Self-enhancement and Self-affirmation:

The Consequences of Positive Self-thoughts for Motivation and Health

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Self-enhancement and self-affirmation enable people to manage challenging events. The validity of this statement has been demonstrated repeatedly with respect to challenges as diverse as coping with threatening information, practicing effective health behaviors, maintaining persistence and motivation to achieve difficult goals, coping with daily stress, and managing life-threatening events. Put simply, research on self-enhancement and self-affirmation helps to address the important question, how do people restore their balance following a stressful event to the point that they can once again pursue the goals and activities that usually entrance them? We will maintain that processes involving self-enhancement and self-affirmation are key to understanding how psychological health is maintained and especially how it is restored following challenging events.

Threat and the Self

In addressing this question, Taylor's research on cognitive adaptation (Taylor, 1983) and on positive illusions (e.g., Taylor and Brown, 1988) and Steele's research on self-affirmation (e.g., Steele, 1988; Sherman & Cohen, 2002) make very similar points. Both assert that the process of enhancing and/or affirming personal attributes and values musters valuable resources for grappling with challenges. Whereas Taylor has largely studied these processes in populations experiencing naturally-occurring threats and in people for whom self-enhancement is a chronic mode of addressing life challenges, research on self-affirmation has more commonly studied these processes experimentally.

The findings, however, dovetail well in presenting a picture of how enhancing the self enables people to manage threats to the self.

<u>Managing Life-Threatening Events</u>

The importance of self-enhancement for managing challenging events was first proposed in a theory of cognitive adaptation (Taylor, 1983). Threatening events can undermine the motivation to pursue and achieve goals, and unexpected setbacks such as the diagnosis of a life-threatening illness, a natural disaster, or an unexpected problem at work or in one's romantic life have the ability to bring purposeful activity to a grinding halt, at least temporarily. In an early study of breast cancer patients, Taylor (1983) and her colleagues (Taylor, Lichtman, and Wood, 1984) found that self-enhancing beliefs were important for restoring a positive sense of self and for making effective use of psychological resources for coping. Specifically, the women they studied experienced positive changes in themselves that they attributed to having grappled with the threat of cancer and defeated it, at least on the short-term. Many women said that they considered themselves to be more compassionate, stronger than they had been before, and able to take charge of their lives. They often reported an enhanced sense of purpose in their lives. Many women stated that they believed they now had personal control over their illness and the course of their remaining time.

The women also coped with breast cancer by making social comparisons in a self-enhancing manner (Taylor, 1983). Festinger's social comparison theory (1954) would suggest that people make upward social comparisons in threatening situations in order to learn how to cope more effectively. But Taylor, Lichtman, and Wood (1984) found that rather than comparing themselves to women who were doing better, most of the women

compared themselves to those who were doing worse, and used these downward comparisons to bolster the self by inferring how relatively well they were coping with their cancer (Taylor & Lobel, 1989).

When people develop spontaneous self-enhancing perceptions in response to a threatening event, these perceptions are often based on a modest degree of illusion. There is, for example, no evidence that people can personally affect the course of a potentially fatal illness, but such beliefs figure into such accounts nonetheless. Findings like these have now been repeatedly replicated in people coping with a wide array of threatening events and in a diverse range of samples (Updegraff and Taylor, 2000; Updegraff, Taylor, Kemeny, and Wyatt, 2002). Because that evidence has been extensively reviewed elsewhere (see Updegraff and Taylor, 2000), it will not be reiterated here. However the fact that self-enhancement so reliably occurs in response to threatening events with clear beneficial effects on adjustment raises the intriguing possibility that self-enhancement has more general positive effects, not just those manifested in response to intensely stressful events.

The Dynamics of Self-Enhancement

Drawing on this idea, Taylor and Brown (1988) put forth a theory of positive illusions, one component of which is self-enhancement. Specifically, because self-aggrandisement had so clearly helped women with breast cancer adjust to their altered circumstances, Taylor and Brown suggested that illusions such as self-enhancement may be adaptive for mental health and well-being more generally. Taylor and Brown (1988) reviewed a substantial array of evidence to show that positive illusions, including self-enhancement, the illusion of control, and unrealistic optimism, are highly prevalent in the

everyday thinking of normal, well-adjusted people and that these beliefs contribute actively to the criteria thought to be indicative of the healthy, well-functioning person: the ability to be happy or relatively contented with one's life; the ability to care for and about others; openness to new ideas and people; the capacity for creative and productive work; and the ability to cope with stressful events.

As evidence of the mild but common tendency toward self-enhancement, Taylor and Brown (1988) reviewed literature showing people's disproportionate interest in and recall of information about their positive rather than negative qualities, their tendency to take credit for good outcomes (Miller & Ross, 1975), their tendency to see themselves more positively than others see them (e.g., Lewinsohn, Mischel, Chaplin, & Barton, 1980), and their tendency to see themselves as more likely than their peers to possess positive attributes and less likely to possess negative attributes (Alicke, 1985; Brown, 1986). On the basis that everyone cannot be better than everyone else, Taylor and Brown referred to this finding as evidence of a positive illusion of self-enhancement.

