Review of General Psychology
1999, Vol. 3, No. 1, 23–43

1089-2680/99/$3.00

Self-Threat Magnifies the Self-Serving Bias: A Meta-Analytic Integration

W. Keith Campbell and Constantine Sedikides
University of North Carolina at Chapel Hill

Experiments testing the self-serving bias (SSB; taking credit for personal success but blaming external factors for personal failure) have used a multitude of moderators (i.e., role, task importance, outcome expectancies, self-esteem, achievement motivation, self-focused attention, task choice, perceived task difficulty, interpersonal orientation, status, affect, locus of control, gender, and task type). The present meta-analytic review established the viability and pervasiveness of the SSB and, more important, organized the 14 moderators just listed under the common theoretical umbrella of self-threat. According to the self-threat model, the high self-threat level of each moderator is associated with a larger display of the SSB than the low self-threat level. The model was supported: Self-threat magnifies the SSB.

Lance is a student in introductory psychology. His midterm examination grade is not pretty: He received a D. After class, one of Lance's classmates asks him how he performed on the examination. Lance replies that he did not perform all that well and then hastens to explain that the test consisted of multiple-choice questions, a form of testing that does not reflect his true ability. Furthermore, his instructor graded harshly, and it was impossible for him to sleep the night before the examination because of a loud party that his roommate hosted.

This is a familiar scene to many academic instructors. It is evident that Lance strives to protect himself in the face of a troubling bit of information. Lance's self-protection strategy involves denying his share of responsibility for a negative test outcome and placing the responsibility on situational factors or other persons. Lance displays the *self-serving bias* (SSB), the explanatory pattern that involves external attributions (e.g., task difficulty, luck, or uncooperative others) for outcomes that disfavor the self but internal attributions (e.g., one's own ability, effort, or determination) for outcomes that favor the self. To illustrate using the same example, if Lance were informed that he earned an A on the midterm examination, he would inform unabashedly his classmate that his disciplined study habits finally paid off. Lance would be quick to enhance the self by assuming the lion's share of responsibility for a positive test outcome (Bernstein, Stephan, & Davis, 1979).

This attributional pattern has been labeled a bias for good reasons. A person's (i.e., an actor's) attributions after successful outcomes differ markedly from his or her attributions after unsuccessful outcomes. This explanatory divergence on the part of the actor is observed even after control for imperfect information-processing strategies such as selective attention, differential access to performance information, or memorial differences (Sedikides, Campbell, Reeder, & Elliot, 1998). At the same time, an external observer's attributions are rather invariant, focusing on the actor's dispositions regardless of type of outcome (Jones & Nisbett, 1972; Ross, 1977). The biased nature of the SSB is especially evident in experimental tasks in which individuals' outcomes are determined randomly by the experimenter and thus have no relation to actual performance. For this reason, we limited the present statistical analysis to experimental tasks.

The example of Lance deserves further consideration. An informative exercise is to speculate on the conditions that would lead him to display the SSB to a magnified or attenuated

W. Keith Campbell and Constantine Sedikides, Department of Psychology, University of North Carolina at Chapel Hill.

We thank Joy Dempsey, Sara Morris, and Steve Palmatier for their assistance in conducting the meta-analysis.

Correspondence concerning this article should be addressed to W. Keith Campbell, who is now at the Department of Psychology, 11220 Bellflower Road, Case Western Reserve University, Cleveland, Ohio 44106-7123. Electronic mail may be sent to wkc@po.cwru.edu.

degree. Lance might be more self-serving (i.e., display a greater SSB) when explaining his grade on an examination he regarded as important as opposed to unimportant. Lance might also be more self-serving if he expected success rather than failure on the test. Lance might even be more self-serving if, in pursuit of a high grade, he adopted a competitive rather than noncompetitive orientation toward his classmates.

This short imagination exercise suggests that the degree to which an individual will be self-serving depends on several conditions. A multitude of these conditions, or moderators, of the SSB have been examined in the empirical literature. Unfortunately, however, this literature lacks thematic coherence. What do regarding a task as important rather than unimportant, having a high instead of a low success expectancy, and espousing a competitive instead of a noncompetitive orientation have in common that would lead to the magnification of the SSB? What is a common explanatory mechanism for these seemingly diverse displays of the SSB? We argue, in the present article, that a common explanatory mechanism underlying these and several additional moderators is self-threat. Self-threat is increased when Lance is stating the reasons for his failure on an important examination, when his expectancy of success is high, and when he adopts a competitive orientation.

Our objective in this meta-analytic review of the SSB is twofold. First, we examine whether the SSB is a viable and pervasive phenomenon by assessing the reliability and effect size of the SSB. A second and far more important goal involves proposing and testing a self-threat model of the SSB. This theoretical model posits that the mechanism underlying the moderators of the SSB is self-threat. In the process of testing the self-threat model, we reinterpret and classify 14 major moderators of the SSB into the categories of high versus low self-threat. We then examine the effectiveness of these moderators in inducing a magnified or attenuated SSB. This approach to analyzing the experimental literature on the SSB will aid in understanding more generally the functioning of the self in response to threat and, thus, will have implications for research beyond that on the SSB.

The Self-Serving Bias

We begin by providing a background on the SSB, discussing the typical experimental paradigm that has been used to test the SSB, and mentioning the major moderators involved in empirical examinations of the SSB.

Background

Heider (1958) is credited as the psychologist who articulated the SSB. He observed that, in ambiguous situations, attributions are colored by "a person's own needs or wishes" (Heider, 1958, p. 118), an example of this being the workman who "blames his tools" (p. 98) for his lack of skill. The needs or wishes to which Heider referred are rooted in the self-concept. Indeed, the SSB is considered a psychological strategy for protecting or enhancing one's self-concept (Greenberg, 1991; Greenberg, Pyszczynski, & Solomon, 1982; Greenwald, 1980; Sedikides et al., 1998; Sedikides & Strube, 1995, 1997; Weary-Bradley, 1978, 1979; Zuckerman, 1979).

A debate point regarding the SSB has been whether the SSB actually exists or is "fiction." Three narrative reviews (Miller & Ross, 1975; Weary-Bradley, 1978; Zuckerman, 1979), along with three meta-analytic reviews of small subsets of the SSB literature—interpersonal influence tasks (Arkin, Cooper, & Kolditz, 1980), naturalistic sports settings (Mullen & Riordan, 1988), and depression (Sweeney, Anderson, & Bailey, 1986)—have concluded that there is some evidence for the SSB, but the size and scope of the statistical effect remain in question. A comprehensive meta-analytic review of the relevant experimental literature has the potential to provide conclusive answers regarding the viability and pervasiveness of the SSB. More important, such a review enables the statistical examination of 14 important moderators of the SSB from a unified theoretical perspective, that of self-threat.

