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Better, Stronger, Faster Self-Serving Judgment, Affect Regulation, and the Optimal Vigilance Hypothesis

Neal J. Roese¹ and James M. Olson²

¹University of Illinois at Urbana–Champaign

²University of Western Ontario, London, Ontario, Canada

Abstract

Self-serving judgments, in which the self is viewed more favorably than other people, are ubiquitous. Their dynamic variation within individuals may be explained in terms of the regulation of affect. Self-serving judgments produce positive emotions, and threat increases self-serving judgments (a compensatory pattern that restores affect to a set point or baseline). Perceived mutability is a key moderator of these judgments; low mutability (i.e., the circumstance is closed to modification) triggers a cognitive response aimed at affect regulation, whereas high mutability (i.e., the circumstance is open to further modification) activates direct behavioral remediation. Threats often require immediate response, whereas positive events do not. Because of this brief temporal window, an active mechanism is needed to restore negative (but not positive) affective shifts back to a set point. Without this active reset, an earlier threat would make the individual less vigilant toward a new threat. Thus, when people are sad, they aim to return their mood to baseline, often via self-serving judgments. We argue that asymmetric homeostasis enables optimal vigilance, which establishes a coherent theoretical account of the role of self-serving judgments in affect regulation.

People think highly of themselves. They see themselves as more honest, more talented, and more hard working than others; they see rosy futures and expect continual improvement; and they look down on peoples of other tribes and nations. Self-serving judgments, in which the self is deemed superior to others, are common, but they also vary from moment to moment within individuals. If inaccurate, they can prove harmful, blinding the individual to prudent courses of action (Dunning, Heath, & Suls, 2004). At the same time, however, much research has suggested that self-serving judgments are an intrinsic component of mental health and even physical well-being (Bonanno, 2004; S.E. Taylor et al., 2003).

In this article, we examine the affective basis of self-serving judgment, focusing on the regulation of affect on a momentary basis. Regulation, such as in the operation of a thermostat, involves preservation of an internal state (e.g., generating heat on a cold day to maintain temperature at a set-point). Affect (emotions, mood, etc.) is an example of a psychological state that is regulated to preserve a stable set point (Fujita & Diener, 2005; Larsen, 2000). There are many ways that humans regulate their affect, such as by seeking out positive stimuli (e.g., food), distracting themselves from negative stimuli (e.g., avoiding dissonant information), and retrieving positive memories (e.g., thinking about an afternoon on the beach). However, the most flexible—and perhaps the most common—affect regulation strategy is a judgment that is self-serving.

Our goal is to address the underlying reasons why affect regulation is necessary and why a set point is adaptive. Self-serving judgments feel good, and threatening or unpleasant events

increase one's tendency to form self-serving judgments, thus suggesting a compensatory loop. The pattern is asymmetric, however, in that benefits or pleasant events do not similarly elicit self-derogatory comparisons. Instead, following a benefit, one's affect passively returns to the set point. We suggest a new explanation of this pattern: the *optimal vigilance hypothesis*. Threats represent acute problems that demand quick behavioral responses (e.g., predators require rapid avoidance), because the cost of failure can be severe (e.g., death). In contrast, the behavioral implications of benefits are less pressing (e.g., abundant food may be pursued at a leisurely pace), partly because the cost of failure is less severe (e.g., it takes longer to starve than to be eaten by a predator).

Precisely because of this brief temporal window in which responses to threat must occur (e.g., fight or flight), an active mechanism is needed to rapidly restore negative (but not positive) affective shifts back to the set point. Human perception, both physical and psychological, primarily captures affective changes from the current state. Thus, without an active reset, an earlier threat would leave the organism at suboptimal sensitivity for detecting a new threat. In other words, to optimally perceive new threats, affect must be returned to a set point. The optimal vigilance hypothesis establishes a coherent theoretical account of the affect regulatory basis of self-serving judgment and, as we explain later in this article, contains important implications for our overall understanding of human emotion. In this article, we present five principles that describe (in general terms) the affect regulatory basis of self-serving comparisons (see Table 1). We should note, however, that we do not argue that threat is the only determinant of self-serving judgments, nor do we argue that threat always causes self-serving judgments. We discuss these caveats in the Implications and Conclusions section.

PRINCIPLE 1: ANY SELF-RELEVANT JUDGMENT MAY SUBSERVE AFFECT REGULATION

There are many ways that people may think highly of themselves: They may focus on talent, appearance, past accomplishments, or future prospects. Any and all of these particular domains may be used in a self-versus-other comparison and may be recruited for affect regulation. Any judgment domain may be sculpted rapidly in response to changing circumstances into a judgment that brings positive affect.

With this assertion, we discard the old dichotomy between “hot” affective-enhancement mechanisms and “cold” cognitive mechanisms as explanations of self-serving judgments (cf. Kruglanski, 1996; Kunda, 1990; S.J. Sherman & Sherman, 1999). Instead, we argue that all judgment domains, to the extent that they map onto a self–other template, may be recruited for affect regulation. That is, any type of judgment (from frequency estimates to causal inferences; from trait ascriptions to growth forecasts) may be skewed at a particular moment to become self-serving. Whether a judgment is motivated as a fixed or intrinsic property of that class of judgment is a moot question. Any judgment can be sculpted, “on the fly,” to become self-serving.

The term *self–other template* is defined as follows. “Self” and “other” are two objects that may be compared on any number of dimensions (e.g., height, test performance). These comparisons can be self-serving to the extent that the judgment dimension has evaluative implications: for example, when taller is taken to be better than shorter, or when athletic excellence is valued more than mediocrity. A self-serving comparison may be framed in terms of positive attributes (e.g., outgoing, independent) or negative attributes (e.g., rude, aloof). But whether taking the form of self > other for positive attributes (i.e., self has more good attributes than others have) or self < other for negative attributes (i.e., self has fewer bad attributes than others have), the functional significance remains the same.

The very meaning of *self* and *other* in these comparisons may vary from moment to moment. People may construe their identity in terms of an individual (one's own traits and abilities) but also as part of larger social groupings (romantic couples, occupational groups, or nations; Brewer & Gardner, 1996; Turner, Oakes, Haslam, & McGarty, 1994). In an important sense, these are all different instantiations of self: "my marriage," "my profession," or "my nation." The same may be said for the subjective definition of *other*: People may focus on another individual or on larger groups of other individuals, such as other marriages, other professions, or other nations. To the extent that these comparisons can be used to compare oneself and another, they may all be used in affect regulation. It is worth pointing out that sometimes the *other* may be a contrasting version of the self, such as when people compare themselves now with the way they used to be 10 years ago (Albert, 1977; Pronin & Ross, 2006). Again, the functional significance remains the same.

