

Social evaluative threat across individual, relational, and collective selves

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Abstract

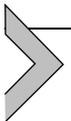
Social psychologists have long been interested in studying the effects of threat on physiology, affect, cognition, and behavior. However, researchers have traditionally examined threat at the level of individuals, relationships, or groups, rather than studying commonalities that exist across these levels. In this chapter, we propose that social evaluative threat – the real, imagined, or potential experience of being negatively evaluated – can occur at the level of the individual self, as a relational partner, or as a group member. Individual, relational, and collective selves are not always distinct entities, but are flexible and can overlap with one another. Across these levels, individuals differ in the degree to which they perceive and respond to social evaluative threat, depending on their psychological distance from the threat and expectations and motivation to detect threat. When people perceive a threat to any of these levels, they respond by engaging in behaviors reflecting approach or avoidance motivation. Overall, our model encourages researchers to assess key moderators of threat, examine threats at different levels of the self, and consider how experiences of threat at one level may impact other levels. By highlighting the flexibility of the self, researchers can test interventions that change threat cues in the environment, attenuate perceptions of threat, or help people cope with threat.

Cues in the environment convey valuable information that is relevant to survival, goal pursuit, and well-being. Cues can signal threats to one's health and safety (e.g., cues of illness, bodily harm), self-esteem (e.g., failure), sense of belonging (e.g., rejection, social exclusion), or relative group status (e.g., prejudice, discrimination) and can spur actions to cope with the threat. Hence, detection of cues that signal threat is likely to be fundamental, universal, and evolutionarily adaptive. While similarities exist between humans and other species in their responses to certain cues, humans differ from other species – and from one another – in their perceptions of threat based on their expectations and motivation to notice threat, the perceived availability of coping resources, and the specific self-aspects that are vulnerable to threat.

In this chapter, we present an integrative framework for understanding how humans detect and respond to cues of *social evaluative threat* – the real, imagined, or potential experience of being negatively evaluated as an individual, relationship partner, or group member.

We begin with the observation that perceiving threat is rooted in evolutionary concerns and reflects a fundamental, pervasive feature of human experience. Regardless of whether the threat damages one's individual, relational, or collective self, common physiological, affective, and cognitive indicators of threat are likely to emerge. Moreover, our research program suggests that key differences in people's expectations and motivations to detect threat, and psychological distance from the threat, may amplify or attenuate perceptions of and responses to threat.

To this end, we first summarize background research on threat, common indicators of threat, and how people respond to and cope with threat by engaging in behaviors reflecting approach or avoidance motivation. Next, we discuss research – including findings from our labs – examining the influence of key moderators that involve the self (e.g., self-esteem, contingencies of self-worth, attachment styles, rejection sensitivity, social group membership) through the broader lens of expectations and motivations to detect threat in the environment. By reviewing this work, we highlight the flexibility of the self and provide an overarching framework to account for past findings in the literature. We then compare and contrast our model with other models of threat, discuss three types of interventions at critical points in the model, and conclude with future research directions.



1. Threat perception in social psychology

Although there is a long history of studying cue perception in psychology, researchers have traditionally investigated this topic at specific levels of analysis. For example, social psychologists often acquire expertise in a subfield, such as social cognition, self and identity, close relationships, or intergroup processes. While adding depth of knowledge to particular areas is beneficial to advancing the field, it is equally advantageous to identify commonalities across research ideas and findings at a broader, conceptual level. Indeed, [Lewin \(1951, p. 169\)](#) promulgated the notion that “there is nothing as practical as a good theory,” yet social psychologists have historically focused on amassing a large body of empirical evidence in support of mid-level theories, with relatively less training or emphasis on generating broad theories of human behavior ([Gray, 2017](#); [Kruglanski, 2001](#); [Proulx & Morey, 2021](#)). Without overarching theoretical frameworks, researchers run the risk of devising new names for old concepts,

fragmenting the field, and having less visibility or influence in the general cultural dialogue (Kruglanski, 2001). By proposing general theories, we not only deepen understanding of human behavior, but can contribute to public discussions of contemporary social issues, with implications for interventions targeting individuals, dyads, and groups.