Paradigm

Numerous laboratory tests of the SSB have been conducted since Heider's (1958) pioneering work. The critical descriptive features of the typical experimental paradigm are as follows. Participants are asked to perform a task that is

ostensibly a measure of intelligence, social sensitivity, teaching ability, or therapy skills. Frequently, participants are instructed to work alone on the task; alternatively, they are instructed to work with one or more partners. Individuals, dyads, or groups are then given success or failure feedback that is bogus and assigned randomly. Finally, participants make attributions for the task outcome. Often, these attributional questions inquire as to what extent participants believe the task outcome was due to the internal factors of effort and ability and to the external factors of difficulty and luck. Other times, participants simply declare their responsibility for the task outcome. From the researcher's standpoint, participants manifest the SSB if they attribute failure outcomes to external rather than internal factors and attribute successful outcomes to internal rather than external factors.

Moderators

Investigations of the SSB have examined a multitude of moderators. We have identified 14 major (i.e., most frequently appearing) moderators: (a) *role* (participants are actors or observers), (b) *task importance* (participants regard the task as important or unimportant), (c) *self-esteem* (participants have high or low global trait self-esteem), (d) *achievement motivation* (participants have high or low achievement motivation), (e) *self-focused attention* (participants are high or low in self-focused attention), (f) *task choice* (participants choose or are assigned a task), (g) *outcome expectancies* (participants expect task success or task failure), (h) *perceived task difficulty* (participants perceive the task as easy or difficult), (i) *interpersonal orientation* (participants adopt a competitive or noncompetitive–cooperative orientation), (j) *status* (participants' status is either equal or unequal), (k) *affect* (participants are in a positive or negative affective state), (l) *locus of control* (participants' locus of control is internal or external), (m) *gender* (participants are female or male), and (n) *task type* (participants are involved in skills-oriented tasks or interpersonal influence tasks).

In some cases, the moderators were designed to test the self-protective or self-enhancing nature of the SSB. In other cases, the use of moderators was sparked by the theory underlying the moderators themselves. For example, the use of affect as a moderator is based on theories of mood and attributional theories of depression; the use of locus of control is based on defensive models of control seeking; and the use of gender is based on presumed differential bases for female and male self-esteem. Regardless, these moderators have been examined in isolation. The current meta-analytic review promises to bring conceptual coherence to this scattered intellectual landscape.

Self-Threat and the Self-Serving Bias

In this section, we define the construct of self-threat and introduce the self-threat model of the SSB. In addition, we discuss the 14 moderators of the SSB and predict the conditions under which each moderator is likely to evoke high levels of self-threat and thus lead to a magnification of the SSB.

The Construct of Self-Threat

Background. The self has been construed as having at least two aspects (Baumeister, 1997): (a) a representational structure (self as object of perception, self-concept, or me) and (b) an executive function (self as subject of perception, ego, or I; Allport, 1943; James, 1890). The aspect of the self that is vulnerable to threat is the "me" rather than the "I," given that (as James, 1890, pointed out) the latter has no inherent qualities that can be threatened. Therefore, we use the term *self-threat* in this article to refer to a threat to the self-concept (for uses of *ego threat* as a synonymous term, see Baumeister, Heatherton, & Tice, 1993; Baumeister, Smart, & Boden, 1996).

Definition. In many instances, what we label in this article as self-threat has been defined operationally rather than conceptually. Specifically, self-threat has been operationalized as a failure experience (e.g., Hakmiller, 1966; Pyszczynski, Greenberg, & LaPrelle, 1985; Sherman, Presson, & Chassin, 1984). Conceptual definitions occur less frequently. Baumeister et al. (1996) provided a conceptual definition that we endorse. They defined what we term self-threat as follows: "when favorable views about oneself are questioned, contradicted, impugned, mocked, challenged, or otherwise put in jeopardy" (p. 8). This experience of self-threat was captured elegantly by William James (1890):

> We know how little it matters to us whether *some* man, a man taken at large and in the abstract, prove a failure or succeed in life,—he may be hanged for aught we care,—but we know the utter momentousness and terribleness of the alternative when the man is the one whose name we ourselves bear. *I* must not be a failure. *I* at least must succeed. (p. 318).

In summary, if self-threat is to occur, a condition that is perceived as unfavorable to the self ought to be present. This condition will convey information that challenges, contradicts, or mocks a valued self-conception.

Self-Threat Model

Normal adults are motivated to protect, maintain, or enhance the positivity of the self-concept (Brown & Dutton, 1995; Dunning, 1993; Sedikides, 1993; Sedikides & Strube, 1997). This statement has a noteworthy corollary. When individuals' positive self-conceptions are threatened by negative information, individuals will act in ways to counter and minimize the threat. Indeed, the motive to maintain the integrity of a positive self-concept in the face of threatening information is at the cornerstone of several influential views of the self, including Aronson's (1992) reformulation of cognitive dissonance theory, Deci and Ryan's (1987; Deci, 1980) treatise on autonomy, Epstein's (1973) view of the self as a theory, Freud's (1923/1961) structural model, Greenwald's (1980) metaphor of the ego as a totalitarian regime, James's (1890) concept of "self-feeling," Nicholls's (1984) view of achievement motivation, Steele's (1988) self-affirmation theory, Taylor and Brown's (1988) concept of positive illusions (cf. Colvin & Block, 1994), and Tesser and Cornell's (1991) research on the confluence of self-processes.

The self-threat model of the SSB follows in this theoretical tradition. Although there are certainly individuals with negative global or specific self-views, most individuals have a positive self-concept (Edwards, 1957; Kendall, Howard, & Hays, 1989; Schwartz, 1986). As a result, when individuals are confronted with feedback that threatens their self-concept, as in the typical SSB paradigm, they will experience a momentary drop in state self-esteem or accompanying affect (Jussim, Yen, & Aiello, 1995; McFarlin & Blascovich, 1981; Swann, Griffin, Predmore, & Gaines, 1987). In an attempt to escape this uncomfortable state, individuals will make self-serving attributions. The greater the threat to the self, the more self-serving these attributions will be. In other words, the SSB will be magnified under conditions of high self-threat.

The main contribution of the self-threat model lies in its potential to summarize succinctly the effects of the numerous moderators of the SSB. This degree of integration has not yet been attempted in the literature. As it now stands, the moderators have been treated in the empirical literature as isolated and conceptually distinct. We propose that these disparate moderators can be linked under the rubric of self-threat. We now turn to a discussion of these moderators.