Obvious Examples

There are so many labels for specific kinds of self-serving judgments that students of these literatures can drown in a sea of jargon. We briefly detail some obvious and not-so-obvious examples below, with the intention of revealing the scope of our analysis, which extends considerably further than previous theoretical reviews.

Attributes—People often think that their traits and abilities are superior to those of other people ("better-than-average effect"; Alicke, 1985; J.D. Brown, 1986; Kruger, 1999; "downward social comparison"; Hakmiller, 1966; S.E. Taylor & Lobel, 1989; Wills, 1981) or that they themselves are better than they used to be ("downward temporal comparison"; Heckhausen & Krueger, 1993; McFarland & Alvaro, 2000; Wilson & Ross, 2000, 2001).

Event Likelihood—People often expect more positive events and fewer negative events to befall themselves than to befall others ("unrealistic optimism"; Buehler, Griffin, & Ross, 1995; L.S. Perloff & Fetzer, 1986; Weinstein, 1980).

Event Frequency—People often recall performing more positive acts and fewer negative acts than they recall others performing (e.g., Allison, Messick, & Goethals, 1989; Crocker, Alloy, & Kayne, 1988; Messick, Bloom, Boldizar, & Samuelson, 1985; Sedikides & Green, 2000; Skowronski, Betz, Thompson, & Shannon, 1991).

Event Impact—People often see negative social or economic forces (rising unemployment, negative political campaigning, etc.) as having a greater influence on others than on themselves ("generalized personal or group discrepancy"; Moghaddam, Stolkin, & Hutcheson, 1997; "third-person effect"; Brosius & Engel, 1996; Davison, 1983; Hoorens & Ruiter, 1996; R.M. Perloff, 1993).

Praise and Blame—People often praise themselves more than others for success, and blame others more than themselves for failure ("self-serving attributional bias"; Bradley, 1978; Miller & Ross, 1975; Mullen & Riordan, 1988; Zuckerman, 1979). Praise and blame may sometimes be phrased as a counterfactual inference (Roese, 1997), which may also be self-serving: "If not for me, we would have failed" or "If only she had tried harder, we would have succeeded" (Roese & Olson, 1993).

Perceived Victimization—Even if they are members of objectively disadvantaged groups, people often believe others in their group suffer greater injustices than they themselves do ("personal-group discrimination discrepancy"; Olson, Roese, Meen, & Robertson, 1995; Quinn, Roese, Pennington, & Olson, 1999; D.M. Taylor, Wright, Moghaddam, & Lalonde, 1990).

Couplehood—People often see their romantic union as superior to those of others (“couple-serving bias”; Buunk, 2001; Buunk & van der Eijnden, 1997; Rusbult, Van Lange, Wildschut, Yovetich, & Verette, 2000; Van Lange & Rusbult, 1995).

Groups—As we mentioned previously, people may see their group membership as an example of selfhood (D.K. Sherman & Kim, 2005; Tajfel & Turner, 1979). People often believe that their own group (occupational, athletic, ethnic, religious, national, etc.) is superior to other groups (“ingroup favoritism”; Locksley, Ortiz, & Hepburn, 1980; Mullen, Brown, & Smith, 1992; “ultimate attribution error”; Islam & Hewstone, 1993; Pettigrew, 1979).

Bias Itself—The fact that people are biased in their perceptions of their own bias is emblematic of the scope of self-serving bias. Ironically, people often assume others are more prone to self-serving judgment than they are themselves (“bias blind spot”; Friedrich, 1996; Pronin, Lin, & Ross, 2002).

Not-So-Obvious Examples

We have described some obvious examples of a tendency to see oneself in a favorable light relative to others. Our analysis extends further, however, to some literature that has not traditionally been explained in terms of self-serving motives.

Actor–Observer Effect—The actor–observer effect is usually defined in terms of individuals preferring to explain other people’s behavior in terms of fixed traits while seeing their own actions as varying widely across situations (Nisbett, Caputo, Legant, & Marecek, 1973; Watson, 1982). In an underappreciated article, however, Sande, Goethals, and Radloff (1988) demonstrated that the actor–observer effect is a reflection of people’s belief in their own “multifaceted self”—a richness of sundry personal talents that permit greater flexibility across diverse situations that other people are unable to muster. Because the multifaceted self is desirable, the actor–observer effect can represent a self-serving judgment.

False-Consensus Effect—The false-consensus effect refers to the perception that others’ opinions are more similar to one’s own than is actually the case (e.g., Marks & Miller, 1987; Mullen et al., 1985; L. Ross, Greene, & House, 1977). By their very nature, many opinions lack objective standards of validation. Accordingly, it is reassuring to imagine wide support for one’s views. The false-consensus effect boils down to a belief in greater popular support for one’s own opinions than for the opinions of others, which is yet another species of self-serving judgment (McGregor, Nail, Marigold, & Kang, 2005; see also Alicke & Largo, 1995; Goethals, Messick, & Allison, 1991; S.J. Sherman, Presson, & Chassin, 1984).

Hindsight Bias—When people look to past outcomes, they often feel that they “knew it all along” (Hawkins & Hastie, 1990; Roeese, 2004). In other words, in hindsight, people are overconfident in their ability to have foreseen an event (e.g., a car accident, a job termination) when looking back in hindsight than when they make such predictions in the present moment. Recent research has revealed how the hindsight bias can be sculpted to be self-serving: People see past success as having been more certain for oneself than for others (Holzl, Kirchler, & Rodler, 2002; Louie, Curren, & Harich, 2000; Mark, Boburka, Eysell, Cohen, & Mellor, 2003; Mark & Mellor, 1991; Roeese, 2004). Viewing one’s own prior success as predictable implies that it resulted from competence and careful planning, whereas the less predictable success of others was nothing more than dumb luck.

There are many ways that people may think highly of themselves, and, accordingly, the basic pattern or template of self-serving judgment is evident in virtually every judgment domain (see

Table 2 for summary). Principle 1 states that any and all self-serving judgments may subserve affect regulation. Principles 2 and 3 explain how.

PRINCIPLE 2: SELF-SERVING JUDGMENTS PRODUCE POSITIVE AFFECT

Seeing oneself in a favorable light feels good. Because self-serving comparisons bring positive emotions, they may be used strategically to regulate affect (i.e., to restore the individual to an affective set-point following unpleasant experiences).