Self-enhancement has not always enjoyed a good reputation. In early work on mental health, positively inflated self-perceptions were regarded as evidence of poor mental health (Jahoda, 1958; Maslow, 1950). Personality psychologists addressing this "defensive neuroticism" view of self-enhancement have maintained that self-enhancing cognitions are reliably associated with adverse outcomes indicative of poor psychological functioning (e.g., John & Robins, 1994; Paulhus, 1998; Shedler, Mayman, & Manis, 1993). For example, Colvin, Block, and Funder (1995) found that people who self-enhanced relative to the perceptions of trained clinicians or friends' perceptions of them were perceived to be psychologically maladjusted. John and Robins (1994) reported that

people who self-enhanced in a group discussion scored higher on a measure of narcissism than those who did not self-enhance (see also Asendorpf and Ostendorf, 1998; Paulhus, 1998). Robins and Beer (2001) found that self-enhancement of one's performance in a group discussion or academic setting was associated with short-term affective benefits but long-term declines in self-esteem; over the long-term, too, self-enhancement was associated with task disengagement, as disconfirmation of inflated self-perceptions became evident. Drawing on this evidence, the defensive neuroticism position represents self-enhancement as indicative of an enduring personality profile marked by narcissism, self-deception, and neuroticism, and accordingly, self-enhancement is thought to be characteristic of a specific sub-group of maladjusted people, rather than the population as a whole.

The positive illusions position maintains, in contrast, that self-enhancement is characteristic of most people and ebbs and flows as a function of situational constraints (Taylor & Gollwitzer, 1995). Self-enhancement is most evident in the abstract when it holds the power to inspire and motivate and less evident when it can be directly disconfirmed by the feedback of specific situations (Armor & Taylor, 1998). In an empirical investigation designed to address these competing accounts, Taylor, Lerner, Sherman, Sage, and McDowell (2003a) comprehensively assessed the relation of self-enhancement to mental health by employing multiple measures of self-enhancement generated by advocates of both theoretical positions, as well as multiple measures of mental health, also reflecting both theoretical positions. As such, the study was able to examine the positive illusions prediction, which maintains that self-enhancement is positively related to mental health and the defensive neuroticism position that self-

enhancement is negatively related to indicators of mental health. Across multiple measures and indicators, the relation of self-enhancement to mental health was largely linear and positive, as predicted by the positive illusions position. This was true regardless of the theoretical origins of the self-enhancement and mental health measures.

Thus, a modest degree of self-enhancement appears to be associated with mental health. Believing one has many talents and positive qualities, and more talents and more positive qualities than one's peers, allows one to feel good about the self and to deal with the stressful circumstances of daily life with the resources conferred by a positive sense of self. As such, these self-enhancing beliefs help people thrive in times of stress that might otherwise leave them dispirited and unable to pursue their goals.

<u>Dynamics of Self-Affirmation</u>

Self-affirmation theory (Steele, 1988; Aronson, Cohen, & Nail, 1999; Sherman & Cohen, 2002) begins with the premise that people are motivated to maintain the perceived worth and integrity of the self. When people experience a threat to the self, be it a failure experience, information suggesting that one has acted wrongly, or information contradicting one's beliefs, people are motivated to respond to the threat in such a way as to restore self-worth. There are three categories of responses that people could make to such threats to the self. First, people could respond directly to the threat, by accepting the failure or threatening information. However, the need to maintain positive self-regard (Taylor & Brown, 1988) often makes this very difficult to do. Second, people could respond directly to the threat and devalue the threat in some way. We refer to this as a defensive bias (Sherman & Cohen, 2002), because the evaluation serves to minimize the threat at the expense of learning from important, though threatening, information. But

self-affirmation theory proposes that there is greater flexibility in how people can respond to threats than these two alternatives. People can also respond to threats indirectly, by affirming alternative self-resources. Since the overall goal of the self is to maintain perceived worth and self-integrity, when people affirm the self, this goal is achieved. Consequently, self-affirmation serves a buffering function and helps people deal with the threat.

The original self-affirmation studies suggested that cognitive dissonance stems from a threat to the self-concept. This was demonstrated in studies (e.g., Steele & Liu, 1983) in which people who reflected on important values no longer had the need to reduce their dissonance by engaging in some sort of rationalization. Recent work on self-affirmation has extended this logic by demonstrating that when people affirm important self-resources, they are less likely to be defensive and devalue threatening information, and consequently, are more open to potentially threatening information (Sherman & Cohen, 2002).

One of the most challenging threats individuals face is health information suggesting the personal potential for ill health. Health information can threaten the self by suggesting that people have acted unwisely by, for example, smoking, drinking, or practicing unsafe sex. Although it would be optimal if people responded to personal health information by changing their behavior, people can be quite resistant to personally threatening health messages, and subsequently, be less likely to change their behavior. In her work on motivated inference, Kunda (1987) has shown that when a health message is of high personal relevance, people are more likely to scrutinize that information for fault than are people for whom the message has no special relevance (see also Lieberman &

Chaiken, 1992). Thus, individuals who have the most to gain from health communications are often the least likely to accept them. One study found that sexually active students who saw an AIDS educational message responded by seeing themselves as being at reduced risk for sexually transmitted diseases, a defensive response (Morris & Swann, 1987).