Self-Threat and Moderators of the Self-Serving Bias

Role. In the studies reviewed, participants either performed a task, received success or failure feedback, and made causal attributions for their performance (participants as actors) or observed another person receiving performance feedback and subsequently made attributions for this person's performance (participants as observers). We surmise that actors will experience more self-threat than observers, because actors' self-conceptions are challenged directly (Baumeister et al., 1993). Therefore, actors will exhibit a greater SSB than observers.

Task importance. Participants who are informed that the experimental task is important (i.e., diagnostic of valued self-conceptions) will experience a higher level of self-threat than participants who are informed that the task is unimportant (Miller, 1976). Thus, the former will manifest the SSB to a greater extent than the latter.

Self-esteem. Participants high and low in self-esteem will respond differently as a function of negative (i.e., threatening) feedback. Those with high self-esteem will become more defensive (Baumeister et al., 1993, 1996; Blaine & Crocker, 1993) and will manifest this defensiveness through an accentuated SSB.[1]

[1] The experiments that we meta-analyzed were concerned with global self-esteem rather than beliefs about domain-specific abilities. These two variables are conceptually distinct. For example, an individual with low global self-esteem may have highly positive views of his or her

Achievement motivation. In comparison with low achievers, high achievers regard situations diagnostic of success or failure as more self-relevant (Murray, 1938; Trope, 1975). High achievers will thus experience elevated levels of self-threat and will display a greater SSB.

Self-focused attention. Self-focused attention is defined as directing attention inward. Participants placed in a state of self-focused attention are more likely to become aware of the discrepancy between who they think they are (actual self), and who they would like to be (ideal self) or who they are obligated to be (ought self); Duval & Wicklund, 1972; Sedikides, 1992a). This focus on standards associated with individual performance will increase the threat of failure and, therefore, the likelihood of a magnified SSB (Federoff & Harvey, 1976).

Task choice. Participants who choose freely the experimental task, as opposed to those for whom the experimenter selects the task, will regard the task as more central to the self, as suggested by the literature on the mere ownership effect (Feys, 1991; Hoorens & Nuttin, 1993). Given the potential for self-threat, these participants will manifest an accentuated SSB.

Outcome expectancies. In the studies under review, participants in success expectancy conditions were informed by the experimenter that they performed well on a pretest, were similar to other participants who performed well in the past, or were competent at the skill assessed. Participants in failure expectancy conditions were provided with the opposite type of feedback. We predict that participants in success expectancy conditions will experience higher levels of self-threat than participants in failure expectancy conditions (Brown, 1990). Unexpected outcomes lead to more negative emotional impact than expected outcomes (McAuley & Duncan, 1989; Wong & Weiner, 1981). Participants in success expectancy conditions are more likely to use the SSB either as a strategy for ameliorating this impact or as a defensive response.

Perceived task difficulty. The perceived difficulty level of the experimental task has been manipulated either by distracting participants during performance or by informing them, in interpersonal influence situations, that the student they are ostensibly teaching has low ability or motivation. We attempted to classify experimental tasks in terms of the degree of difficulty or challenge they presented to participants. Although no task was judged as unusually difficult, we were able to sort the tasks into two categories: moderately challenging and unchallenging. (Agreement between the authors was 100%.) We reasoned that moderately challenging tasks have more threat potential than unchallenging ones, because outcomes associated with the former are more diagnostic of the individual's ability than outcomes associated with the latter (Trope, 1980). Therefore, in an effort to self-protect, participants will be more likely to display a pronounced SSB on moderately challenging tasks.

Interpersonal orientation. In some experiments, participants competed (or were led to believe that they did so) with another person, whereas, in other experiments, participants worked alone or with a cooperative other on a task. We hypothesize that competitive settings elicit more self-threat than noncompetitive settings. When a participant has a competitive orientation, the participant is concerned with the magnitude of his or her own contribution and seeks to differentiate his or her performance from the competitor's performance. These concerns will instigate social comparison processes and will result in elevated levels of self-threat (Gibbons & Gerrard, 1991; Wills, 1981). Consequently, participants in competitive settings will manifest the SSB to a greater degree than participants in noncompetitive settings.

Status. The social status of participants who worked together to produce a joint outcome differed. In some cases, the participant was of equal status to the others (e.g., the participant was a team member), whereas, in other cases, the participant was of higher status than the others (e.g., the participant had the role of teacher). In no experiment was the participant of lower status. We predict that participants in equal-status conditions will experience high levels of self-threat and will consequently manifest the SSB to a more pronounced degree than participants in high-status conditions. Equal status contributes to the emergence of increased social comparison processes. Social

ability in a specific domain, such as artistic talent. It is possible that this individual would display the SSB when receiving feedback related to artistic talent.

comparison, in turn, increases in dyadic settings in which individuals are more similar to each other (Tesser, 1988, 1991). High-status participants, on the other hand, will not be motivated to engage in social comparison processes. In addition, the threat level of high-status participants will remain relatively low either because of the activation of the noblesse oblige norm or because of indifference to the opinions of their inferiors.

Affect. Affect has been induced experimentally via positive or negative mood induction procedures and has also been assessed in naturalistic settings via standardized depression measures. Positive affect is associated with a positive self-concept and high self-esteem (Brockner, 1983; Sedikides, 1992b). Hence, participants with positive affect will respond more defensively (i.e., by manifesting the SSB in a more conspicuous manner) to the same threat than participants with negative affect. An alternative account is based on findings that point to participants being cautious and risk avoidant (Isen, Nygren, & Ashby, 1988), perhaps in the interest of maintaining their mood state (Isen, 1984). Consequently, in comparison with participants in a negative affective state, those in a positive affective state will perceive negative feedback situations as more threatening and will respond with an enhanced SSB.

Locus of control. Locus of control (Rotter, 1966) refers to the type of attribution (internal or external) that one makes for events. At first glance, it may appear that individuals with an external locus of control will experience less self-threat than individuals with an internal locus of control, because the former are more likely to endorse external causes of performance outcomes. We maintain, however, that those with an external locus of control will experience higher levels of self-threat. External locus of control is an element of a defensive self-esteem maintenance strategy (Davis & Davis, 1972). People with an external locus of control do not make external attributions indiscriminately. Instead, they make such attributions selectively, that is, only when encountering negative (i.e., self-threatening) feedback.

Gender. Researchers have reported occasional gender differences in the manifestation of the SSB (Christensen, Sullaway, & King, 1983), with men being more self-serving than women. One explanation for this gender difference involves differential task importance. The majority of tasks used in traditional SSB research (e.g., anagrams tests and pursuit rotors) are male-oriented tasks and, thus, are more important for men than women (Deaux & Farris, 1977; Rosenfield & Stephan, 1978). A second explanation is that men, more so than women, have high success expectancies on these tasks (Rosenfield & Stephan, 1978). A third explanation is that men have higher global self-esteem than women (Harter, 1993). On the basis of this literature, we predict that men will experience more self-threat and will thus manifest the SSB to a greater degree than women.