When self-serving comparisons are manipulated such that individuals are steered to compare themselves favorably with others, the typical result is an increase in positive affect. For example, when people are induced to take more credit than others for success (or to take less blame than others for failure), an increase in positive affect results (McFarland & Ross, 1982; Weary, 1980). When people are prompted to evaluate themselves (along dimensions of competence, performance, or other characteristics) more favorably than others, a boost in positive affect is again evident (e.g., Aspinwall & Taylor, 1993; Gibbons & Gerrard, 1989; Major, Sciacchitano, & Crocker, 1993; Morse & Gergen, 1970; Pleban & Tesser, 1981; Smith, 2000; Testa & Major, 1990; Wheeler & Miyake, 1992). When people are led to compare their current circumstances with past undesirable aspects (e.g., “I used to be lonelier than I am now”) or to undesirable counterfactual alternatives to their current circumstances (e.g., “I would be lonelier now if I hadn’t met Bob”), the result is increased positive affect (McFarland & Alvaro, 2000; Medvec, Madey, & Gilovich, 1995; Mellers, 2000; Roeese, 1994; Sanna, Turley-Ames, & Meier, 1999; Wilson & Ross, 2001). Finally, when attention is directed to the superiority of one’s own group compared with other groups (“ingroup favoritism”), the same boost to positive affect is evident (Branscombe & Wann, 1994; Fein & Spencer, 1997; Lemyre & Smith, 1985; Wills, 1981). Across these various kinds of comparative judgments, it seems clear that self-serving comparisons bring positive affect.

The effect of self-serving judgments on emotion boils down to a contrast effect. When objects are juxtaposed along some dimension, the perceived difference between them is magnified (e.g., a toy appears brighter when held against a dark backdrop rather than a light one, and a chair feels heavier after previously lifting a feather pillow rather than a sofa). In a self-serving comparison in which the focal judgment dimension is evaluative (or affective) in nature, the contrast effect takes an affective form. A judgment of self in isolation (“I am competent”) will be shifted in a more favorable direction when placed next to less favorable anchor (“Next to Sam, I am really competent”) and will also be shifted in the opposite direction when placed next to a more favorable anchor (“Next to Judy, I am not all that competent”). Contrast effects diminish when the two objects get closer together on the critical judgment dimension, so comparisons are not as self-serving when self and other are deemed highly similar or when self and other are placed into the same category of “we” (Gardner, Gabriel, & Hochschild, 2002; Harris, Middleton, & Joiner, 2000; Kühnen & Hannover, 2000; Stapel & Koomen, 2000).

All manner of self-serving comparisons tend to elicit positive affect. Any particular species of self-serving judgment may therefore be interchangeably recruited to assist in affect regulation (Heine, Proulx, & Vohs, 2006; Tesser, 2000; Tesser, Crepaz, Collins, Cornell, & Beach, 2000).

PRINCIPLE 3: THREAT ACTIVATES SELF-SERVING JUDGMENTS

If self-serving comparisons feel good, then they are a useful tool for affect regulation. That is, if a threatening event has brought negative affect, self-serving comparisons may restore affect to its set point. We use the term *threat* in its most basic sense: any cognitive identification of an event or object that may cause harm (either physical or psychological) to the perceiver (e.g.,

Blascovich & Tomaka, 1996; S.E. Taylor, 1991). In this definition, threat is information that causes negative affect by way of its implications for the self. Threat can take many different forms, which may produce unique responses. For example, threats to personal competence are different from threats of bodily harm, and threats to one's offspring are different from threats to one's occupational status. The summary below highlights a generic self-serving reaction that is a common response to these many forms of threat.

Traits and Abilities

Threatening experiences make people more self-serving in their judgments of traits and abilities (Gibbons & Gerrard, 1991; Wills, 1981). In a classic study by Hakmiller (1966), participants were given bogus personality feedback that was either threatening (participants were told that they harbored unusual hostility toward their parents, which might manifest itself in antisocial tendencies) or nonthreatening (participants were given feedback that emphasized their maturity). Threatened subjects were more likely to seek out information that would facilitate a favorable comparison of oneself over another (i.e., downward social comparison). Similarly, McFarland and Alvaro (2000) manipulated threat by having participants describe the most negative life event that had happened either to themselves or to an acquaintance. Threat caused subjects to see themselves as possessing more favorable traits now than in the past (i.e., downward temporal comparison). This basic finding has appeared in numerous studies of trait perceptions (e.g., Beauregard & Dunning, 1998; J.D. Brown & Gallagher, 1992; Crocker, Thompson, McGraw, & Ingerman, 1987; Dunning, Leuenberger, & Sherman, 1995; Friend & Gilbert, 1973; Gollwitzer & Wicklund, 1985).

Praise and Blame

To understand clearly the role of threat in how people form causal explanations for success and failure, one must manipulate threat independently of the outcome on which those causal judgments are focused. A demonstration by McCarrey, Edwards, and Rozario (1982) is especially clear. Threat was manipulated using bogus negative or positive feedback on a social perceptiveness task. Subsequently, subjects completed an anagram task for which bogus performance feedback was given. On this latter task, threat heightened the tendency for subjects to take credit for success and to deflect blame to others (see also Burger, 1981; Campbell & Sedikides, 1999; Miller, 1976).

Couplehood

We previously noted how people see their own romantic union more favorably than those of others. Threat (operationalized with instructions that made relationship dissolution seem especially likely) was found to increase this couple-serving bias (Rusbult et al., 2000).

Groups

Threat to the self increases the tendency to denigrate other social groups (e.g., J.D. Brown, Collins, & Schmidt, 1988; Burris & Rempel, 2004; Cadinu & Cerchioni, 2001; Castano, Yzerbyt, Paladino, & Sacchi, 2002; Crocker et al., 1987; Fein & Spencer, 1997; Hogg & Sunderland, 1991; McGregor, Zanna, Holmes, & Spencer, 2001; Weber, 1994).

False-Consensus Effect

We previously explained how the false-consensus effect is an example of self-serving comparison. One important piece of evidence supporting this interpretation is that threat heightens the false-consensus effect. S.J. Sherman, Presson, and Chassin (1984) manipulated threat using a task in which participants judged suicide notes as authentic or fabricated, with bogus feedback indicating either success or failure at this task. Threatened participants showed an increased tendency (relative to nonthreatened participants) to claim that their opinions

enjoyed consensual support (see also Agostinelli, Sherman, Presson, & Chassin, 1992; Goethals et al., 1991; McGregor et al., 2005).