A core tenet in social psychology is that people's subjective perceptions shape their behavior. While the era of behaviorism promoted the notion of stimulus-dependent, mechanistic responses to cues in the environment, the cognitive revolution ushered in the idea that people's construals of situations guide behavior. Notably, Lewin's (1936) field theory proposed that a person's life space – aspects of the person and the environment – predicts social behavior. With the formula " $B = f(P, E)$ " Lewin posited that a person's behavior (B) is a function (f) of the person (P) (i.e., their history, personality, motivation) and the environment (E) (i.e., one's physical and social surroundings), with an emphasis on the social features of environments.

Perceptions matter for understanding social behavior and are driven by both objective features and mental processes that shape idiosyncratic construals of the environment. As William James (1890) noted, "...part of what we perceive comes through our senses from the object before us, another part (and it may be the larger part) always comes out of our mind" (p. 747). Indeed, "New Look" researchers in the 1950s suggested that perceptions are constructed not only by sensory, bottom-up processes, but also by top-down processes in which mental factors shape attention and perception (Bruner & Minturn, 1955). For example, an early study found that children from poorer backgrounds overestimated the size of larger coins, presumably because they valued money more compared to children from affluent backgrounds (Bruner & Goodman, 1947). These and other findings suggest that perception is phenomenological and results from both sensory inputs and activated cognitions (Balcetis & Cole, 2013).

1.1 A model of social evaluative threat

Much of human motivation and behavior can be viewed through the lens of whether individuals perceive cues in the environment to be threatening or not. One type of threat that is especially prevalent and salient in people's everyday lives is *social evaluative threat*, which occurs when a person's self could be judged negatively by others (Dickerson & Kemeny, 2004). We expand upon this definition by defining social evaluative threat as the *real, imagined, or potential experience of being negatively evaluated as an individual, relationship partner, or group member*. A key component of this definition is the *experience* of being

negatively evaluated, which underscores the importance of individuals' perceptions, thoughts, and feelings, rather than the objective occurrence of negative evaluation.

We emphasize this type of threat in our review for three reasons. First, social evaluation is a common human experience that is consequential and pervasive. Social evaluations occur rapidly and automatically (Ambady & Rosenthal, 1992; Winter & Uleman, 1984) and guide important outcomes, such as receiving desired resources, or being included or excluded from relationships and groups (Schlenker, 1980). Second, as social creatures, humans are strongly motivated to obtain favorable evaluations from others (Baumeister & Leary, 1995; Leary & Baumeister, 2000), which increases the likelihood of experiencing threat when faced with the real or imagined possibility of negative social evaluation. Third, as will be evident throughout our review, many types of threats examined in the literature can be subsumed under social evaluative threat, permitting an integration of disparate areas of research.

People define and evaluate themselves as individuals, relationship partners, and members of social groups (see Brewer & Gardner, 1996; Sedikides, Gaertner, Luke, O'Mara, & Gebauer, 2013; for reviews), and a given threat cue may be relevant to one or more of these self-definitions. As shown in Fig. 1, cues that elicit social evaluative threat may call into question one's worth as an individual, a relationship partner, and/or a member of a particular group. At times, these levels of self may overlap with other levels and/or compensate for other levels. For example, someone who views themselves as a "mom" may think about their individual self (e.g., being a kind, caring, responsible person), their relational self (e.g., being a good mother to one's children), or collective self (e.g., identifying with a mom group).