Task type. Two tasks have been used in the literature: skills-oriented tasks and interpersonal influence tasks (Weary-Bradley, 1978). In skills-oriented tasks, the participant completes a task (e.g., anagrams test) and receives feedback regarding her or his performance. In interpersonal influence tasks, the participant believes that she or he has some influence over another individual; that is, the participant is the teacher and the other is the learner, or the participant is the therapist and the other is the client. It is the other individual, however, to whom the feedback is directed; for example, the participant learns that the student performed well on a test or remained phobic. We propose that, of these two cases, the skills-oriented task will be more threatening because the feedback is leveled directly at the participant and thus provides more potential to diminish the positivity of the self-concept.

Method

Selection of Experiments

We located relevant experiments in three ways. We conducted a computerized PsycLIT search using the keywords *self-serving bias*. The database covered the calendar years 1974 (the year PsycLIT search became available) to 1996. Also, we collected relevant book or handbook chapters. Finally, we inspected articles listed in the reference sections of all of the sources located. These three search strategies led to the accumulation of 175 articles.

We included in the meta-analysis experiments that met the following criteria. First, the experiment had to have been published in a peer-reviewed journal. Second, the experiment had to have manipulated both performance success and performance failure on the experimental task; that is, we excluded studies using

naturally occurring success or failure experiences, and we also excluded experiments that manipulated only success or only failure. Third, the experiment needed to report a measure of causal attribution after feedback manipulation, and this measure had to be at the level of the individual. Consequently, we excluded experiments that reported participants' attributions for team performance. Fourth, the experiment had to report results in such a way that an effect size could be calculated. In addition to the preceding criteria, we excluded studies that involved as participants children, Eastern (e.g., Japanese) citizens, or individuals who suffered from thought process disorders (e.g., schizophrenia). We identified and included in the meta-analysis 70 experiments that met all of the criteria just mentioned. From these experiments, which contained data from 6,949 participants, we calculated 163 effect size estimates (*d*s).

Calculation of Effect Sizes

Consistent with past meta-analytic reviews of portions of the SSB literature (Arkin, Cooper, & Kolditz, 1980; Mullen & Riordan, 1988), we operationalized the SSB as the extent to which participants who succeeded vis-à-vis participants who failed made more internal attributions. We scored the attribution measure used by researchers in the internal direction (i.e., the higher the score, the more internal the attribution). In most cases (46 experiments), we subtracted external attributions from internal attributions. In instances in which this measure was not available, however, we resorted to internal attributions (23 experiments) alone or external attributions (1 experiment, reverse scored) alone.

We calculated effect size estimates by subtracting the causal attributions made by participants who failed from the causal attributions made by participants who succeeded. Then we divided this value by the standard deviation and corrected for sample size (Hedges & Olkin, 1985). A positive effect size estimate indicates an SSB (e.g., participants made greater internal attributions for success than failure). On the other hand, a negative effect size estimate indicates an other-serving bias (e.g., participants made greater internal attributions for failure than success). We assigned an effect size of zero to cases in which a null finding was reported with no specific data. Finally, we assigned an effect size based on a p value of .05 to cases in which a statistically significant finding with no specific data was reported. We coded each effect size estimate on the 14 moderators.

Results

We conducted a meta-analysis using the effect sizes that we had computed for each experiment (Table 1). The aggregation technique that we used was based on Hedges and Olkin's (1985) guidelines. In examining the overall effect size and tests of all of the moderators (except for role), we used effect sizes derived from participants in the actor condition (n = 153). After we report each effect size, we list the 95% confidence interval (CI) in parentheses.

The Self-Serving Bias: Fact or Fiction?

Across all experiments, we obtained evidence that the SSB is a fact, d = 0.467 (CI = 0.416, 0.518). This overall effect size is comparable to effect sizes reported by Arkin, Cooper, and Kolditz (1980; d = 0.38) and Mullen and Riordan (1988; d = 0.668). The effect size we obtained is considered small to moderate (Cohen, 1988) and contains a significant degree of heterogeneity, $Q(151) = 829.63$, $p < .001$. This heterogeneity suggests that the individual effect sizes do not stem from the same population; this legitimizes the search for more specific tests of moderators (Hedges & Olkin, 1985). Next, we compared the effect in the high and low self-threat conditions of each moderator. A statistically significant chi-square value reflects a difference between groups. Similar conclusions can be derived by inspecting visually the 95% CIs reported after each effect size (see Table 2 for a summary of the results from the moderator tests).

Moderators of the Self-Serving Bias

Role. In support of the self-threat model, the SSB was present among actors (n = 153), d = 0.467 (CI = 0.416, 0.518), but not among observers (n = 10), $d = -0.126$ (CI = −0.328, 0.077), χ^2 (1) = 30.89, $p < .001$. The latter leaned toward an other-serving bias. Parenthetically, the lack of SSB in the observer condition supports the contention that we made in the introduction, namely that the SSB is indeed a bias.

Task importance. Both participants who regarded the task as important (n = 7), d = 1.011 (CI = 0.730, 1.292), and participants who regarded the task as unimportant (n = 7), d = 0.690 (CI = 0.422, 0.958), manifested the SSB. The former, however, displayed the SSB to a greater degree, χ^2 (1) = 2.62, $p < .10$, a finding supportive of the self-threat model.

(text continues on page 33)