Affect Regulation: Direct Connections

The experiments described in the previous section all involved a manipulation of threat and a measurement of some form of self-serving judgment. What evidence more directly links such effects to affect regulation?

Manipulations of negative affect, as opposed to threat per se, heighten self-serving comparisons. For example, Baumgardner and Arkin (1988) used films to induce mood states and found that those in the negative mood condition generated more self-serving causal attributions than those in the neutral mood condition. Jundt and Hinsz (2002) found that a negative mood state correlated with self-serving judgments of the likelihood of possible future events but not with other, more affectively neutral judgmental biases. A separate induction of positive affect that comes at the same time as a threat serves to preempt (or block) the typically observed increase in self-serving comparisons (Wood, Giordano-Beech, & Ducharme, 1999; see similar demonstrations in Arndt & Greenberg, 1999; Greenberg, Solomon, & Pyszczynski, 1997; Liu & Steele, 1986; Tesser et al., 2000). In the long run, self-serving judgments contribute to effective long-term coping with extreme misfortune (Bonanno, 2004). In a longitudinal study of coping with the loss of a loved one, for example, self-serving judgments at 6 months after loss predicted improved adjustment almost 2 years later (Bonanno, Field, Kovacevic, & Kaltman, 2002). Chronic threat may produce response styles that involve strong compensatory self-serving comparisons (Crocker & Major, 1989). A striking example appeared in Tom Wolfe's *The Right Stuff* (1979), which described the mindset of American military test pilots of the 1950s. The dangers of flying unreliable high-speed aircraft seemed to go hand in hand with a monumental feeling of self-superiority, an almost mythic belief that disaster "could never happen to me" because "I have the right stuff."

Principles 2 and 3 explain how self-serving judgments contribute to affect regulation, and they represent a synthesis of basic ideas common to such models as positive illusions theory (S.E. Taylor & Brown, 1988), self-affirmation theory (Steele, 1988), terror management theory (Pyszczynski, Greenberg, Solomon, Arndt, & Schmiel, 2004), and others. Our next two principles move beyond these prior conceptions to address the "when" and the "why" of dynamic changes in self-serving judgments.

PRINCIPLE 4: MUTABILITY MODERATES BEHAVIORAL VERSUS COGNITIVE RESPONSES TO THREAT

Some threats evoke compensatory cognitive responses, but others do not. Sometimes self-serving judgments are evident, yet at other times they are absent. For example, people are often self-serving in their ascriptions of praise and blame, but occasionally they do the opposite and blame themselves for negative events (e.g., Bryant & Guthrie, 2005; Bulman & Wortman, 1977; Miller & Porter, 1983). Sometimes people look around for others against whom they can feel superior, but other times they look to people who make them seem inferior by comparison. How can we account for this variation?

Answers have appeared within independent literatures, which, when glimpsed together, indicate striking consistency and suggest a common underlying mechanism. To sketch this core process, we first broaden our discussion to describe two fundamental classes of response to threat. When people experience threat (physical or psychological), there are two different ways in which they can respond. One is behavioral: People can react directly to reduce or avoid the threat (flee a predator, reverse a questionable decision). The other is cognitive: People can

mentally reconstrue the circumstances so as to make themselves or the situation look better (deflect personal blame, derogate a rejected option). This distinction has appeared in a variety of literatures: Stress researchers have differentiated problem-focused coping from emotion-focused coping (Folkman & Lazarus, 1980), and persuasion researchers have distinguished danger-control from fear-control (Leventhal, 1970). Gilbert and Ebert (2002) have even suggested a temporal prioritization: Behavioral remediation is the default response and occurs first, followed by cognitive reconstrual if the default response fails. But there is another more basic moderator that dictates when behavioral versus cognitive responses occur: the perception of mutability.

Mutability refers to inferences regarding whether an object or circumstance is modifiable. Low mutability corresponds to “case closed.” If the case is closed, it means that the object or situation is not open to further modification. A skyscraper that is completed is a low mutability object. On the other hand, when the skyscraper is still under construction or, better still, when it is merely on the drawing board, it is a high mutability object, meaning that “the case is open” and changes are possible. As another example, the score of a football game near the end of the fourth quarter is a low mutability circumstance because little time remains for the teams to score; at halftime, the score in the game is higher in mutability. This perception of mutability—beliefs about whether the case is open or closed or whether future modification is possible or impossible—is a fundamental and highly influential judgment.

Mutability is a cognitive heuristic embodied in the answer to the question, “What can I do about it now?” Can the situation be changed for the better by personal action? Is it possible to imagine taking concrete steps that might alleviate the adversity? If the answer is “yes,” an inference of high mutability has been rendered: The situation is mutable to the extent that personal action may alter it for the better. If the answer is “no,” an inference of low mutability has been rendered: The situation is not changeable, the deal is done.

A judgment of high mutability triggers the behavior response (i.e., attempts at a direct fix). On the other hand, low mutability triggers the cognitive response (e.g., a self-serving reconstrual of the situation). Responses to threat depend on how individuals perceive the modifiability of the surrounding circumstances. This principle is supported by a diverse range of findings (explained below), some of which have not previously been viewed in this light. By defining perceived mutability at an abstract level, it becomes apparent how many different measurement strategies may be subsumed under this single construct.

Trait Mutability

When people believe that their own traits are difficult to modify (such as intelligence or height; i.e., low mutability), they tend to bias self-descriptions in a self-serving manner (cognitive reconstrual). But when traits are easy to change (such as learnable skills; i.e., high mutability), people accept balanced feedback information that may facilitate subsequent action (Dunning, 1995; Green, Pinter, & Sedikides, 2005). Indeed, people who view themselves in terms of the possibility for new change are more likely to take remedial action aimed at fixing problems than are those who focus on their unchanging attributes (Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999).

Decision Mutability

A bad decision that is unchangeable (low mutability) rather than changeable (high mutability) inspires larger cognitive distortions that make the decision and its consequences seem better in hindsight (Gilbert & Ebert, 2002; Knox & Inkster, 1968).

Event Mutability

When an event is under a person's direct control (high mutability), self-derogatory comparisons predominate, but when the situation is not directly controllable, self-serving comparisons are more likely. This effect has been demonstrated both in social comparisons (Testa & Major, 1991) and in counterfactual comparisons (Roese & Olson, 1995; Tycocinski & Steinberg, 2005).