Importantly, these views of self may be cognitively connected. For example, clustering of self-relevant information in free recall suggests that group memberships (e.g., belonging to the category *mom*) and related attributes that are considered aspects of individual self-definition (e.g., kindness) are associated in memory (Reid & Deaux, 1996). Accordingly, individuals may experience a threat to one level of self, such as receiving feedback that they are an unkind or irresponsible person. At times, the threat could also impact other levels of the self, such as raising doubts about one's perceived relational value as a mother, or threatening one's connection to an ingroup, such as being shunned or excluded by other moms. Social evaluative threats can also involve subtle cues, such as noticing disapproving looks from others while trying to control one's child throwing a tantrum at the store, or explicit cues conveying threat, such as being told that one is doing a poor job disciplining their child.

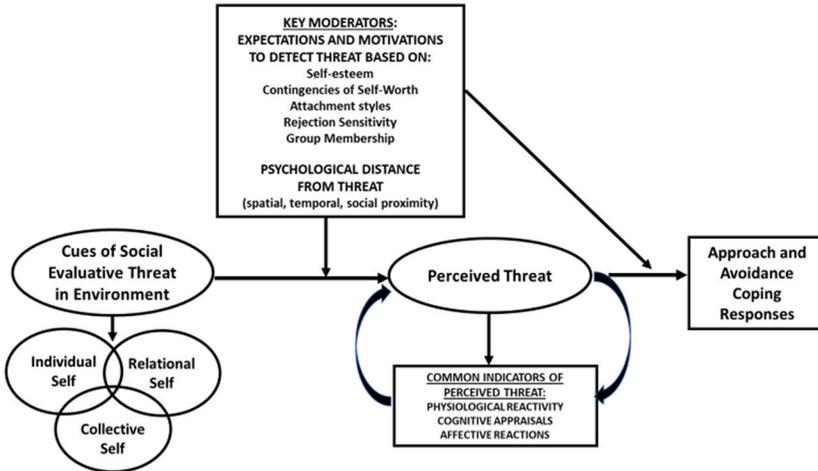


Fig. 1 Conceptual model of how cues of social evaluative threat across individual, relational, and collective levels of the self shape perceptions of threat, indicators of threat, and coping responses. Expectations and motivations to detect threat and psychological distance from threat are thought to influence perceptions of threat and subsequent coping.

When individuals perceive cues of social evaluative threat in the environment, they are likely to show a common set of physiological markers, cognitive appraisals, and emotional reactions that motivate responses or coping strategies that seek to remove the threatening stimulus (i.e., behaviors that forestall a negative social evaluation), attenuate the subjective importance of the threat, or undo the negative effects of threat. Importantly, perceptions of threat may be amplified depending on situational factors (e.g., perceived proximity between oneself and the threat) and differences in expectations and motivations to detect threats to the individual, relational, or collective self (see Key Moderators in Fig. 1). Furthermore, given the potential overlap between different levels of the self, interventions that elicit psychological safety at one level might alleviate or counteract threats at another level.

2. Cues of social evaluative threat in the environment

Humans evolved to detect cues of threat in the immediate environment (Neuberg, Kenrick, & Schaller, 2011). Responses to certain cues are thought to be evolutionarily determined and rely on prepared learning

in which the presence of a threatening stimulus automatically and unconsciously activates fear and avoidance reactions in the brain (Öhman & Mineka, 2001). Organisms that noticed and responded to threatening cues in their environment were more likely to survive and reproduce than those who did not quickly detect such threats. Along these lines, Baumeister, Bratslavsky, Finkenauer, and Vohs (2001) noted that, “*Survival requires urgent attention to possible bad outcomes, but it is less urgent with regard to good ones. Hence, it would be adaptive to be psychologically designed to respond to bad more strongly than good.*”

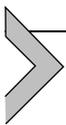
Although most species are able to notice cues of threat for survival and reproduction, humans are unique in that they attend to real or imagined *social evaluative* cues. That is, humans evolved to be attentive to cues that have the potential to threaten their social safety (Baumeister & Leary, 1995; Jaremka, Nadzan, & Sunami, in press; Pickett & Gardner, 2005). For example, to develop and maintain relationships, individuals look to cues in their social environment to monitor others’ reactions to them and are sensitive to indicators of interpersonal rejection and exclusion (Kirkpatrick & Ellis, 2004; Leary & Baumeister, 2000; Williams & Zadro, 2001). In fact, both infants and adults are quicker to notice angry versus happy faces, suggesting that humans are attentive to cues of threat in the social environment (Lundqvist & Ohman, 2005; Öhman, Lundqvist, & Esteves, 2001).