Table 1
Experiments, Moderators, and Effect Sizes

Study	1	2	3	4	5	6	7	8	9	10	11	12	13	14	*d*
Ames (1975)	H	H					H		L	L			L	L	−0.93
	H	H					L		L	L			L	L	−0.93
	H	L					H		L	L			L	L	−0.93
	H	L					L		L	L			L	L	−0.93
Arkin, Appelman, &	H								L	L			L	L	−0.19
Burger (1980,	H								L	L			L	L	0.15
Experiments 1 & 2)	H								L					H	−0.39
	H								L					H	1.27
Arkin, Gabrenya,	H								L	L				L	0.93
Appelman, &	H								L	L				L	−0.02
Cochran (1979)	H								L	L				L	0.44
	H								L	L				L	1.46
Arkin, Gleason, &	H					H	H		L	L				L	−0.29
Johnston (1976)	H					H	L		L	L				L	1.09
	H					L	H		L	L				L	1.31
	H					L	L		L	L				L	1.23
Bar-Tal & Frieze	H								L				H	H	0.43
(1976)	H								L				L	H	0.52
Bar-Tal & Frieze	H			H					L				H	H	−0.87
(1977)	H			L					L				H	H	−0.03
	H			H					L				H	H	0.12
	H			L					L				L	H	−0.55
Baumgardner & Arkin	H								L		H			H	2.15
(1988)	H								L		L			H	1.30
	H								L					H	1.59
Baumgardner, Hep-	H						H		L					H	1.13
pner, & Arkin	H						L		L					H	0.21
(1986, Experiment 2)															
Beckman (1970)	H								L	L				L	0.26
	L								L	L				L	−0.36
Beckman (1973)	H								L	L			L	L	0.00
	L								L	L			L	L	0.05
Brandt, Hayden, &	H							L	L	L			H	L	−0.92
Brophy (1975)	H							L	L	L			L	L	−0.93
	H							H	L	L			H	L	−0.21
	H							H	L	L			L	L	−0.49
Brown & Rogers	H								L					H	0.15
(1991)															
Cadinu, Arcuri, &	H								L	H				H	0.78
Kodilja (1993)															
Chaikin (1971)	H								L				L	H	0.23
Davis & Davis (1972,	H								L			L	H	H	−0.07
Experiments 1 & 2)	H								L			H	H	H	0.83
	H								L			L	L	H	−0.65
	H								L			H	L	H	0.42
Deaux & Farris	H								L				H	H	−0.51
(1977, Experiments	H								L				L	H	−0.84
1 & 2)	H								L					H	−0.31
Dustin (1966)	H								L	H			H	H	0.00
Elig & Frieze (1979)	H								L					H	0.21
Feather & Simon	H						H		L				H	H	0.59
(1971)	H						L		L				H	H	−0.31

Table 1 *(continued)*

Study	1	2	3	4	5	6	7	8	9	10	11	12	13	14	*d*
Federoff & Harvey	H				H		H		L	L			L	L	2.58
(1976)	H				H		L		L	L			L	L	1.26
	H				L		H		L	L			L	L	0.59
	H				L		L		L	L			L	L	0.22
Fitch (1970)	H		H			H			L					H	0.95
	H		H			L			L					H	0.95
	H		L			H			L					H	0.22
	H		L			L			L					H	−0.06
Fontaine (1975)	H						H		L				H	H	0.23
	H						L		L				H	H	0.86
Forsyth & Schlenker	H	H							L	H				H	0.77
(1977)	H	H							L	H				H	0.77
	H	L							L	H				H	0.77
	H	L							L	H				H	0.77
Frey (1978)	H								L				L	H	0.09
	H								L				L	H	0.98
Harvey, Arkin,	H						H		L	L				L	0.52
Gleason, &	L						H		L	L				L	−1.04
Johnston (1974)	H						L		L	L				L	−0.10
	L						L		L	L				L	0.99
Hochreich (1975)	H								L				H	H	0.51
Johnson, Feigenbaum, & Weiby (1964)	H								L	L			L	L	0.94
Johnston (1966)	H								L	H			H	H	2.63
	H								L				H	H	0.83
Johnston (1967)	H								L	H			H	H	2.02
Knee & Zuckerman	H								L					H	1.39
(1996)	H								L					H	0.70
Krovetz (1974)	H								L			L		H	2.78
	H								L			H		H	2.76
Kuiper (1978)	H								L		H		L	H	1.75
	H								L		L		L	H	−0.06
Larson (1977)	H								L	H			H	H	0.37
Lefcourt, Hogg,	H						H		L			L		H	0.24
Struthers, &	H						L		L			L		H	−0.19
Holmes (1975)	H						H		L			H		H	0.03
	H						L		L			H		H	0.67
Lewis (1976)	H						H		L				H	H	0.33
	H						L		L				H	H	−0.12
Luginbuhl, Crowe, &	H						H	H	L				H	H	0.85
Kahan (1975,	H						L	L	L				H	H	0.85
Experiments 1 & 2)	H						H	H	L				L	H	0.84
	H						L	L	L				L	H	0.84
	H								L				H	H	1.54
	H								L				H	H	1.54
	H								L				H	H	1.54
	H								L				L	H	1.54
	H								L				L	H	1.54
	H								L				L	H	1.54
McMahan (1973)	H						H		L					H	−0.11
	H						L		L					H	−0.55
Menapace & Doby	H								L					H	−0.87
(1976)															

(table continues)

Table 1 (*continued*)

Study	1	2	3	4	5	6	7	8	9	10	11	12	13	14	*d*
Miller (1976)	H	H							L					H	1.40
	H	L							L					H	0.45
Mynatt & Sherman	H								L				H	L	0.46
(1975)	H								L	H			H	L	0.98
Regan, Gosselink,	H								L				L	H	0.00
Hubsch, & Ulsh	L								L				L	H	0.00
(1973)															
Riess, Rosenfeld,	H								L				L	H	0.54
Melburg, &	H								L				L	H	0.55
Tedeschi (1981)															
Rizley (1978, Experi-	H								L	L	L			H	−0.29
ments 1 & 2)	H								L	L	H			H	0.55
	H								L		L			L	0.22
	H								L		H			L	0.92
Rosenfield & Stephan	H	H							L					H	1.99
(1978)	H	L							L					H	1.00
Ross, Bierbrauer, &	H								L	L				L	−1.11
Polly (1974)	L								L	L				L	−1.04
Ross & Sicoly (1979,	H								L	H				H	1.09
Experiment 2)															
Schlenker (1975a)	H								L	H			L	H	0.86
Schlenker & Miller	H								L	H			H	H	0.50
(1977a)															
Schlenker & Miller	H								L	H			H	H	0.53
(1977b)	H								L	H			L	H	0.53
Schlenker, Soraci, &	H		H						L	H			H	H	1.14
McCarthy (1976)	H		L						L	H			H	H	1.14
Schopler & Layton	H							L	L	H			H	L	−0.20
(1972)	H							H	L	H			H	L	1.45
Sicoly & Ross (1977)	H								L				L	H	0.95
Snyder, Stephan, &	H								H	H			H	H	1.19
Rosenfield (1976)															
Sobel (1974)	H								L					H	0.57
C. Stephan, Presser,	H								L	H			H	H	0.84
Kennedy, &	H								H	H			H	H	0.56
Aronson (1978)	H								L				H	H	0.65
W. G. Stephan (1975)	H								L				L	H	−0.47
	L								L				L	H	−1.05
W. G. Stephan,	H								H	H				H	1.78
Rosenfield, &															
Stephan (1976)															
Stevens & Jones	H								L				H	H	0.76
(1976)															
Swann, Griffin, Pred-	H		H						L					H	1.18
more, & Gaines	H		L						L					H	−0.55
(1987)															
Taylor & Riess (1989)	H								L					H	−0.21
Thornton & Ryckman	H								H	H			L	H	0.10
(1979)	H								H	H			L	H	−0.17
Tillman & Carver	H								L					H	0.28
(1980)	L								L					H	0.43
Urban & Witt (1990)	H	H							L	H				H	1.94
	H	L							L	H				H	1.94
Watt & Martin (1994)	H								L					H	2.81
Weary-Bradley (1980)	H						H		L	L				L	1.53
	H						L		L	L				L	