Decision Commitment

At the moment a person makes a decision, when information is accessed but before action is initiated (high mutability), information sampling is relatively unbiased (behavioral response). After the person has made that decision and has committed to a specific course of action (low mutability), information sampling becomes biased in a self-serving direction (Gollwitzer & Kinney, 1989; S.E. Taylor & Gollwitzer, 1995).

Event Repeatability

When a bad situation is unlikely to recur (low mutability), downward counterfactual comparisons predominate. A downward counterfactual comparison is an example of cognitive reconstrual, as it involves a comparison with a worse situation that, by contrast, makes the current situation seem better (sour grapes: "the alternative wasn't that great anyway..."). But when a bad situation may be revisited (a poor test performance can be offset by the opportunity to take a make-up exam; a losing score in a basketball game at half time can be converted to victory in the second half), upward counterfactual comparisons predominate (Markman, Gavanski, Sherman, & McMullen, 1993). Indeed, the chance to fix things directly stimulates problem-solving types of thoughts, which in turn facilitate performance (Nasco & Marsh, 1999; Roese, 1994; Roese & Summerville, 2005).

To conclude, self-serving comparisons constitute an important form of cognitive reconstrual. The mutability of the circumstances surrounding a threat dictates whether individuals respond behaviorally or cognitively. When mutability is high—if an event may recur, or if a decision is reversible—people typically act to confront the threatening situation directly. They change their behavior to improve their lot and are willing to suffer the pain of self-blame because it highlights those insights useful for facilitating improvement. On the other hand, when mutability is low—if an event is unlikely to recur, or if a decision is final—people typically respond with cognitive reconstrual, a prominent example of which is self-serving comparison. Because low mutability situations cannot be improved directly, cognitive reconstrual instead results in more positive affect (i.e., it feeds into affect regulation).

Many—perhaps most—outcomes in life are perceived as relatively low in mutability. A bad decision is difficult or costly to reverse, a failure cannot be wiped from the records, and an opportunity may be forever lost. In these situations, the negative affect caused by the threat to the self can be reduced only by cognitive means. Self-serving comparisons are perhaps the most flexible option. Such comparisons enhance the relative virtue of the self and therefore generate positive affect. Given the flexibility and effectiveness of self-serving comparisons, people are adept at sculpting them in many domains.

PRINCIPLE 5: ASYMMETRIC HOMEOSTASIS ENABLES OPTIMAL VIGILANCE

Self-serving judgment contributes to affect regulation. It is important to note, however, that the process is one-sided. Shifts of affect in a negative direction elicit compensatory increases in self-serving judgment, but the flip-side—increases in self-derogatory comparisons following a positive deflection in affect—is absent (Rozin & Royzman, 2001; S.E. Taylor,

1991). Whereas threat results in more extreme self-serving judgments, benefits may reduce, but never reverse, this self-serving pattern (e.g., Beauregard & Dunning, 1998; Fein & Spencer, 1997; Greenberg et al., 1993; McCarrey et al., 1984; D.K. Sherman & Kim, 2005; S.J. Sherman, Presson, & Chassin, 1984). Rather, positive shifts of affect are followed by passive decay back to a set point. We label this pattern *asymmetric homeostasis*, and it illuminates a key aspect of human affect regulation.

The idea of regulatory mechanisms revolving around a set point is inherent in traditional conceptions of homeostasis. A homeostatic system is one in which reactive processes preserve a state at a specific level (a set point) via a feedback loop (Carver & Scheier, 1998; Solomon & Corbit, 1974). In the case of mammalian temperature regulation, mechanisms are activated to return body temperature to a set point in response to both overheating (which activates sweating) and underheating (which activates shivering). This type of homeostasis is symmetrical. In the case of human affect regulation, by contrast, mechanisms are activated to make affect more positive following negative shifts, but no such regulatory activity occurs to make affect more negative following positive shifts. This sort of homeostasis is thus asymmetrical.

Many theorists have noted that “bad is stronger than good,” which is to say that negative stimuli produce larger and faster cognitive responses than do positive stimuli—losses are more impactful than gains, and negative affect is more sensitive than positive affect to comparable amounts of activation (e.g., Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Cacioppo, Gardner, & Berntson, 1997; Kahneman & Tversky, 1984; S.E. Taylor, 1991). A prominent explanation for this pattern is adaptive benefit or survival value. Avoiding a threat (predator, poison, infection, romantic rejection, job loss, social isolation, etc.) typically involves a more rapid response than approaching a benefit (food, rest, romance, status increase, coalition formation, etc.), because the cost of failure is more severe. The default affective response in the absence of external stimuli is weakly positive (as opposed to neutral). Termed the *positivity offset* (Cacioppo & Berntson, 1999), it means that primates such as human beings (and perhaps many other mammalian species) benefit from a general tendency toward long-term exploration and learning about novel environments.

Because of the short temporal window in which threat recognition must take place, and hence for affective shifts to contribute to behavioral mobilization, a more rapid mechanism is needed to restore negative (but not positive) affective shifts back to the set point. Thus, asymmetric homeostasis is efficient: For individuals to be maximally receptive or sensitive to a new threat, affect must be reset back to the set point rapidly. By contrast, affective shifts in the positive direction (i.e., the individual becomes happier) require no similarly rapid reset; hence, they may be allowed to decay passively back to the set point. In short, an active reset is required, for purely survival needs, more for negative than for positive affective shifts. Thus, asymmetric homeostasis in the domain of affect regulation (i.e., when self-serving judgments are activated to restore affect to set point) enables a core survival advantage to emerge, that of optimal vigilance to new potential threat. We term this idea the optimal vigilance hypothesis, and it has not previously been recognized as an organizing principle underlying differential sensitivity to negative rather than to positive affective stimuli.

We next explain the four key arguments of the optimal vigilance hypothesis and consider the available evidence for each.

1. Shifts in Affect Elicit Cognitive Appraisal

Affective experience is part of a signaling system that reacts to changes in the environment and signals a need for cognitive scrutiny. People are vigilant for sudden changes in affect, which then stimulate more effortful cognitive activity (which, in turn, is essential for effective

behavioral response). Put another way, effective problem solving depends on the rapidly responsive nature of the affect system.