While previous research focused on social evaluative threat in general, we distinguish between social evaluative threat at the individual, relational, and collective levels of the self. This approach is aligned with other researchers who have conceptualized the self in terms of these three self-representations (Brewer & Gardner, 1996; Kashima et al., 1995; Sedikides & Brewer, 2001; Sedikides et al., 2013). For example, Sedikides et al. (2013) tripartite model elaborates upon these different levels of self, and Brewer and Gardner (1996, p. 83) noted in their seminal paper on this topic that “...*individuals seek to define themselves in terms of their immersion in relationships with others and with larger collectives and derive much of their self-evaluation from such social identities.*” Building upon these ideas, our model suggests that while people can experience threats to specific aspects of the self, these selves can overlap at times and be activated simultaneously.

At the individual level, people can receive feedback about their personal traits that cast doubt on their competence or abilities in the eyes of real or imagined others. For example, research on self-esteem and contingencies of self-worth often examines threats to the individual self, such as receiving negative feedback about one’s academic competence, creativity, or financial status (e.g., Brockner, Derr, & Laing, 1987; Brown & Dutton, 1995;

Kernis, Brockner, & Frankel, 1989; Park & Crocker, 2005; Park, Crocker, & Kiefer, 2007; Park, Ward, & Naragon-Gainey, 2017; Vohs & Heatherton, 2001). At the relational level, people can experience threats to their social relationships or perceived relational value, such as being rejected or experiencing relationship conflict in which they feel negatively evaluated by their romantic partner (e.g., Campbell, Simpson, Boldry, & Kashy, 2005; Holmes & Murray, 1996; Leary, Tambor, Terdal, & Downs, 1995; Lemay & Clark, 2008; Lemay, Clark, & Feeney, 2007; Lemay, Overall, & Clark, 2012; MacDonald & Leary, 2005; Overall, Girme, Lemay, & Hammond, 2014). At the collective level, people can experience social evaluative threats that relate to group membership, such as devaluation by ingroup members – leading individuals to experience a loss of group status (Marr & Thau, 2014) or the possibility of being rejected from a group (Jetten, Branscombe, & Spears, 2002). People may also experience devaluation by outgroup members based on belonging to a social group, such as being the target of negative stereotypes, prejudice, or discrimination (e.g., Canning, LaCosse, Kroeper, & Murphy, 2020; Cheryan, Plaut, Davies, & Steele, 2009; Crocker, Major, & Steele, 1998; Good, Rattan, & Dweck, 2012; Muenks et al., 2020; Murray, Derrick, Leder, & Holmes, 2008; Spencer, Steele, & Quinn, 1999).

Although variability exists in how differing levels of self-representation are defined, each level of self plays an important role in well-being. For example, having a strong individual self (e.g., high self-esteem), relational self (e.g., high relational self-esteem rooted in satisfying dyadic relationships), and collective self (e.g., high collective self-esteem from being part of a valued group) are uniquely related to increased physical and psychological well-being (Chen et al., 2006; Hardie, Kashima, & Pridmore, 2005; Haslam, Jetten, Postmes, & Haslam, 2009; Taylor, Lerner, Sherman, Sage, & McDowell, 2003). Whereas past work often focused on one level of self and how threats to the self affected particular outcomes, we suggest that the self is a flexible construct, such that social evaluative threat may impact more than one level of the self, which then influences people's responses and ways of coping with threat.



3. Common indicators of perceived threat

According to our model, when individuals perceive cues in the environment as threatening, they exhibit a common set of physiological, affective, and cognitive reactions that serve as indicators of social evaluative threat.