Table 1 (*continued*)

Study	1	2	3	4	5	6	7	8	9	10	11	12	13	14	*d*
Weary-Bradley et al.	H								L	L				L	0.33
(1982, Experiments	H								L	L				L	−0.67
1 & 2)	H								L	L				L	1.08
	H								L	L				L	1.81
	H								L	L				L	0.28
	H								L	L				L	2.12
Weiner & Kukla	H			H					L				H	H	1.98
(1970, Experi-	H			L					L				H	H	0.56
ment 5)															
Wells, Petty, Harkins,	H								L				L	H	2.58
Kagehiro, &	L								L				L	H	−0.34
Harvey (1977)	H								L				L	H	1.87
	L												L	H	1.29
Wolosin, Sherman, &	H								L	H			H	H	0.41
Till (1973, Experi-	H								H	H			H	H	0.62
ments 1 & 2)															
Wortman, Constanzo,	H								L				H	H	0.84
& Witt (1973)	H								L				H	H	1.16

Note. Moderators are labeled as follows: 1 = role; 2 = task importance; 3 = self-esteem; 4 = achievement motivation; 5 = self-focused attention; 6 = task choice; 7 = outcome expectancies; 8 = perceived task difficulty; 9 = interpersonal orientation; 10 = status; 11 = affect; 12 = locus of control; 13 = gender; 14 = task type. Level of threat is indicated as follows: H = high self-threat condition; L = low self-threat condition.

Self-esteem. Participants high in self-esteem ($n = 4$) displayed the SSB, $d = 1.053$ (CI = 0.664, 1.442), but those low in self-esteem ($n = 4$) did not, $d = -0.074$ (CI = −0.419, 0.271). The two groups differed significantly, $\chi^2 = 18.03$, $p < .001$, a finding that corroborates the self-threat model.

Table 2
Effect of Moderators on the Self-Serving Bias

Moderator	High self-threat *d*	Low self-threat *d*	χ^2 $(1, N \leq 163)$
Role	0.47	−0.13	30.89****
Task importance	1.01	0.69	2.62*
Self-esteem	1.05	−0.07	18.03****
Achievement motivation	0.18	−0.06	0.55
Self-focused attention	1.78	0.40	7.68***
Task choice	0.50	0.69	0.41
Outcome expectancies	0.40	0.10	5.40**
Perceived task difficulty	0.44	−0.14	4.42**
Interpersonal orientation	0.88	0.44	16.57****
Status	0.79	0.27	36.84****
Affect	1.38	0.49	8.04***
Locus of control	0.83	0.30	5.76**
Gender	0.50	0.28	8.53***
Task type	0.50	0.30	8.76***

Note. The higher the value, the greater the self-serving bias.
* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

Achievement motivation. Neither participants high in achievement motivation ($n = 3$), $d = 0.176$ (CI = −0.279, .631), nor participants low in achievement motivation ($n = 3$), $d = -0.063$ (CI = −0.501, 0.376), displayed the SSB to a substantial degree. Nevertheless, the patterns were directionally consistent with predictions. Contrary to the model, however, the two groups did not differ significantly, $\chi^2 = 0.54$, $p < .46$.

Self-focused attention. Participants in a state of high self-focused attention ($n = 2$), $d = 1.780$ (CI = 1.034, 2.526), displayed the SSB, whereas participants in a state of low self-focused attention ($n = 2$), $d = 0.403$ (CI = −0.225, 1.030), did not. The two groups differed significantly, $\chi^2 = 7.68$, $p < .01$, thus rendering support to the self-threat model.

Task choice. Both participants having high task choice ($n = 4$), $d = 0.496$ (CI = 0.074, 0.917), and those having low task choice ($n = 4$), $d = 0.691$ (CI = 0.262, 0.892), displayed the SSB. These patterns were directionally inconsistent with the self-threat model. In further disconfirmation of the model, the two groups did not differ significantly, $\chi^2 = 0.41$, $p < .52$.

Outcome expectancies. The SSB emerged

when participants expected success (n = 17), d = 0.400 (CI = 0.211, 0.590), but was not present when participants expected failure (n = 17), d = 0.096 (CI = −0.076, 0.269). More relevant to the self-threat model and in support of it, participants manifested the SSB to a greater degree when expecting success than when expecting failure, $\chi^2 = 5.40, p < .05$.

Perceived task difficulty. The SSB was evident among participants who perceived the task as moderately challenging (n = 5), d = 0.441 (CI = 0.061, 0.822), but reversed slightly (i.e., the other-serving bias tended to emerge) among participants who perceived the task as unchallenging (n = 5), d = −0.136 (CI = −0.515, .244). Consistent with the self-threat model, participants who perceived the task as moderately challenging exhibited the SSB to a greater extent than their counterparts, $\chi^2 = 4.42$, $p < .05$.

Interpersonal orientation. The SSB appeared in both competitive (n = 6) and noncompetitive (n = 147) settings, ds = 0.885 (CI = 0.677, 1.093) and 0.440 (CI = 0.388, 0.493), respectively. In line with the self-threat model, the SSB was larger in competitive settings, $\chi^2 = 16.57, p < .001$.

Status. There was evidence for the SSB in cases in which status was equal (n = 29), d = 0.790 (CI = 0.681, 0.899), as well as in cases in which the status of the participant was higher (n = 38), d = 0.273 (CI = 0.147, 0.399). The SSB was larger among equal-status than higher status participants, $\chi^2 = 36.84$, $p < .001$. This finding bolsters the self-threat model.

Affect. Both participants with positive affect (n = 4), d = 1.377 (CI = 0.928, 1.827), and those with negative affect (n = 4), d = 0.492 (CI = 0.075, 0.908), manifested the SSB. In confirmation of the self-threat model, the SSB was more pronounced among participants with positive affect, $\chi^2 = 8.04, p < .01$.

Locus of control. Participants with both an external (n = 5) and an internal (n = 5) locus of control displayed the SSB, ds = 0.835 (CI = 0.526, 1.144) and 0.298 (CI = −0.014, 0.609), respectively. However, participants with an external locus of control magnified the SSB, $\chi^2 = 5.76, p < .05$, a pattern that lends support to the self-threat model.

Gender. Both men (n = 44) and women (n = 40) manifested the SSB, ds = 0.500 (CI = 0.408, 0.591) and 0.278 (CI = 0.160, 0.395), respectively. Nonetheless, consistent with the self-threat model, the SSB was larger among men, $\chi^2 = 8.54, p < .01$.

