the compensatory activities of people with positive self-views, only the coherence framework we describe here has been used to understand the compensatory activities of people with negative self-views.

SELF-ENHANCEMENT

Since Allport (1937) introduced the notion that there exists a "vital and universal human need to view oneself positively," social psychologists have been smitten with what has come to be known as the self-enhancement motive. Modern self-enhancement theorists assume that people engage in a host of self-serving biases that presumably enable them to maintain positive conceptions of themselves (see Leary, 2007, for a review). One of the most prevalent of such biases is the tendency to attribute positive outcomes to the self and negative outcomes to external circumstances (e.g., Blaine & Crocker, 1993; Fitch, 1970). People also routinely claim

to be better off than the "average person" (e.g. Alicke & Govorun, 2005). Moreover, when people receive feedback, they selectively attend to information that preserves their positive self-views (Ditto & Lopez, 1993) and report feeling better after receiving positive as compared to negative feedback (e.g., Korman, 1968; Swann, Griffin, Predmore, & Gaines, 1987). Given the apparent pervasiveness of self-enhancement strivings, it is not surprising that it has been incorporated into many influential theories, including terror management (Greenberg, Pyszczynski, & Solomon, 1986), meaning maintenance (Heine, Proulx, & Vohs, 2006), self-evaluation maintenance (Tesser, 1988), positive illusions (Murray, Holmes, & Griffin, 1996; Taylor & Brown, 1988), self-affirmation (Steele, 1988), and contingencies of self-worth (e.g., Crocker & Wolfe, 2001).

Of particular relevance to this special issue, self-enhancement strivings have been implicated in compensatory reactions to threat. That is, researchers have proposed that when people encounter a challenge to their positive conceptions of themselves, they will think and behave in ways that are designed to support a more positive conception of self. For example, after interacting with someone who has a negative view of them, people were especially inclined to emphasize their positive traits (Baumeister & Jones, 1978). Similarly, after failure, people emphasize the strength of their social skills (Brown & Smart, 1991). Other compensatory activities include derogating others (Wood, Giordano-Beech, & Ducharme, 1999), making self-serving attributions (Sherman & Kim, 2005), self-handicapping (Tice, 1991), or questioning whether an evaluative task is actually important or meaningful (e.g., Brown, Dutton, & Cook, 2001; Tesser & Paulhus, 1983).

However plausible such evidence for self-enhancement strivings may appear, it is marred by a serious interpretative difficulty. The ambiguity stems from the fact that people with positive self-views are typically overrepresented in the populations from which research participants have been drawn. Indeed, careful surveys have indicated that fully 70% of people in the general population view themselves positively (Diener & Diener, 1995). This means that the vast majority of individuals within a sample of unselected participants will have positive self-views. As such, the form of evidence usually used to support self-enhancement strivings—a tendency for people to seek or preferentially recall positive feedback *on average*—could just as well reflect a tendency for the majority of participants to strive for self-verification.

The plausibility of the notion that putative self-enhancement strivings may actually reflect self-verification processes is bolstered by evidence that when the two theories make competing predictions, self-verification typically overrides self-enhancement. Consider, for example, what happens when researchers measure participants' self-views and determine how participants with positive versus negative self-views respond to feedback. Whereas self-enhancement theory says that people should be equally (or more) inclined to display a preference for positive evaluations, self-verification theory says that people with positive self-views should prefer positive evaluations but people with negative self-views prefer negative evaluations. The research literature suggests in such tests, self-verification strivings tend to prevail. For example, in investigations of feedback seeking (e.g., Swann, Pelham, & Krull, 1989) or memory for feedback (e.g., Swann, Griffin, Predmore, & Gaines, 1987), just as people with positive self-views seek and preferentially recall positive feedback, people with negative self-views seek and preferentially recall negative feedback. More convincing, a recent meta-analysis (Kwang &

Swann, 2010) indicated that a self-verification pattern characterized people's "cognitive reactions" to social feedback, which includes perceptions of the accuracy of feedback, recall, attribution processes, overclaiming, and the like—contrary to the common assertion that such reactions are the domain of self-enhancement strivings (e.g., Baumeister, 1998; Sedikides & Gregg, 2008). Note also that the only other extensive review of this literature (Shrauger, 1975) reached the same conclusion.