3.1 Physiological indicators

Individuals are likely to exhibit distinct physiological patterns when they perceive social evaluative threat cues in the environment. The fight-or-flight response – also known as hyperarousal or the acute stress response – refers to a heightened physiological state in which an organism reacts to a perceived threat with increased activation of the sympathetic nervous system and release of hormones (e.g., cortisol, estrogen, testosterone) and neurotransmitters (e.g., dopamine, serotonin), which prepare the organism to attack or flee (Cannon, 1915). Heightened vigilance for threat cues is considered to be “a functional adaptive response” (Riccio, Cole, & Balcetis, 2013, p. 409) as this evolved perceptual strategy allowed humans to prepare for the possibility of threat and secure safety and resources.

A large body of research has shown that social evaluative threat is associated with heightened physiological reactivity (see Dickerson, 2008; for a review). For example, a meta-analysis of over 200 studies found that participants showed heightened cortisol levels when they completed tasks involving social evaluative threat (e.g., having an audience present while completing an evaluative task, such as giving a speech) versus when they did not (Dickerson & Kemeny, 2004). Even when tasks are difficult, stressful, and demanding, if there is no component of social evaluative threat, people show lower cortisol production than when the task involves the possibility of such threat (Gruenewald, Kemeny, Aziz, & Fahey, 2004). The threat responses described above are akin to hypervigilance in which one feels like there is much to lose or that loss is likely (Seery, Weisbuch, & Blascovich, 2009).

According to the biopsychosocial model of challenge and threat (Blascovich & Mendes, 2000; Blascovich & Tomaka, 1996; Seery, 2013), individuals show distinct patterns of physiological reactivity when striving to achieve important goals in motivated performance situations that involve tangible or intangible rewards, such as money or pride. When people experience a stressor, they appraise the demands of the situation and task relative to their personal resources. When people perceive their personal resources as being equal to or greater than the demands of the task, they experience challenge in which they feel capable and confident to overcome the threat or stressor.

In contrast, when individuals perceive that situational demands exceed personal resources, they experience threat. Threat appraisals are accompanied by activation of the hypothalamic-pituitary-adrenal (HPA) axis,

while challenge is reflected in activation of the sympathetic adrenal-medullary axis (Seery, 2011, 2013). In addition to higher HPA activity, a threat response is characterized by increased total peripheral resistance, which restricts blood flow in the arteries leading to lower cardiac output (Seery, 2013). Threat responses are also associated with decrements in performance (Seery & Quinton, 2016) and poorer cardiovascular health when experienced repeatedly (Blascovich, 2008; Major, Mendes, & Dovidio, 2013). Overall, these findings suggest that when individuals perceive threats in the environment, especially when they involve a social evaluative component in which they lack sufficient personal resources to meet the demands of a situation, they show common physiological markers of stress reactivity.

Indicators of threat at the physiological level can be observed in dyads, as well. For example, a study of mother–infant pairs found that mothers who first experienced a social evaluative threat – by giving a speech to evaluators who conveyed negative nonverbal feedback (vs. positive nonverbal feedback or completing this task alone) – had infants who showed greater physiological covariation with their mothers. That is, infants who interacted with mothers who initially experienced social evaluative threat were more likely to “catch” their mothers’ physiological stress reactivity, even though infants were never directly exposed to the threat (Waters, West, & Mendes, 2014). In another study, married couples who engaged in a conflict conversation showed greater physiological linkage, which predicted lower marital satisfaction among both partners (Levenson & Gottman, 1985).

Such findings suggest that situations of social evaluative threat – and indicators of threat at a physiological level – can become “contagious” and spread to other people in dyadic relationships (West, & Mendes, *in press*). Other studies show that when individuals engage in a relationship conflict discussion with their romantic partner, not only do they show physiological, affective, and cognitive reactions at the individual level, but the conflict can impact their partners’ reactions as well, given that actors and partners are interdependent and mutually influence each other psychologically, behaviorally (Cook & Kenny, 2005; Kelley & Thibaut, 1978), and physiologically (Shrout, 2021; Thorson, West, & Mendes, 2018).