Task type. The SSB was evident for both participants involved in skills-oriented tasks (n = 111) and participants involved in interpersonal influence tasks (n = 42), ds = 0.502 (CI = 0.446, 0.558) and 0.301 (CI = 0.180, 0.422), respectively. In support of the self-threat model, however, the SSB was larger among participants involved in skills-oriented tasks, $\chi^2 = 8.76, p < .01$.

Publication Bias

We wanted to know whether publication bias qualified this meta-analysis. Was the magnitude of the overall SSB inflated because of selective publication of significant results? We addressed this question by inspecting the relation between sample size and effect size across experiments (Light & Pillemer, 1984). This relation can be interpreted readily in the scatter plot portrayed in Figure 1.

If there is little or no publication bias, the scatter plot should represent a bell-shaped distribution. Effect sizes corresponding to the larger sample sizes ought to appear at the center of the distribution, because such effect sizes will have the lowest amount of variance. Effect sizes corresponding to the smaller sample sizes ought to appear at the edges of the distribution,

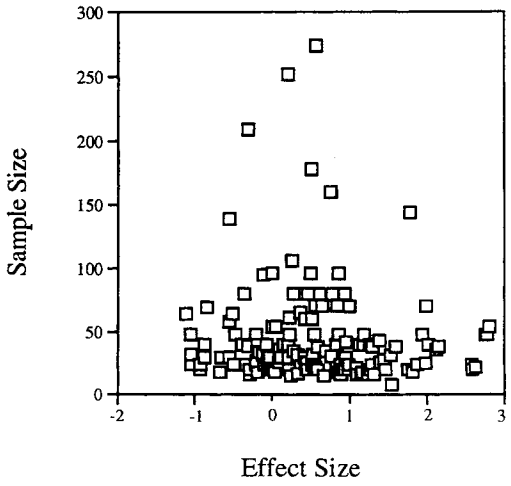

Figure 1. Scatter plot of effect sizes and sample sizes used in the meta-analysis.

because such effect sizes will have the highest amount of variance. Furthermore, the distribution should contain effect size values that are both negative and positive, as opposed to displaying a short drop in the number of effect sizes at $d = 0$. A distribution containing negative effect size values would suggest that negative effect sizes have been published in the literature.

Such a bell-shaped distribution was indeed obtained. The effect sizes corresponding to the larger sample sizes appeared in the middle of the distribution. In addition, the distribution curved smoothly over the $d = 0$ value, thus attesting that negative effect sizes have been published in the literature. In conclusion, there is no evidence for the existence of a publication bias in the SSB literature.

Discussion

Summary of Meta-Analytic Findings

In this article, we have reported a meta-analysis of a large portion of the literature on the SSB, a topic that has attracted the persistent attention of social, personality, organizational, clinical, and developmental psychologists. We reviewed 70 SSB experiments involving 6,949 participants and 163 effect sizes.

We were able to establish that the SSB is a fact, not a fiction. Individuals do make internal attributions for their successes and external (person or situation) attributions for their failures. More important, we demonstrated that the SSB is not an invariant explanatory pattern. Instead, it fluctuates predictably based on level of threat to the self that a specific outcome poses. The SSB in the high self-threat condition was larger descriptively than the SSB in the low self-threat condition for all but 1 of the 14 moderators that we examined: Individuals magnify the SSB when the self is threatened. This finding confirms the self-threat model. Indeed, our meta-analytic review suggests that the variable of self-threat permeates both situational (e.g., interpersonal orientation, status, and task type) and individual-differences (e.g., self-esteem, achievement motivation, and locus of control) moderators of the SSB.

Task choice was the only finding that was inconsistent directionally with the self-threat model. Participants in low task choice groups manifested a larger SSB than participants in high task choice groups. Given the overwhelming support for the model, it is likely that our prediction, rather than the model per se, should be called in question. Perhaps high task choice reflects lowered self-threat: Choosing a task increases the experience of autonomy, and autonomy has recently been found to be associated with an attenuated SSB (Knee & Zuckerman, 1996). Alternatively, task choice may constrain an individual's ability to deny plausibly responsibility for failure (Arkin, Gleason, & Johnston, 1976). We hope that future research will illuminate this issue.

Alternative Accounts

The self-threat model assigns explanatory prominence to the mechanisms of self-protection or self-enhancement. Attributions following unfavorable personal outcomes serve to protect, maintain, or enhance the integrity of the self-concept. Nevertheless, there are alternatives to this account that are worth considering.

One alternative is a cognitive interpretation highlighting the role of success expectancies in the manifestation of the SSB (e.g., Miller & Ross, 1975). As our meta-analysis has demonstrated, success expectancies certainly affect the SSB. We have argued, however, that success expectancies have a motivational component. Those who expect to succeed are more invested in the task outcome and are more likely to experience high levels of self-threat than those who expect to fail.

Another alternative account is a self-presentational interpretation highlighting the role in the SSB of public settings (Weary-Bradley, 1978; Weary-Bradley et al., 1982). Our meta-analysis did not examine directly how public performance affects the SSB. To rectify this problem, we coded the effect sizes on the dimension of public-self-engagement. This dimension reflected the degree to which the public self was at stake. The dimension included (a) type of attribution communication ($n = 8$; participants who believed they would announce their attributions to others were classified under public-self-engagement), (b) expectation of attribution defense ($n = 1$; public-self-engagement participants believed that they would defend their attributions to an observer), (c) anticipated attribution appraisal ($n = 1$; public-self engagement participants believed that the accuracy of their attributions would be checked), (d) pres-

ence of a bogus pipeline ($n = 2$; public-self engagement participants believed that their honesty in reported attributions could be verified), (e) anticipated testing ($n = 7$; public-self engagement participants believed that they would take the same or a similar test in the future), and (f) self-monitoring ($n = 2$; high self-monitors have greater public-self-engagement than low self-monitors; Snyder, 1979). Public-self-engagement indeed gave rise to the SSB ($n = 19$), $d = 0.397$ (CI = 0.223, 0.570).[2] However, the size of the SSB in all of the remaining experiments (i.e., those not involving public-self-engagement) was descriptively larger ($n = 142$), $d = 0.474$ (CI = 0.420, 0.527), although the difference was not statistically significant, $\chi^2 = 0.68$, $p < .408$. These findings may be surprising to researchers who argue for a critical influence of public settings on the SSB. However, as Weary-Bradley (1978; Weary-Bradley et al., 1982) has pointed out, the activation of the public self may, under certain circumstances, lead to a reduced SSB because of strategic responding. Future self-threat can be avoided by setting a precedence of modesty; furthermore, in public self-presentations, one faces credibility constraints (Schlenker, 1975b; Schlenker & Leary, 1982).