Sherman, Nelson, and Steele (2000) examined defensive responses to threatening health information in the context of breast-cancer prevention. Participants were women who were either coffee drinkers or non-coffee drinkers, and they reviewed a scientific report linking caffeine consumption to fibrocystic disease, a precursor to breast cancer. The article concluded by suggesting that women can reduce their risk for fibrocystic disease by reducing their caffeine consumption. As in earlier research (e.g., Kunda, 1987), coffee drinkers were more critical of the scientific article and thus more resistant to the message than were non-coffee drinkers. Yet, coffee drinkers who had reflected upon a personally important value prior to reading the threatening messages (and who were, thus, self-affirmed) were more open to the information contained in the report than were non-coffee drinkers, and they intended to reduce their coffee drinking accordingly. Because the motivation to maintain the self-image was achieved by the self-affirmation, people who would otherwise have felt threatened by the health message were less resistant to the threat and more open to the message. A second study (Sherman et al., 2000) found that sexually active students who completed a similar self-affirmation task prior to viewing an AIDS-educational video saw themselves as being at increased risk for HIV (relative to no-affirmation controls) and engaged in more positive health behaviors, namely purchasing condoms and taking educational brochures.

Self-affirmations can also affect the type of social comparisons people make in response to threat. Participants in a study by Spencer, Fein, and Lomore (2001) received bogus negative feedback about their intelligence based on a test they had taken. Then, some participants completed a self-affirmation task of writing about a personally important value (others wrote about an unimportant value). Participants then had the opportunity to learn more about either a very effective competent person (which would allow them to make upward social comparisons) or a less effective person (which would allow them to make downward social comparisons). The non-affirmed people chose to make downward social comparisons, but those who completed the self-affirmation were more likely to make upward social comparisons. This pattern again suggests that self-affirmation can serve as a means to enhance the self, and thus promote openness to what would be otherwise threatening information.

Thus, in these ways, self-affirmation can serve as a resource for people dealing with challenging events, such as potential threats to one's health, and enable them to confront challenges more openly and directly.

<div align="center">Self-Enhancement and the Pursuit of Goals</div>

Self-enhancement may not only restore balance following exposure to threatening events and make people more receptive to useful negative information; it may also contribute directly to the pursuit of goals.

Self-Enhancement, Goals, and Performance

Can self affirmation and self-enhancement fuel the ability to set high goals and strive persistently to achieve them? In their original paper, Taylor and Brown (1988) reviewed evidence to suggest that a positive sense of self is associated with working

longer and harder on tasks. In particular, such illusions as self-enhancement may help

people try harder in situations with objectively somewhat poor probabilities of success;

although some failure is inevitable, ultimately these illusions may pay off with more

progress than would be the case with lack of persistence (see also Greenwald, 1980).

Armor and Taylor (2003) tested this prediction by manipulating positive illusions.

This was accomplished through the introduction of deliberative or implemental mind sets.

Previous research (Taylor & Gollwitzer, 1995) had found that when people are

deliberating whether or not to undertake a particular task, their optimism and task-

relevant self-assessments are less inflated and more accurate than is the case when they

have decided to undertake a task and are preparing to implement it; during

implementation, positive illusions are much more evident. In the Armor and Taylor

(2003) study, participants were induced either to deliberate the merits of participating in a

particular task (a scavenger hunt) or told that they would be shortly doing the task

(implementation). As in the previous research, deliberation produced reliably pessimistic

expectations regarding the task, compared to implementation. Specifically, those who

deliberated the pros and cons of participating in a scavenger hunt predicted that they

would do more poorly and saw the hunt as inherently more difficult that did those who

entertained thoughts of actually doing it. A second investigation replicated these effects

and also assessed performance on the scavenger hunt. Those in the implemental mind set

condition were not only more motivated to pursue the task, but also did significantly

better on the task, i.e., they found more objects on the scavenger hunt, albeit not as many

as they had predicted they would find. Thus, positive illusions, which in this case were

induced by an implemental mind set, enhanced task expectations and performance

predictions, in turn enhancing performance. The favorable assessment induced by this manipulation ensured that the goal was actively and aggressively pursued.