Furthermore, self-verification theory is unique in its capacity to explain the compensatory activities of people with negative self-views. For example, when people with negative self-views suspect that an interaction partner perceives them positively, they intensify their efforts to evoke negative reactions (Swann & Read, 1981). Similarly, when people with negative self-views actually receive positive feedback, they redouble their efforts to acquire negative feedback (Swann, Wenzalff, & Tafarodi, 1992). Similarly, other research also indicates that people with negative self-views fail to display the compensatory activities that people with positive self-views routinely display (Heimpel, Wood, Marshall, & Brown, 2002). For example, when participants with high self-esteem experienced failure, they subsequently compensated by working to improve their mood states. In contrast, low self-esteem displayed few such compensatory reactions. In summary, the research literature indicates that self-verification theory can explain the compensatory activities of people with positive self-views but self-enhancement theory is unable to explain why people with negative self-views engage in compensatory activity in the wake of positive evaluations.

UNCERTAINTY REDUCTION

Just as self-enhancement theorists have attributed compensatory activity to the receipt of negative information about the self, uncertainty-reduction theorists have contended that compensatory activity is triggered by information that fosters uncertainty about the self (e.g., Baumeister, Shapiro, & Tice, 1985). Nevertheless, researchers working within this tradition have focused exclusively on how people cope with negative information that causes them to become uncertain of their positive, self-enhancing beliefs about themselves. Given this lopsided focus on threats to positive self-views, uncertainty reduction theory is a member of the larger class of self-enhancement approaches.

Researchers interested in the effects of self-uncertainty have been especially creative in identifying novel compensatory strategies in the wake of threats. For example, participants respond to threats to certainty by emphasizing the importance of fairness (van den Bos, 2001), professing their religious faith (Wichman, 2010), and increasing their support for various social attitudes (McGregor, Zanna, Holmes, & Spencer, 2001). The common element underlying such compensatory activities is that they all involve attempts to reaffirm people's longstanding beliefs.

Self-affirmation theory (Steele, 1988; see McQueen & Klein, 2006, for a review) is one variation of uncertainty approaches. The theory focuses on how people react when they encounter challenges to their positive self-views—specifically, challenges to the sense of being a moral, adaptive, and capable person. It assumes that the self-system is composed of many interacting parts. This means that when people encounter threats, some components of the self-system can shore up other components of the system. Thus, defensive reactions to negative feedback can be

attenuated by inoculating recipients of the feedback by having them write about a self-view that was both positive and important (Wichman, 2010). In such instances, feelings of self-uncertainty are presumed to be reduced through reaffirming self-concepts that support the overall self-system (e.g., McGregor et al., 2001). It is unclear, however, whether the critical feature of the self-view that is affirmed is its positivity, importance, or both.

Although the precise role of self-enhancement strivings in evidence of uncertainty reduction is unclear, what *is* clear is that insofar as the self-enhancement assumption is integral to the theory, the theory suffers from the same liability as self-enhancement theory itself. That is, self-enhancement formulations cannot explain why evaluating people with negative self-views favorably triggers compensatory activity on the same dimension (e.g., Swann, Wenzlaff, & Tafarodi, 1992) or completely unrelated dimensions (e.g., Swann et. al, 1992). This suggests that both formulations offer less parsimonious accounts of compensatory activity than our coherence approach.

SYSTEM JUSTIFICATION AND PERSONAL CONTROL

System justification theorists hold that people possess a strong desire to impute legitimacy to the status quo, which is held as good and desirable. This desire is presumably manifested in a tendency to perceive the social system and its components as "good, fair, natural, desirable, and even inevitable" (Jost, Banaji, & Nosek, 2004). Most strikingly, system justification researchers have demonstrated the presence of an *out*-group bias wherein people elevate their perceptions of members of a group that is suppressing their own group. This bias has surfaced in research on perceptions associated with gender (Rudman & Kilianski, 2000), race (Nosek, Banaji, & Greenwald, 2002), and school affiliation (Lane, Mitchell, & Banaji, 2005).