Furthermore, individuals may show physiological reactions in response to perceiving social evaluative threat in intergroup interactions and settings (Amodio, Harmon-Jones, & Devine, 2003; Shelton & Richeson, 2006; Stephan & Stephan, 1985), which can manifest in particular patterns of

autonomic, endocrine, and neural activity, and immune functioning (Amodio, 2009; LeDoux, 2000). For example, Lepore et al. (2006) examined cardiovascular responses of Black and White women while they talked about a hypothetical threatening experience based on their race (being accused of shoplifting), a nonracial stressor (airport delays), or a control condition (giving a campus tour). Compared to White women, Black women showed higher diastolic blood pressure reactivity and lower heart rate recovery when discussing the racial stressor versus the nonracial stressor. In another study, African Americans who reported greater perceived ethnic discrimination – in which they felt treated poorly based on their racial group membership – showed lower heart rate variability, a marker of cardiac health (Hill et al., 2017). Overall, these and other findings suggest that common physiological indicators can be observed in response to social evaluative threats at multiple levels of the self.

3.2 Cognitive appraisals and emotions

In addition to physiological markers, people's cognitive appraisals and emotions often serve as indicators of social evaluative threat. According to Lazarus's (1966, 1991) cognitive-mediational theory of emotion, individuals differ in their reactions to stimuli based on appraisals of cues in the environment. Appraisals are interpretations and evaluations of events, which involve primary appraisals of the meaning or significance of an event and secondary appraisals reflecting one's ability to cope with the event. In social evaluative threat contexts, individuals initially appraise the degree to which cues in the environment could potentially harm or threaten their well-being due to being negatively evaluated by others.

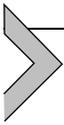
Basic emotions, such as fear, reflect appraisals of the environment as threatening or harmful to one's safety or well-being. As Ekman (1999, p. 46) pointed out, "...the primary function of emotion is to mobilize the organism to deal quickly with important interpersonal encounters, prepared to do so by what types of activity have been adaptive in the past," with the past referring to humans' ancestral past, and what has been adaptive in one's personal history. Other researchers suggest that emotions are adaptive to survival because they involve appraisals relevant to one's goals, needs, and values (Ellsworth & Scherer, 2003) and elicit action tendencies to achieve desired end states (Frijda, 1986). For instance, widening of the eyes – an indicator of fear – may be adaptive by enabling the organism to better scan the visual field and alert others to threats in the environment (Öhman & Mineka, 2001; Shariff & Tracy, 2011).

Because humans possess both self-awareness and self-representations, they may also experience heightened self-conscious emotions when they perceive that an aspect of themselves is, or has the potential to be, negatively judged by others. Whereas basic emotions, such as fear, are presumed to facilitate basic survival and reproductive goals, self-conscious emotions increase the likelihood of achieving social goals, such as protecting and enhancing status or preventing rejection from groups (Keltner & Buswell, 1997; Tracy & Robins, 2004). For example, the body positions associated with embarrassment and shame reflect a desire to reduce or hide the body from the possibility of attack or threat, which is thought to signal lowered social status and increased desire to appease (Shariff & Tracy, 2011; Tracy & Matsumoto, 2008).

When people perceive threats to the self, they often feel negative self-conscious emotions, such as embarrassment, humiliation, guilt, and shame (Tracy, Robins, & Tangney, 2007). They also experience lowered self-esteem, belonging, and increased evaluative concerns when they perceive threats to their personal attributes, perceived relational value, or group value (Canning et al., 2020; Cheryan et al., 2009; Good et al., 2012; Leary & Baumeister, 2000; Leary et al., 1995; Muenks et al., 2020; Murphy, Steele, & Gross, 2007). Indeed, many indicators of social evaluative threat can be observed in response to the same threat resulting in hurt feelings, anxiety, or fear (MacDonald & Leary, 2005; Twenge, Baumeister, Tice, & Stucke, 2001).