The Self and Social Functioning

A particular sticking point in the literature on self-enhancement has been whether self-enhancement fosters success with respect to social goals. Are self-enhancers more or less favorably perceived by peers than those low in self-enhancement? Research suggests that self-enhancers can be seen as conceited, hostile, and self important (Colvin et al., 1995) or as self-centered and narcissistic (Paulhus, 1998). The positive illusions position, however, maintains that self-regard is associated with the capacity for positive and rewarding social relationships. Taylor et al.'s (2003a) previously-described study assessed the social relationships experienced by participants in an effort to test between these two positions. They found little evidence that self-enhancers experienced social costs. Using several different measures of self-enhancement, those people categorized as high self-enhancers were perceived to be as likeable and as interpersonally capable as those who were not self-enhancing. In addition, the friendships of high self-enhancers were as long, as close, and as satisfying as those of low self-enhancers. Even when self-enhancing individuals were seen less positively by their friends than they saw themselves, the friendships showed no signs of compromise or lack of closeness. There was, accordingly, no evidence that self-enhancers experienced social costs.

Recent research (Master & Taylor, 2004) suggests a possible reason why the social costs that would seem to be almost inevitably associated with self-enhancement do not necessarily occur. Master and Taylor found that highly self-enhancing individuals not only enhance their personal qualities directly through self-affirming statements, but

enhance themselves indirectly by affirming the positive qualities of their friends, families, the institutions with which they are affiliated, and their personal activities. Thus, for example, in their study, a person who referred to himself as performing exceptionally well in his courses was also more likely to report that he received support from his professors, had a great set of friends, and enjoyed several rewarding leisure time activities. These findings could, of course, be due to a general positivity effect, rather than to self-enhancement per se. However, analyses that controlled for general positivity revealed that these indirectly self-serving statements made a positive impression on others. Because indirectly self-enhancing statements were approximately 2.5 times more common than directly self-enhancing statements, Master and Taylor (2004) suggested that the potential socially adverse effects of blatant self-enhancement may have been muted by the high frequency of indirectly self-enhancing statements expressed by these individuals. That is, instead of coming across as self-centered, these individuals may have come across instead as upbeat people who enjoyed their lives.

Group-Serving Judgments and Self-Affirmation

The research described above by Master and Taylor (2004) shows how people enhance the groups of which they are members. People often make decisions and evaluate information in ways that favor the interests, reputation, and esteem of their groups. People favor their teams by making negative assessments about other teams (Hastorf & Cantril, 1954) and favor their in-groups by derogating out-groups (Tajfel, 1982). This process helps people maintain motivation when their groups experience challenging or threatening events. For example, after a World Series, baseball players and managers from the winning team made more internal attributions for the outcome of the

game (we won because we played so well) and players and managers from the losing team made more external attributions (we ran into a lot of bad luck) (Lau & Russell, 1980; Winkler & Taylor, 1979). For both groups, such attributions can help them maintain motivation to see themselves as competent and successful.

In a series of studies, Sherman and Kim (2004) examined whether such group-serving judgments serve a self-protective function. We reasoned that people defend their groups, in part, because groups are an important part of how they see themselves (Tajfel & Turner, 1986). When these teams encounter challenging events, people will make biased social judgments to protect the group, and consequently, the self. However, building on the logic of self-affirmation theory (Steele, 1988), if people have the opportunity to affirm the self in an important, but unrelated domain, then they should be less group-serving, and more open to potentially threatening information about the group.

Sherman and Kim (2004) tested this hypothesis in two studies. Participants were intramural athletes who had just completed a team sports competition and were asked to make attributions for the outcome of the game. Consistent with other research demonstrating group-serving judgments, players who won the game made more internal team attributions for the outcome of the game (to the team's teamwork) than team members who lost the game. However, participants who completed a self-affirmation task prior to making their judgments were not group-serving in their attributions; as winners or losers, they were equally likely to attribute the outcome of the game to internal factors. Thus, people were more open to the threatening but potentially valuable information that bad teamwork had led to defeat when they were buffered by a self-affirmation. A second study replicated this finding, and found that the effect of self-

affirmation was partially mediated by the extent to which the athletes felt that they were worthy team members.

Thus, people are less likely to be group-serving in their judgments when their self-worth is affirmed. Other evidence for this point comes from research on out-group derogation and prejudice. Fein and Spencer (1997) found that people were less likely to negatively evaluate members of stereotyped groups when their self-worth was affirmed. Their argument is a particularly good demonstration of the links between self-enhancement and self-affirmation. They posit that one way people confront the vulnerabilities and frustrations in everyday life is by using stereotypes and prejudices to enhance the self (Wood & Taylor, 1991). But if the self-protective motivation is satisfied by some other means (such as a self-affirmation), then people should be less likely to stereotype others. Fein and Spencer supported this reasoning by demonstrating that after a threat, people made more prejudiced judgments of a member of a stigmatized group, and this process served to increase their state self-esteem (relative to those who did not have the opportunity to stigmatize). However, those who were affirmed by receiving positive feedback did not derogate an out-group member, because they had less of a motivational need to bolster their self-esteem.

<u>The Self and Biological Functioning</u>

We have suggested that self-enhancement is a resource for fostering goal pursuit and for restoring motivation following a threat. Might self-enhancement accordingly represent a resource with biological implications for managing stress as well and might self-affirmation reduce stress and illness by buffering the self? Threatening and stressful events not only take a toll on the psyche, but they also take a toll on biological resources.