Negative affect produces more vigorous cognitive activity than does positive affect (Baumeister et al., 2001; Braverman, 2005; Park & Banaji, 2000), but this pattern stands alongside a more general principle. Any sharp shift in emotion, in either a positive or negative direction, evokes cognitive activity. Surprise has immediate affective consequences, such that a better-than-expected outcome is pleasant and a worse-than-expected outcome is unpleasant (Roese & Sherman, 2007; Shepperd & McNulty, 2002). And surprise automatically captures attention (Duckworth, Bargh, Garcia, Chaiken, 2002; Johnston, Hawley, & Farnham, 1993; Johnston, Hawley, Plewe, Elliott, & DeWitt, 1990). More to the point, stimuli are more likely to be noticed when they are evaluatively discrepant from the observer's emotional state: Benefit-oriented people are more likely to notice threats, whereas threat-oriented people are more likely to notice benefits (Gawronski, Deutsch, & Strack, 2005; Rothermund, Wentura, & Bak, 2001).

Attention is the first step to cognitive processing aimed at explaining the surprise and formulating a response. Indeed, surprise has been shown to elicit precisely these processes (Kanazawa, 1992; Sanna & Turley, 1996; Stern, Marrs, Millar, & Cole, 1984). Thus, people depend on a reactive affect system with affect shifts that coordinate attention and stimulate problem-solving thoughts, which in turn guide effective behavioral responses.

2. Shifts in Affect Depend on an Absence of Floor and Ceiling Effects

Human perception (including perception of affect) is oriented toward noticing changes from the current state. Therefore, in order for the affect system to perform its signaling function effectively, it must be free from constraints on its ability to shift from one level to another. Floor and ceiling effects represent a clear constraint: If the current affective state is extremely negative, it is difficult for it become even more negative (floor effect), and if a person is feeling elated, it is difficult for them to become even happier (ceiling effect). Such floor and ceiling effects limit the sensitivity of the affect system in its capacity as a signaling device in the same way that a speedometer capped at 160 km/hr becomes insensitive when the driver exceeds this cap ("Am I going 180 now or maybe 200?"). This reasoning further implies that individuals are maximally vigilant for both new threats and new benefits simultaneously when they are in a neutral mood.

We would predict, for example, that an individual in the midst of a painful divorce battle will be less sensitive to an insult uttered by a coworker than someone who is less unhappy, and that a diner eating the last of bite of cheesecake will be less aware of the menu's apple pie than another diner who has yet to begin eating. We are not aware of direct evidence for attentional insensitivity while one is in an extreme mood state, although the previously mentioned evidence that attentional sensitivity is greater for new stimuli that mismatch a current mood or goal state (Gawronski et al., 2005; Rothermund et al., 2001) is indirectly supportive of this.

3. Threats Demand Quicker Responses Than Do Benefits

Threats are acute problems that demand quick behavioral responses because the cost of failure is relatively more severe than is the case for responses to benefits (Baumeister et al., 2001; Cacioppo & Berntson, 1994; Ito, Larsen, Smith, Cacioppo, 1998; Peeters & Czapinski, 1990; Rozin & Royzman, 2001). Cacioppo and Berntson (1999) pointed out that it is "more difficult to reverse the consequences of an injurious or fatal assault than an opportunity unpursued" (p. 136) and argued further that affective reactions to threats are quicker so as to facilitate quicker responding.

It is a simple truism that death or tissue damage are more catastrophic than absence of food or thwarted appetitive goals. Beyond these biological examples, however, we are not aware of further evidence (e.g., in the form of actuarial tabulations of responses to life events) showing that people are more successful overall when their avoidance responses are quicker than their approach responses. There is, however, abundant secondary evidence that individuals respond more quickly to the presence of threats than benefits (e.g., Baumeister et al., 2001; Cacioppo et al., 1997; Ito & Cacioppo, 2005; Rozin & Royzman, 2001).

4. Floor Effects Are a Bigger Problem Than Ceiling Effects

Together, Arguments 2 and 3 lead directly to the conclusion that floor effects are a more serious problem than are ceiling effects. If threats demand quicker responses than do benefits, then there is a greater need to avert floor effects (i.e., reduced sensitivity to shifts in a more negative affective direction) than there is to avert ceiling effects (reduced sensitivity to shifts in a positive direction).

Asymmetric homeostasis solves this problem. If floor effects are a bigger problem than are ceiling effects, a fix is needed more for the former than the latter. A compensatory process that is asymmetric—aimed at fixing the floor effect but not the ceiling effect—is thus an adaptive solution to this asymmetric problem. The optimal vigilance hypothesis helps to account for the pervasiveness of self-serving (as opposed to self-derogatory) judgments, even if they appear to be maladaptive in that they fail to provide insight for improvement. Although self-serving judgment does not actively support improvement via learning from experience it does set the stage for subsequent cognitive activity that brings behavioral improvement.

We previously specified that perceived mutability is a moderator of the relative activation of self-serving judgments. When mutability is high, self-serving judgments are less active, but this does not mean that the organism becomes suboptimally vigilant. Rather, when people respond behaviorally to a threat, they may be successful in eliminating or neutralizing it. Removal of the threat improves their mood and restores it to a set point. If behavioral remediation fails, self-serving judgments are again likely, which restores the person to the affective set point. As the old Aesop fable relates, the hungry fox declared the grapes to be sour—a cognitive reconstrual of the situation—only after a behavioral attempt at grabbing the high-growing grapes failed. In keeping with our model, we suspect that the fox probably also felt a surging pride in his own talents while taking pains to denigrate the grapes.

The optimal vigilance hypothesis gives new meaning to old debates about the functionality of cognitive processes that serve to regulate affective experience. Although theorists may point to the classic conception of the Law of Effect (Thorndike, 1913) to conclude that reinforced behaviors tend simply to recur, it seems somewhat dissatisfying to position positive affect shifts as the end goal within a functional analysis of self-serving judgments. As an analogy, the observation that sexual activity brings the survival advantage of procreation (and hence that natural selection favors organisms that are drawn toward rather than repelled by this behavioral act) is a more coherent theoretical conclusion than simply noting that the behavior is reinforcing (i.e., that sex produces positive affect). Thus, the recognition that there is survival value to affect regulation being one-sided (geared to restoring negative but not positive shifts), because a rapid postthreat reset to the set point provides optimal vigilance to new threats and affords a deeper theoretical portrait of affect regulation in general and of self-serving comparisons in particular.