A third alternative account emphasizes control or predictability as an explanatory construct (Swann, 1990). The magnification of the SSB is due to threats to control or predictability rather than threats to the positivity of the self-concept. We did not examine directly this account, and we acknowledge its plausibility. The data in the present analysis most relevant to this perspective involve the SSB exhibited by participants with low self-esteem or those expecting failure. The predictability–control explanation would predict that these individuals would manifest an attributional pattern that is the reverse of the SSB. In the experiments we analyzed, however, these individuals showed no bias one way or another. Perhaps the reversal of the SSB would be observed only among participants whose self-esteem is extremely negative.

Nevertheless, we are willing to speculate that, even when threats to control or predictability present themselves, such threats are often likely to follow temporally threats to the positivity of the self-concept (Jussim et al., 1995; Swann et al., 1987). Negative performance feedback affects (i.e., diminishes) the positivity of the self-concept, which is followed by feelings of reduced control or predictability (Sedikides & Strube, 1997).

Finally, beyond the general alternative accounts just presented, specific plausible accounts can also be offered regarding several of the moderators of the SSB. Indeed, some of the moderators we examined probably fit the self-threat model better than do others. For example, high self-esteem may be an outcome of repeated use of the SSB, whereas low self-esteem may result from habitually blaming oneself for unsuccessful outcomes. In addition, the influence of task difficulty on the SSB may not be the result of self-threat. Arguably, failure at easy tasks would be more threatening than failure at moderately difficult tasks; thus, the reduced SSB noted on easy tasks may have been due to another process, such as individuals' neglect in preparing themselves psychologically for potential failure before receiving feedback (Aspinwall & Taylor, 1997; Breznitz, 1983). In all, however, we maintain that self-threat, as an explanatory construct, achieved a satisfactory performance in grouping the 14 moderators that we examined.

Testing the Boundaries of the Self-Threat Model

In this section, we attempt to delineate some of the boundaries of the self-threat model. One issue involves the degree of threat that participants in the meta-analyzed studies experienced. The threat was mild to moderate. Would more extreme levels of self-threat elicit an overly magnified SSB? Alternatively, would individuals accept the extreme threat in a tacit or even helpless manner? For instance, if an individual is told by a group of close friends that he or she is the most socially inept person in town (a testimony accompanied by illustrative examples), will the individual argue forcefully that this is solely due to his or her upbringing, or will the individual succumb to the pressure and accept this detrimental inadequacy?

The self-threat model conceptualizes the SSB

[2] The number of effect sizes corresponding to the six public-self-engagement variables ($n = 19$) is lower than the number of effect sizes just reported ($n = 21$). Two effect sizes were each associated with two different public-self-engagement variables. Hence, we avoided using these effect sizes twice.

as a self-protective strategy implemented under conditions of self-threat. One may respond to threat by abrogating responsibility for the failures in one's life. Consistent application of this strategy can be beneficial to the individual. For example, the use of self-protective strategies, such as the SSB, is associated with successful coping and mental health (Taylor & Armor, 1996; Taylor & Brown, 1988). On the other hand, application of this strategy can also lead to rather harmful repercussions. For example, the individual may be seen as untrustworthy and immature and may be socially and professionally ostracized (Colvin, Block, & Funder, 1995; Schlenker & Leary, 1982; Tice, 1991). Furthermore, the individual's behavior may be hazardous to his or her own physical health (Leary & Jones, 1993; Leary, Tchividjian, & Kraxberger, 1994).

How, then, do individuals manage to display the SSB and still avoid many of the major pitfalls associated with such a tactic? To begin with, individuals may be self-serving in the short term but may become more gracious in their attributions as their aversive state (e.g., low self-esteem or negative affect) dissipates. In addition, individuals may be only mildly self-serving. Indeed, the overall effect size of the SSB in the present meta-analysis was small to moderate. Participants did not deny complete responsibility for their failures; neither did they take full credit for their successes. Instead, they took a little more credit than they should have taken for success and accepted a little less responsibility than they should have accepted for failure. Finally, and perhaps most important, individuals have in their psychological arsenal several rather ingenious strategies for coping with future negative outcomes. For example, they can engage in either anticipatory (Breznitz, 1983) or proactive (Aspinwall & Taylor, 1997) coping, and they can deploy an often calculated attempt toward self-improvement (Klar, Nadler, & Malloy, 1992; Sedikides & Strube, 1995, 1997; Taylor, Neter, & Wayment, 1995).

Implications for Basic and Applied Research Domains

The finding that self-threat plays a crucial role in impelling the SSB has broader implications. To date, the construct of self-threat has received surprisingly little empirical attention. This meta-analysis argues for an explicit focus on self-threat as an explanatory construct across a wide range of research domains. Self-threat, for example, may underlie not only performance attributions but also such seemingly diverse phenomena as out-group rejection, negative attitudes toward crowding, resistance to persuasion pressures, commitment avoidance in dyadic relationships, failure to comply with medical regimens, and voting preferences.

The present findings can be enriched by a developmental perspective. We meta-analyzed experiments that tested young adults, and we documented a link between self-threat and the SSB. A developmental perspective would explore variations in self-threat and the SSB across the life span. At what age does self-threat become a potent force propelling the manifestation of the SSB? Do children of different ages experience self-threat and, consequently, display the SSB in variable magnitude? Are older adults, who presumably have a more solidified self-concept and stable self-esteem, as amenable to self-threat and the accompanying SSB as younger adults?

Our meta-analytic findings also have applied implications. Clinicians within the psychodynamic tradition, for example, have emphasized the role of self-threat (or ego-threat) as a precipitating factor in defensive behavioral patterns. The present findings provide empirical support for these assertions. The findings are also relevant to organizational settings. Employees often manifest the SSB at the expense of coworkers, a phenomenon that can have deleterious consequences for group cohesion and morale. Managers could capitalize on the insight of this meta-analysis, namely that self-threat magnifies the SSB. Specifically, managers may wish to attempt to reduce the level of perceived self-threat that employees face. This endeavor can be accomplished via an intervention that reinforces the organizational presence of the low-threat condition of each of the 14 moderators that we discussed.

Conclusion

The current meta-analytic review has demonstrated that the SSB is viable, is not the result of publication bias, and is increased under conditions of self-threat. The self-threat model was successful in summarizing parsimoniously a

large portion of a quarter century of research on the SSB. It is our hope that this effort will stimulate primary-level empirical pursuits across disciplines of psychology and will have potential for fruitful applications.

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Received September 15, 1997
Revision received April 15, 1998
Accepted August 20, 1998 ■