When engaged by stressful circumstances, the autonomic nervous system and the hypothalamic-pituitary-adrenocortical (HPA) axis become activated and mobilize a person for "fight-or-flight." Although these responses are protective in the short-term, over the long-term, recurrent or chronic activation of these stress-regulatory systems can confer damage with adverse implications for health (e.g., McEwen, 1998).

If self-enhancement helps a person to manage stressful conditions, then biological responses to stress may be lower or less frequent in people who are high in self-enhancement. As a result, self-enhancers may experience a lesser chronic toll on their biological stress regulatory systems then those who lack this resource, by virtue of less wear-and-tear across the numerous stressful and challenging events to which people are inevitably exposed. Accordingly, one might expect self-enhancement to be associated both with chronically better regulated stress systems, as well as with lesser acute responses to specific stressful events (see McEwen, 1998).

In contrast to this viewpoint, however, researchers adopting the "defensive neuroticism" view of self-enhancement have suggested that self-enhancement leads to self-deceptive suppression of negative information about the self (e.g., Eysenck,1994; Shedler et al., 1993; Myers & Brewin, 1996; Paulhus, 1998; Weinberger, 1990; Weinberger & Schwartz, 1990; Bonanno, & Singer, 1990). The suppression or repression of negative information is believed to be physiologically taxing, and so if the defensive neuroticism account of self-enhancement is correct, one might expect to see adverse physiological and neuroendocrine profiles associated with self-enhancement, instead of positive ones. Likely manifestations would appear in the form of overly active stress

systems, such as higher or poorly-regulated autonomic functioning or elevated HPA axis activity chronically and/or in response to stress.

This hypothesis was explicitly tested by Shedler and colleagues (Shedler et al., 1993) who examined "the illusion of mental health." They maintained that people who self-enhance on mental health measures but who are judged by clinicians to be distressed represent a group that is at risk for poor mental health and overactive stress regulatory systems. Specifically, they argued and reported evidence that those with "illusory mental health" had higher cardiovascular reactivity during laboratory stressors than those judged to be genuinely mentally healthy (those who rated themselves high in mental health and were perceived by a clinician to be mentally healthy.)

In an effort to test between these alternative positions, Taylor, Lerner, Sherman, Sage, and McDowell (2003b) identified individuals who were either high or low in self-enhancement and compared their biological responses to laboratory stress challenges. Consistent with the positive illusions position, and counter to the predications of the defensive neuroticism position, they found that high self-enhancers had significantly lower cardiovascular responses to stress, more rapid cardiovascular recovery, and lower baseline cortisol levels. (Cortisol is an indicator of the functioning of the HPA axis). Consistent with the viewpoint that self-enhancement represents a psychological resource, the association between self-enhancement and lower baseline cortisol was mediated almost entirely by the psychological resources that people high in self-enhancement demonstrated, such as optimism, a sense of personal mastery, and an extroverted style.

Of particular significance was the fact that self-enhancers were not only protected in the immediate stressful circumstances that demanded their abilities to cope with stress

(e.g., lesser cardiovascular reactivity to laboratory challenges), but also demonstrated biological responses to the stressors suggestive of chronically better functioning stress regulatory systems. Specifically, baseline heart rate was somewhat lower than was true for low self-enhancers, recovery from stress was significantly faster (the capacity to recover from stressful events is thought to be an important parameter indicative of the chronic functioning of the cardiovascular system), and baseline cortisol levels were lower. Thus, the fact that self-enhancers appear to have biological stress regulatory systems marked by signs of better functioning suggests that self-enhancement may have been a biologically protective resource across previous encounters with stress as well.

The biologically protective effects of self-enhancement are not confined to physiological and neuroendocrine responses to laboratory stressors; they are also manifested in disease course. For example, in a series of studies with people infected with HIV or diagnosed with AIDS, Taylor and colleagues found that those who held unrealistically positive views of their ability to stave off a rapid course of illness, actually experienced a less rapid course of illness and a longer time period before death (Reed, Kemeny, Taylor, & Visscher, 1999; Reed, Kemeny, Taylor, Wang, & Visscher, 1994; see also Bower, Kemeny, Taylor, & Fahey, 1998; Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000 for a review). In this research, we (Taylor et al., 2000) had speculated that positive illusions such as self-enhancement may keep physiological and neuroendocrine responses to stress at low levels, as evidenced in lesser autonomic activation and lower HPA axis responses to stress. Because these systems exert important regulatory effects on the immune system, chronically lower stress responses of people higher in self-enhancing perceptions might account for a less rapid course of HIV

infection. The laboratory evidence noted above, namely that self-enhancement is associated both with fewer signs of chronic wear-and-tear on biological stress regulatory systems and with lesser cardiovascular responses to laboratory challenges, is consistent with this pathway.