IMPLICATIONS AND CONCLUSIONS

Descriptions of self-serving judgments have been recounted in numerous literatures in psychology for close to a century, and we have distilled them into five basic principles. Figure

1 depicts the model that emerges from these principles. Threat elicits negative affect, and self-serving judgments are activated only when the situation is low in mutability (i.e., closed to further fixes). If mutability is high (i.e., the situation may be fixed), then one may take direct action. Self-serving judgments bring positive affect, which in the end helps to preserve a state of optimal vigilance toward new threats.

Much prior theoretical work, particularly in the 1970s and 1980s, rested on the premise that specific forms of judgment could be characterized as fixed products of cold cognition, hot affective-enhancement motives, or both (Miller & Ross, 1975; Nisbett & Ross, 1980; Sorrentino & Higgins, 1986). Numerous experiments over the years were designed to distinguish whether a particular judgment domain (frequency estimate, predictive judgment, causal attribution, etc) was cold or hot, and even recent reviews have been framed by this presumed dichotomy (e.g., Chambers & Windschitl, 2004). Our first principle emphasizes that judgment domains are not intrinsically cold or hot but rather are merely vehicles (i.e., means of conveying information). Any and all judgment domains may be sculpted to map onto a self-other template. Hence, any and all judgment domains may convey a self-serving conclusion, which then may serve the function of affect regulation.

Caveats

We have presented an analysis of the role of self-serving comparisons in affect regulation following a threat. We believe that self-serving judgments represent the most common and most flexible cognitive strategy for returning negative affect to a set point. There are two important caveats, however, that temper our conclusions. First, we are not arguing that threat is the only cause of self-serving judgments; other determinants can also elicit this form of self-enhancement. Second, we are not arguing that threat always causes self-serving judgments; there are boundary conditions to the relation between threat and this form of self-enhancement.

Other Determinants—Threat is not the sole determinant of self-serving judgments. Other processes, unrelated to affect regulation or optimal vigilance, can also elicit these judgments. Some of these other determinants have been detailed in recent reviews (e.g., Chambers & Windschitl, 2004). For example, self-knowledge is more abundant in memory, and people often make comparative judgments by starting with this knowledge as an anchor, while taking insufficient account of what other people are actually like (Clement & Krueger, 2000; Dunning & Hayes, 1996; Kruger, 1999; M. Ross & Sicoly, 1979). Also, people sometimes want to impress others, making self-serving remarks to make a good impression but without actually believing the substance of those remarks (Arkin, Appleman, & Burger, 1980; Lee & Tiedens, 2001). Finally, the simple fact that self-serving judgments seem to occur more often than not (and are perhaps a default judgment style) may simply reflect the fact they are affectively rewarding. By way of simple reinforcement (or the Law of Effect), judgments that are rewarding tend to recur and persist.

Boundary Conditions—Just as threat is not the only cause of self-serving judgments, it is also important to note that threat does not always cause such judgments. Most important, Principle 4 in our model specifies that when mutability is high, threat elicits behavioral rather than cognitive (i.e., self-serving) responses. Mood-congruent recall is a distinct mechanism that might hinder self-serving responses. Moods tend to activate similarly valenced information in memory (Bower, 1981; Fiedler, Nickel, Muehlfriedel, & Unkelbach, 2001). As a result, threat sometimes increases the accessibility of negative memories, which can prolong or even exacerbate threat-induced negative affect. A third boundary condition to self-serving judgments as a form of affect regulation derives from individual differences in the use of self-serving judgments. As we elaborate below in the section on mental health, depressed individuals may be characterized by an absence of self-serving judgments (Brewin & Furnham,

1986; Crocker, Alloy, & Kayne, 1988; Wood, Heimpel, & Michela, 2003). These individuals do not respond consistently to threat with self-serving judgments, perhaps because chronic depression is associated with highly accessible negative cognitions, including previous self-denigrating comparisons with others. Finally, in rare circumstances, threat may be so extreme that it paralyzes rather than mobilizes. Severe threat can sometimes elicit feelings of helplessness or hopelessness, which render the individual unresponsive both behaviorally and cognitively (Abramson, Metalsky, & Alloy, 1989; Seligman, 1975). Our analysis implies that this failure of self-serving judgment can put the helpless individual at increased risk because a state of optimal vigilance is not maintained.

Wider Connections

Our perspective contains several interesting implications for and connections to other areas within psychology.

Development—Self-serving judgments appear at an early age. For example, children at ages 8 or 9 are self-serving in their predictions for the future (unrealistic optimism; Albery & Messer, 2005), children as young as 4 are self-serving in their causal explanations of social conflict (self-serving attributional bias, H. Ross, Smith, Spielmacher, & Recchia, 2004), and children as young as 4 believe others to be more vulnerable than themselves to media effects (third-person effect; Henriksen & Flora, 1999). In a meta-analytic review of causal judgments, self-servingness was evident at all ages (Mezulis, Abramson, Hyde, & Hankin, 2004). Self-serving judgment is a basic and vital tool for the management of emotional experience at all ages and appears to be a tool that children acquire as soon as they acquire the ability to differentiate the self from others.

Culture—Self-serving judgments vary across cultures and are smaller in cultures that are collectivistic (e.g., East Asian nations, such as China and Japan) than in cultures that are more individualistic (e.g., North American and West European nations; see Lehman, Chiu, & Schaller, 2004; Markus & Kitayama, 1991; Triandis, 1989). The reasons behind this variation remain controversial (e.g., J.D. Brown, 2003; Heine & Hamamura, 2007; Sedikides, Gaertner, & Toguchi, 2003). One line of thinking is that people from collectivistic cultures simply do not have the same motivational or affective goals (i.e., to defend oneself) that characterize people from individualistic cultures. The emerging consensus, however, is that people across cultures do not differ in the basic mechanisms underlying emotional regulation but rather in the way those mechanisms are instantiated. For example, what is threatening in one culture may not be threatening in another: North Americans are more threatened by personal failure, whereas Asians are more threatened by group failure (Brockner & Chen, 1996; Earley, Gibson, & Chen, 1999). Judgments that are affectively rewarding in one culture may be less so in another: North Americans take pride in traits centering on individual initiative (e.g., leadership, independence), whereas Asians take pride in communal traits (e.g., loyalty, independence; see Kurman, 2001; Sedikides et al., 2003). And cultural norms of modesty, which constrain how personal beliefs are expressed to others, can also explain why self-serving judgments are less evident in collectivist cultures (e.g., Kurman, 2001, 2003). We propose that the principles of affect regulation summarized in this paper are universal, but with nuances of culture contributing the particulars of what is threatening, what feels good, and what feels proper to express in public.