People also report feelings of anxiety, stress, discomfort, or fear when they imagine (or actually interact with) members of social groups other than their own (Amodio, 2009; Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Crocker et al., 1998; Dovidio, Gaertner, Kawakami, & Hodson, 2002; Plant, 2004; Shelton & Richeson, 2005, 2006; Stephan & Stephan, 1985; Vorauer, Hunter, Main, & Roy, 2000). For example, people feel heightened intergroup anxiety when they appraise an outgroup as potentially causing harm, exploiting their ingroup, or when the outgroup is perceived as threatening the ingroup's values (Stephan & Stephan, 1985; Stephan, Ybarra, & Morrison, 2009). Research on group-level emotions further suggests that perceived threats to one's group image increases group-based shame, whereas group-based guilt is elicited when group members feel responsible for the wrongdoing of ingroup members and seek to make amends (Lickel, Steele, & Schmader, 2011). As another example, individuals who anticipate social evaluative threat in intergroup interactions not only feel more anxious (Stephan, 2014), but are also fearful of being rejected by outgroup members based on their racial group membership (Shelton & Richeson, 2005).

In sum, when people perceive social evaluative threat, they are likely to show particular patterns of physiological, cognitive, and affective indicators of threat. These markers not only appear at the individual level, but can be manifested at a relational level – in which both actors and partners show common markers of threat, and at the group level – in which people show aggregated markers of physiological reactivity, cognitive appraisals, and emotional reactions based on collective social identities. The more levels of self the threat permeates, the more people may be impacted by the threat and show amplification of these reactions. Indicators of perceived threat, in turn, are likely to shape people's motivations and coping responses to threat.



4. Motivation and coping in response to threat

The desire to approach or avoid a stimulus is thought to reflect a fundamental adaptive decision that all living organisms have to face (Tooby & Cosmides, 1990). Gray (1978, 1990) posited an appetitive motivational system (i.e., Behavioral Activation System or BAS), which promotes actions in response to cues of reward, and an aversive motivational system (i.e., Behavioral Inhibition System or BIS), which inhibits actions in response to cues of punishment or novelty. Similar to the fight-or-flight response, perceiving threats in the environment may elicit approach or avoidance motivation (Park, 2010).

Perceptions of the environment as threatening versus safe afford opportunities to avoid potential threats or seek rewards (Allport, 1989; Riccio et al., 2013). Indeed, studies suggest that people literally “see” the world in ways that help them achieve their goals (Balcetis & Cole, 2013; Cole & Balcetis, 2021). In contrast, the possibility of threat or harm often motivates individuals to avoid or escape the harm. Along these lines, research shows that adults – as well as infants and other species – respond to physically threatening objects with defensive behaviors (King, Dykeman, Redgrave, & Dean, 1992). Although social evaluative threat sometimes elicits defensiveness, there are additional ways of coping. In particular, people may adopt either approach or avoidance motivational orientations and problem- or emotion-focused coping strategies to deal with social evaluative threat.

People's appraisals of the situation, including whether or not they think they can effectively cope with the threat, is likely to predict which system is activated in a particular context. If individuals think they can effectively mitigate the threat, such as by removing the threatening stimulus or

reappraising the threat in a way that attenuates the subjective importance of the threat, they are likely to show approach motivation and behavior. In cases of social evaluative threat, this approach motivation may often take the form of approaching positive social evaluation (e.g., seeking social inclusion or positive regard). For instance, following a social rejection experience, individuals show heightened attention and monitoring of their environment for social cues and opportunities for inclusion to restore belongingness (Gardner, Pickett, & Knowles, 2005). Furthermore, when threats to social safety are heightened, people sometimes seek to form new interpersonal connections (Maner, DeWall, Baumeister, & Schaller, 2007), socially compensate (Williams & Sommer, 1997), conform more (Williams, Cheung, & Choi, 2000), and show heightened sensitivity to information about their social identities and group memberships (Knowles & Gardner, 2008). At the relational level, these approach tendencies may manifest as drawing closer to one's partner and affirming the relationship following social evaluative threat (Murray, Holmes, & Collins, 2006).