Reducing Stress and Illness by Affirming the Self

The self-affirmation research tradition likewise indicates that self-affirming activities can serve as a buffer against stressful events, and result in positive health outcomes. Keough (1997) conducted a naturalistic field study in which college students wrote a series of essays over their winter break. Participants in the self-affirmation condition wrote 2 pages about the events of the day, and their feelings about those events in the context of their most important value. There were three control conditions: one in which participants wrote about positive experiences, one in which they wrote about the events of someone else's day, and a no-writing control. Participants wrote every other day for the two-week winter break period. At the conclusion of the study, participants completed a number of self-report questionnaires to assess physical illness symptoms. Participants in the self-affirmation condition reported the fewest physical symptoms. A second study replicated this basic finding and found that the self-affirmation was more effective among those who were experiencing more constant threats to the self, as assessed by their self-reported daily hassles. As further evidence that self-affirmation reduced stress, there was a strong correlation between perceived stress and illness symptoms. Those in the self-affirmation condition reported less perceived stress over vacation and fewer illness symptoms. Thus, it appears that self-affirmation is a potential

health intervention for people who are dealing with stressors and threats to the self, an exciting direction for future research.

<center>Benefits of Self-Enhancement: Exploring Some Challenges</center>

Enhancing the self has clear benefits for goal pursuit and for managing stress, but at least two areas of research present challenges to the generality of these benefits. The first is how one reconciles self-enhancement with obvious needs to monitor reality accurately. The second issue concerns whether these processes characterize some cultures more than others.

Reconciling Self-Enhancement with Accuracy Needs

Doesn't self-enhancement entail the risk that falsely positive self-perceptions will promote errors and inaccuracies in the selection of goals or courses of action? For example, might not a person high in self-enhancement overshoot his or her abilities, select tasks that are too difficult, promise more than he or she can deliver, or otherwise thwart or undermine the beneficial outcomes that positive illusions are thought to foster? Two characteristics of self-enhancement may keep these concerns from being problematic. The first is that, although people generally inflate their personal qualities, their relative accuracy is very high, as compared, for example, with friends' assessments of them on those same qualities (Taylor et al., 2003a). Thus, although people may consider themselves to be, for example, more athletic or artistic than is actually true, they have a *relatively* accurate sense of how athletic or artistic they are, and are therefore unlikely to pick professional sports or fine arts as occupations, if their talents in these arenas are modest.

The second factor that may keep self-enhancement from promoting errors and inaccuracies in life choices is the fact that self-enhancement is situationally responsive and more evident at the general than at the specific level, when it could be disconfirmed (Armor & Taylor, 2003). Specifically, self-enhancement is greater at the beginning of a project, when it has the power to motivate people to carry through their efforts toward their goals, than at the end of a project when modest achievements and their discrepancies from hoped-for results might be dispiriting (Shepperd, Ouellette, & Fernandez, 1996). Self-enhancement is more in evidence when personal qualities are ambiguous than when they are concrete, with clear behavioral referents generating the potential for disconfirmation (e.g., Dunning, Meyerowitz, & Holzberg, 1989). Self-enhancement is more in evidence when a course of action has been selected than when it is under debate; as noted, when people are debating the pros and cons of a particular course of action, their perceptions both of that undertaking and of their personal abilities to achieve it are more modest and in line with reality than is the case when they are preparing to implement it (Taylor & Gollwitzer, 1995). Thus, people are most likely to be self-enhancing at the general level when the chances that they will be proven wrong are negligible, but they become more conservative and modest in specific situations when exaggerated self-assessments may be subject to scrutiny or might lead them down risky paths (see McKenna & Myers, 1997).

Rather than promoting errors in judgment, self-enhancement and self-affirmation seem to promote more unbiased processing of information (Sherman & Cohen, 2002). One set of studies supporting this point has examined the disconfirmation bias, the tendency to spend effort and energy disconfirming information that contradicts strongly

held beliefs (Lord, Lepper, & Ross, 1979; Edwards & Smith, 1996). One of the reasons that people are so resistant to belief disconfirming information is because it threatens how they see themselves. Consequently, self-affirmation should secure the self and make people more open to belief-disconfirming information. Cohen, Aronson, and Steele (2000) examined this issue with opponents and proponents of capital punishment, who were presented with a persuasive scientific report that contradicted their beliefs about the death penalty's effectiveness as a deterrent for crime. As in past research (Lord et al., 1979), participants were very resistant to this type of information, exhibiting a disconfirmation bias. They found flaws in the methodology of the studies reported, they suspected bias on the part of the authors of the report, and they persisted in their attitudes toward capital punishment. In contrast, participants who completed a self-affirmation task were much more open to the contradictory information. Self-affirmed participants were less critical of the reported research, they suspected less bias on the part of the authors, and they even changed their overall attitudes toward capital punishment in the direction of the report they read. Coupled with the self-enhancement research described above, the self-affirmation studies suggest that, by reflecting on important self-resources, people can become less biased, rather than more biased, in their judgments and decisions.