The bias toward groups that hold a dominant position over one's own group presumably demonstrates the individual's support for the status quo itself (Dasgupta, 2004). Indeed, when convinced that changes in the status quo are inevitable, participants strive to defend and legitimize the change regardless of its nature. For example, students who were led to believe that tuition prices were poised to change sought to rationalize the change regardless of whether tuition was increasing or decreasing (Kay, Jimenez, & Jost, 2002). These findings are striking for the same reason that evidence that people with negative self-views embrace negative evaluations and evaluators is striking: in both instances, people respond in ways that seemingly prioritize their desire for coherence over a competing desire for positive or self-enhancing outcomes.

System justification strivings may reflect people's efforts to cope with threats to their sense of personal control (e.g., Abramson, Seligman, & Teasdale, 1978; Pittman & Pittman, 1980; Seligman, 1976). For example, researchers have recently reported that threatening people's sense of personal control can trigger compensatory activity in that people who are deprived of a sense of control are subsequently more likely to express belief in God (Kay, Gaucher, Napier, Callan, & Laurin, 2008). Threats to personal control also amplify the extent to which people support the government (Kay et al., 2008), recognize patterns in and endorse superstitious rituals (Whitson & Galinsky, 2008), and assert that one has a powerful and controlling personal enemy (Sullivan, Landau, & Rothschild, 2010).

Although the outcome measures in each of the foregoing studies are quite distinct from one another, they all reflect efforts to inject some modicum of order and coherence into the situation at hand (e.g., Gaucher et al., 2010; Kay, Whitson, Gaucher, & Galinsky, 2009). Support for this assumption comes from evidence that depriving people of control increased support for the government only when the government was perceived as a benevolent entity (Kay et al., 2008). Similarly, control deprivation increased the belief in God only when participants were primed with thoughts of God as a direct interventionist rather than merely as a creator (Kay et al., 2008) and it fostered belief in superstitions only when the superstitions were seen as part of a cause-and-effect pattern (Whitson & Galinsky, 2008).

Evidence that control deprivation selectively increases endorsement of beliefs that tend to legitimize their beliefs is important because it suggests that control deprivation may serve to bolster the apparent coherence of the world around them. From this vantage point, phenomena such as the out-group bias may operate in the service of the same overarching motivational mechanism that gives rise to self-verification processes. If so, the self-enhancement assumption inherent in theories such as system justification is superfluous and unnecessary.

TERROR MANAGEMENT THEORY

The Terror Management formulation (Greenberg, Pyszczynski, & Solomon, 1986) focuses on how people cope with the existential anxiety that theoretically arises from awareness of their own mortality. To diminish their fear of death, people work to convince themselves that they are worthwhile actors who are playing an important role in a world that has meaning and purpose. Hence, the motivational engine that drives terror management is a blend of self-enhancement (i.e., people want to see themselves as good and worthwhile) and coherence motives.

As the theory would predict, people react strongly when their mortality is made salient (for a review, see Solomon, Greenberg, & Pyszczynski, 2004). In dozens of highly provocative studies, researchers have shown that those who are reminded of their own mortality are more concerned with maintaining high self-esteem (Greenberg et al., 1992) and are more inclined to protect and work to maximize their self-esteem (Taubman Ben-Ari, Florian, & Mikulincer, 1999). Similarly, those high in mortality salience are especially motivated to defend their cultural world-views by derogating people who challenge these beliefs (e.g., Florian & Mikulincer, 1997; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). The tendency for mortality salience to trigger such compensatory activities is diminished among people with elevated levels of self-esteem (e.g., Greenberg et al., 1992), and among those whose hope for an afterlife has been activated (Dechesne et al., 2003).

As impressive as evidence compiled by terror management theorists is, some have questioned whether terror management is actually a distinctive motive. For example, Hart and colleagues independently threatened each of three self-motives (agency, coherence, and communion) and found that, at least among some individuals (those who had insecure attachment styles), each type of threat produced defensive reactions that resembled those produced by mortality salience manipulations (Hart, Shaver, & Goldenberg, 2005; for a related view, see McGregor, Gailliot, Vasquez, & Nash, 2007). Although people surely fear their own death for multiple reasons, we suspect that the central problem with death is that thinking

of oneself as dead challenges the very core of people's self-definition. That is, as James (1890/1950) noted in his classic discussion of the "I," a defining quality of the self is that one is an active agent who experiences the world, sets agendas, and take steps to accomplish those agendas in the future (e.g., Swann & Buhrmester, 2012). With death, the "I" ceases to exist. Death also eliminates James's "me," the self as object which is composed of various qualities (e.g., athletic, intelligent, shy, etc.). As such, death is non-verifying feedback on steroids, as it simultaneously nullifies both the "I" and "me." From this vantage point, the powerful consequences of raising the salience of mortality may reflect a tendency for death to violate people's sense of coherence in a uniquely powerful way.