Mental Health—Self-serving judgments have long been understood to be a lynchpin of healthy emotional functioning (Bonanno, 2004; Nes & Segerstrom, 2006; S.E. Taylor & Brown, 1988; S.E. Taylor, Lerner, Sherman, Sage, & McDowell, 2003). Psychological disorders may stem both from excess as well as absence. Narcissism is a personality disorder that represents an excess of self-serving beliefs. The disorder is defined by a grandiose sense

of self-importance and personal entitlement (Raskin, Novacek, & Hogan, 1991; Rhodewalt & Morf, 1995), and, in keeping with the focus of our model, a key aspect of narcissism is a lack of situational reactivity. Rather than responding to threats and being attentive to mutability, the self-beliefs of narcissists are unchanging across situations. The same may be true of disorders marked by an absence of self-serving judgment, such as major depression or dysthymia. Many studies have revealed little in the way of self-serving judgments among those suffering from chronic emotional distress (e.g., Brewin & Furnham, 1986; Crocker et al., 1988; Martin, Abramson, & Alloy, 1984; Pyszczynski, Holt, & Greenberg, 1987; Tabachnik, Crocker, & Alloy, 1983), yet an additional defining feature of depression may be the absence of situational reactivity to threat or benefit. By taking into account the dynamic nature of affect regulation with fluctuations assessed over short periods of time, one may discover new diagnostic tools and gain new insights into the essence of emotional health.

Measurement—Assessments of personality variables, education performance perceptions, and employment-related perceptions often rely on respondents' self-reports. When asking respondents to evaluate themselves or aspects of their life, researchers will likely find their data skewed by self-serving effects. These self-serving effects vary dynamically, and they are often seen when people feel threatened and see little room for subsequent improvement or rectification. If researchers desire more accurate self-reports, they must pay attention to the nature of the testing situation, with an eye to reducing perceived threat and perceived foreclosure of opportunities. Also, distortion is much more likely in judgments of the self than in judgments of others (e.g., Epley & Dunning, 2000; Klein, 2001), and peer ratings are an invaluable tool for bypassing distortion. Finally, self-serving effects are more likely when the judgment domain is ambiguous or abstract, because ambiguity lends itself to creative license (e.g., Alicke & Largo, 1995; Quinn et al., 1999; Suls, Lemos, & Stewart, 2002). Thus, emphasizing concrete actions in self-report judgments may also minimize distortion.

Coda

Our review of diverse judgment domains reveals the broad generality of self-serving patterns. We argue that all such patterns may, at some points in time, subserve affect regulation (Principle 1). This is supported by two other principles: self-serving comparisons produce positive affect (Principle 2), and threat activates self-serving comparisons (Principle 3). The result is that self-serving comparisons restore affect to its prethreat set point in a compensatory manner. The key moderator of whether self-serving or self-derogatory judgments arise is the perceived mutability of evoking circumstances (Principle 4). Self-serving comparisons are triggered when circumstances are immutable (i.e., closed to further modification). By contrast, behavioral responses aimed at direct remediation are triggered by the recognition that circumstances are mutable (i.e., open to further modification).

We also argue that asymmetric homeostasis enables optimal vigilance on the part of the human organism (Principle 5). Asymmetric homeostasis refers to the pattern in which negative affect activates cognitive mechanisms that return affect to its set point (i.e., a bad experience elicits efforts to feel better), whereas an equivalent positive shift of affect evokes no such activity. Asymmetric homeostasis is an example of the survival value built into the affective system: Threats can entail acute problems that demand quick behavioral responses, whereas the prospect of gain is less pressing. Because of the briefer temporal window in which threat recognition must occur, and hence for affective shifts to evoke behavioral mobilization (e.g., fight or flight), an active mechanism is needed to restore negative (but not positive) affective shifts back to the set point. Without an active reset, a previous threat would leave the organism at less than optimal sensitivity to new threat. The principle that asymmetric homeostasis enables optimal vigilance establishes a coherent theoretical account of the affect regulatory basis of self-serving judgments.

Human beings are quick to think highly of themselves. They see themselves as better than others and are especially likely to do so in response to threatening circumstances. More than many of us may realize, such self-aggrandizement constitutes a visible aspect of a balanced set of interconnecting processes that collectively facilitate behavioral effectiveness and enhance survival.

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Fig 1.

Affect regulation and self-serving judgments. Threat (information of actual or imagined harm) evokes negative affect, which in turn mobilizes cognitive activity. If threat is judged to be high in mutability (i.e., the circumstances are fixable), a behavioral response follows, which aims at addressing the threat directly. If threat is judged to be low in mutability (i.e., the circumstances are not fixable), then self-serving judgments become more likely. Self-serving judgments elicit positive affect, which serves to rapidly restore affect to set point, thereby enabling optimal vigilance toward subsequently encountered threat.

TABLE 1

Five Principles of Self-Serving Judgments

Principle 1	Any self-relevant judgment may subserve affect regulation.
Principle 2	Self-serving judgments produce positive affect.
Principle 3	Threat activates self-serving judgments.
Principle 4	Mutability moderates behavioral versus cognitive responses to threat.
Principle 5	Asymmetric homeostasis enables optimal vigilance.

TABLE 2

Varieties of Self-Serving Judgment

Judgment domain	Label (and seminal demonstration)
Attributes	Better-than-average effect (Alicke, 1985) Downward social comparison (Hakmiller, 1966) Downward temporal comparison (Albert, 1977)
Event likelihood	Unrealistic optimism (Weinstein, 1980)
Event frequency	No widely used label (Messick et al., 1985)
Event impact	Generalized personal-group discrimination discrepancy (Moghaddam et al., 1997) Third-person effect (Davison, 1983)
Praise and blame	Self-serving causal attribution (Miller & Ross, 1975) Counterfactual comparison (Roese & Olson, 1993)
Perceived victimization	Personal-group discrimination discrepancy (Crosby, 1984)
Couples	Couple-serving bias (Van Lange & Rusbult, 1995)
Groups	Ingroup favoritism (Locksley et al., 1980) Ultimate attribution error (Pettigrew, 1979)
Bias itself	Bias blind spot (Pronin et al., 2002)
Personal flexibility	Actor-observer effect (Sande et al., 1988)
Perceived support	False-consensus effect (L. Ross et al., 1977)
Retrospective likelihood	Hindsight bias (Mark & Mellor, 1991)