Culture, Self-enhancement, and Self-affirmation

Are the benefits of self-affirmation and self-enhancement cross-cultural or specific to western cultures? Some cultural psychologists maintain that there is not a universal need for positive self regard and that there are, instead, cultural differences between East Asians and North Americans in the extent to which they self-enhance (Heine, Lehman, Markus, & Kitayama, 1999). As Heine (2003) noted, there are two

forms this argument can assume about cultural differences in self-enhancement, a weak

form and a strong form. The weak form argues that East Asians enhance less than North

Americans. There is much evidence to support the weak form of the argument. Heine and

Hamamura (2003) conducted a meta-analysis on published studies making cross-cultural

comparisons in self-enhancement and found that East Asians show weaker self-

enhancement than Westerners in 79 out of 81 studies. The average effect size for the

cross-cultural comparison was large, $d = .83$. Thus, a great many studies support the

argument that East Asians enhance less than Westerners.

The strong form of the argument is that East Asians do not self-enhance (Heine,

2003). As Brown and Kobayashi (2003) put it, this argument is provocative "because it

challenges the claim that self-enhancement needs are universal, arguing instead that

people from East Asian cultures feel no desire to enhance their feelings of self-worth (p.

492)." Evidence for the strong form of the argument comes from the many studies

reviewed by Heine et al. (1999) and from the meta-analysis finding that across all of the

studies, East Asians were not self-enhancing (average $d = .01$) (Heine & Hamamura,

2003).

A number of researchers have challenged this notion. For example, Kurman

(2003) argued that cultural differences in modesty mediate cultural differences in self-

enhancement and that when cultural differences in modesty are statistically controlled

for, there are no longer cultural differences in enhancement. Brown and Kobayashi

(2003) argued that East Asians do self-enhance on traits that are important to them, and

that past studies showing a lack of self-enhancement reflect are based on studies that used

traits that are more important to Westerners than East Asians. They found that East

Asians are much more self-enhancing when they rate traits that are important to them rather than unimportant traits (see also Brown & Kobayashi, 2002; Sedikides, Gaertner, & Toguchi, 2003). Other studies, however, have found an opposite pattern, namely that East Asians are less self-enhancing in domains important to them (Heine, Kitayama, & Lehman, 2001; Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997).

The issue of whether there are cultural differences in self-enhancement raises a number of important theoretical and methodological issues. From a theoretical standpoint, it places the strivings for self-enhancement so documented in Western cultures into a cultural context. What are the cultural assumptions, practices, and ideologies that facilitate self-enhancement? Kitayama et al. (1997) asked Americans and Japanese to come up with concrete examples of success and failure situations in which their self-esteem could be positively or negatively influenced. A second group of Japanese and American students evaluated how relevant the success and failure situations were for their self-esteem. The American college students saw the success situations (e.g., getting an A+ on a paper) as much more relevant for their self-esteem, and the Japanese college students saw the failure situations (e.g., being ignored in the presence of other people) as much more relevant for their self-esteem. Within the two cultures, then, different situations may be seen as relevant for self-esteem, with the concomitant effects of promoting self-enhancement in the U.S. and self-criticism in Japan. Thus, the cultural psychology debate has pointed to the importance of identifying the context within which people self-enhance.

From a methodological perspective, the debate about culture and self-enhancement has highlighted some important issues regarding the measurement of self-

enhancement. For example, in the meta-analysis by Heine and Hamurara (2003), one methodology that most clearly demonstrated East Asian self-enhancement was the self-other bias (also known as the better-than-average effect) (e.g., Brown & Kobayashi, 2002). However, they note that there are some important methodological issues to consider with this measure. It appears that, when people compare an individual (a singular person) to the average person (a mean of a hypothetical distribution), they tend to view everybody as better than their group's average (Klar & Giladi, 1999). Indeed, people view randomly selected others as superior to the average of the group, which raises questions of whether self-other differences truly measure self-enhancement or are reflective of this cognitive bias (Giladi & Klar, 2002). Thus, methodologically, one important suggestion for studying self-enhancement is to utilize a number of different methodologies to converge on the concept. This strategy was adopted in a recent investigation (Taylor et al., 2003a) in which we compared three distinct measures of self-enhancement. Patterns of results did not vary by whether self-enhancement was assessed comparatively or not (see also Kwan, John, Kenny, Bond, & Robbins, 2004).

The question of whether self-affirmation can reduce biased social judgments among individuals from collectivist cultures has received some attention. Heine and Lehman (1997) found that individuals from collectivist cultures did not experience cognitive dissonance, and consequently, a self-affirmation manipulation was ineffective. However, given that there was no biased judgment to reduce, it remains an open question as to the efficacy of self-affirmation among East Asians. It does seem likely that the effects of affirmation in collectivist cultures may be different from the effects observed in individualist cultures. One possibility suggested by Heine and Lehman (1997) is that

members of collectivist cultures may be less motivated to protect their feelings of self-worth because their culture places less emphasis on maintaining a positive self-image. However, it is also possible that members of collectivist cultures are just as motivated as members of individualist cultures to protect the self, but that they would be more responsive to collectivist affirmations (e.g., of social relationships) than to individualist affirmations (e.g., of personal values; see Heine & Lehman, 1997).