MEANING MAINTENANCE MODEL

The mechanisms underlying terror management theory have also been questioned by advocates of the Meaning Maintenance Model (Heine, Proulx, & Vohs, 2006). The latter formulation asserts that people strive to avoid existential anxiety by affirming the coherence and consistency of their belief systems and resisting influences that threaten or contradict these belief systems (Proulx & Heine, 2006; Proulx & Inzlicht, in press). The authors attribute these efforts to a fundamental motivation to preserve "meaning," which reflects all of the connections we have developed between ourselves and objects in the world around us (Heine et al., 2006).

The meaning maintenance model shares elements of several of the approaches we have discussed in this article. Like terror management theory, it is fundamentally an existential theory, concerning itself with mankind's struggle to assert our existence in the world. It also resembles self-affirmation theory. Most notably, the construct of "fluid compensation" holds that we cope with threats to meaning by bolstering an independent relational system that has not been threatened (Heine et al., 2006). Yet, perhaps the most striking similarity between the maintenance model and the other approaches we have discussed here is its embrace of coherence strivings and the preservation of meaning systems, the very processes that give rise to self-verification strivings.

Given the striking similarity of the meaning maintenance and self-verification approaches, it is interesting to consider how the two formulations differ. One difference is that self-verification theory places more emphasis on the pragmatic and interpersonal origins of the desire for self-confirmation. During development, children are thought to learn that their social interactions are smoother and more gratifying if their partners see them as they see themselves. As people mature, they internalize the reactions of others into self-views and use these self-views to guide their behavior. Eventually, the self-verifying reactions that were originally valued due to their interpersonal utility come to offer feelings of coherence that become valued in their own right.

Empirically, the two theories have focused on people's efforts to verify distinctive aspects of the self. That is, whereas self-verification researchers have documented people's efforts to verify negative as well as neutral and positive representations of self, meaning maintenance theorists have restricted their focus to neutral and positive aspects of self. Moreover, whereas self-verification researchers have restricted their focus to explicit representations of the self, what James (1890/1950) referred to as the "Me," meaning maintenance researchers have docu-

mented people's efforts to verify implicit beliefs associated with the nonconscious agent which experiences reality and regulates action, what James referred to as the self-as process or the "I." In fact, meaning maintenance researchers have shown that threat manipulations that violated *implicit* perceptual expectancies triggered compensatory activity (e.g., Proulx & Heine, 2008), even if the compensatory activity involved performances of which participants had little conscious awareness (e.g., learning coherent statistical patterns in letters strings; Proulx & Heine, 2009).

CONCLUSIONS

All of the approaches reviewed in this article agree on one thing: When people's beliefs about themselves are threatened in some way, they will take steps to compensate by attempting to restore things to the way they were. The coherence framework that we champion here likewise embraces this notion. We disagree with most of our colleagues, however, in the most appropriate characterization of such processes. To a greater or lesser extent, the other formulations have emphasized how compensatory reactions shape people's reactions to threats to people's positive self-views, usually in the form of negative evaluations or feedback. We embrace a broader view of compensatory processes. Noting that because roughly one third of people in the world have negative self-views (Diener & Diener, 1995), threats may also come in positive packages. That is, for people with negative self-views, positive rather than negative experiences will be threatening. We present evidence that supports this possibility. Most important, people react to challenges to their negative beliefs about themselves by engaging in compensatory activity that is designed to reaffirm these negative self-views (e.g., Swann & Read, 1981; Swann, Wenzlaff, & Tafarodi, 1992). From this vantage point, threats trigger compensatory activity because they challenge people's perceptions of coherence rather than their desire for self-enhancement.

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