A recent study by Hoshino-Browne and colleagues shed light on this question, and supported the second possibility (Hoshino-Browne, Zanna, Spencer, & Zanna, in press). Using a cognitive dissonance paradigm, participants (who were either Asian-Canadian or European-Canadian) made choices for either themselves or their friends. As in Heine and Lehman (1997), when the Asian-Canadians made choices for themselves, they experienced no cognitive dissonance, and did not justify their choice by spreading the alternatives between the chosen and non-chosen object. In contrast, when the Asian-Canadians made choices for their friends, they appeared to exhibit cognitive dissonance, and justified their choice by spreading the alternatives between the chosen and non-chosen object. Most important and central to our concerns, this tendency was reduced among Asian-Canadian participants who completed a collectivist affirmation, that is, when they had written about a value that was important to their family, and not reduced among those who completed the individualist affirmation. Thus, it appears that Asians can be affirmed; however, the affirmation needs to be congruent with the collectivist sense of self (Markus & Kitayama, 1991).

Consistent with this argument, Kurman (2001) examined whether self-enhancement may assume different forms in collectivist versus individualistic cultures.

She compared the self-perceptions of people in collectivist (i.e. Singapore, Israeli Druze) and individualistic (Israeli Jews) cultures and found that self-enhancement of traits reflecting personal agency was associated with an independent self-construal, but self-enhancement of communal traits was associated with an interdependent self-construal. Similarly, Sedikides, Gaertner, and Toguchi (2003) conducted two studies comparing people from the United States to those in Japan and comparing participants with interdependent versus independent self-construals. They found that Americans and people with independent self-construals self-enhanced on individualistic attributes, whereas Japanese and people with interdependent self-construals self-enhanced on collectivistic attributes. Independents regarded individualistic attributes as personally important, whereas interdependents regarded collectivistic attributes as more important. Attribute importance mediated the self-enhancement effects, suggesting that regardless of cultural background people, self-enhance on personally important measures. The authors concluded that self-enhancement may be an universal human motive that assumes different forms, depending on culture and self-construal.

<div align="center">Toward A Neurobiology of Self-Enhancement</div>

The fact that self-enhancement can be central to motivational processes involving goal pursuit and restoration of self-worth following threat implies a centrality to motivation that may have biological underpinnings. The idea that self-enhancement is an intrinsic part of the goal setting/persistence/performance nexus has recently been given some intriguing credibility from research on the neural bases of attribution. In a neuroimaging study, Blackwood, Bental, ffytche, Simmons, Murray, and Howard (2003) had participants make attributions (i.e., was it something about the situation, something

about you, or something about your friend) for such hypothetical actions as "a friend brought you a present" or "a friend thinks you are dishonest." One goal of the research was to examine the neural bases of one indication of self-enhancement, namely, the self-serving attributional basis. This bias reflects the tendency to take credit for good actions and deny responsibility for bad ones. The results indicated that the self-serving bias was common and significant and that it was associated with enhanced activation in the bilateral caudate nucleus, a subregion of the striatum.

Primate studies suggest that motor, cognitive, and motivational systems interact with the striatum, fostering adjustment to changing environmental contingencies in the form of goal-directed behavior. That is, the striatum is a central structure involved in the motivational control of behavior, with the ventral striatum particularly involved in the processing of motivational information. In addition, there are connections between the striatum and the dopaminergic system, and both dorsal and ventral striatum neurons have been implicated in the prediction and detection of rewards. The striatum is regarded as critically involved in reinforcement learning. Striatal activation subserving the self-serving bias therefore may conceivably be understood as reflecting the fact that internal attributions for positive events and external attributions for negative events are rewarding. Moreover, recent research suggests that neurons in the caudate nucleus link the anticipation of expected reward with preparation for goal-directed eye movements, thus relating these processes to preparation for action. The self-serving bias, then, is subserved by regions that have been implicated in motivated behavior.

Blackwood and colleagues (2003) also suggested that the striatal activations implicated in the self-serving bias may indicate that the self-serving bias is a social

routine or habit that functions at the intuitive rather than the deliberative level, to simplify understanding of the complex social world. That is, this brain region is an "old" one and its activation is thought to reflect automatic rather than controlled processing. As such, the bias may be so automatic and so much a part of the pathways linking anticipated rewards to anticipatory action that, in order to attribute events in a non self-serving manner, an individual may need to employ deliberative and controlled processes to counteract it. While not definitive, such intriguing findings clearly suggest that self-enhancement can play an intrinsic and potentially automatic role in the processes that regulate goal-related performance.

<div align="center">Conclusions</div>

Integrating research on self-enhancement and self-affirmation reveals that a positive sense of self can be a vital resource for managing stress and for goal pursuit. The benefits of a strong sense of self are biological as well as psychological. Of particular significance is the fact that self-enhancement and self affirmation actually increase rather than decrease receptivity to personally-relevant negative information. Further research should continue to address the boundary conditions around these benefits, especially the cultural limitations. These caveats notwithstanding, evidence is emerging to suggest that self-enhancement can be an integral part of the neural pathways underlying motivation and performance.

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Authors' Notes