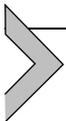
On the other hand, if individuals doubt their ability to deflect the threat or to minimize its impact, they may become motivated to avoid further social devaluation and show avoidance behavior. Fear of rejection predicts a variety of avoidance social goals, such as trying to avoid conflict, disagreements, and harm to relationships (Elliot et al., 2006). In the relational domain, those who doubt their perceived relational value and regard from others respond to social evaluative threats in romantic relationships by turning away from their partner and distancing themselves from the relationship (Murray, Holmes, MacDonald, & Ellsworth, 1998).

Adoption of approach versus avoidance goals may also depend on social group membership. Humans categorize the social world in terms of ingroups and outgroups, presumably because doing so maximizes cooperation within one's own group, which is adaptive for survival and well-being, compared to providing aid to outgroup members who may not necessarily reciprocate (Brewer, 1997, 1999). Consistent with this idea, studies find that individuals show more approach-like motor tendencies (i.e., arm movements) toward ingroup members and avoidance-like motor tendencies toward outgroup members (Paladino & Castelli, 2008). Interracial anxiety among both Black and White individuals, which may be prompted by threat cues, also predicts greater desire to avoid interacting with outgroup members (Plant, 2004).

In addition to approach and avoidance responses to threat, coping can be classified in terms of emotion-focused coping or problem-solving

coping strategies (Carver, Scheier, & Weintraub, 1989; Folkman & Lazarus, 1988). This framework can be applied to understanding how people respond to social evaluative threat. When people perceive a threat to their individual, relational, or collective self, they may attempt to reduce or manage the emotional distress caused by the threat, or they may try to directly address or alter the source of stress. For example, people contending with the stigma of obesity may attribute negative social evaluative events, such as failing to obtain a promotion at work, to others' prejudice against people living with obesity. This emotion-focused coping strategy may protect their self-perceived competence by providing an external attribution for the setback (Crocker & Major, 1989; Puhl & Brownell, 2003). Alternatively, a person may cope with the stigma of obesity with problem-focused strategies, such as attempting to compensate for the stigma by behaving in more likable or helpful ways, confronting prejudiced individuals, or engaging in social activism to change the stigmatized status of obesity (Puhl & Brownell, 2003).

In sum, when people perceive social evaluative threat they may respond with either approach or avoidance motivation and with emotion or problem-focused coping strategies. How individuals respond to threat, however, is likely to depend on how close versus distant the threat is perceived to be and people's underlying expectations and motivation to detect threat.



5. Moderators of social evaluative threat

When people notice ambient cues, they are likely to process sensory input through existing mental schemas to make sense of information in an efficient way (Bargh, 1999). Specifically, perceptions of threat may be heightened based on situational features and differences in expectations and motivations to detect threat in the environment. Individuals then determine which coping strategy is most effective in dealing with the threat, which may vary depending on situational factors that magnify perceptions of threat and constrain potential responses to threat, as well as individual differences in expectations and motivations to respond to threat based on perceived personal, relational, or group-based resources and prior experiences.

5.1 Situational moderators of threat

Situational factors may impact the perceived likelihood or harmfulness of negative social evaluation. In particular, situational factors may influence

the psychological distance of the threat cue, which can include spatial, temporal, or social proximity. According to construal level theory, humans form mental construals of objects and events that vary in their psychological distance (e.g., time, space, social distance, probability, hypotheticality) (Fujita, Henderson, Eng, Trope, & Liberman, 2006; Trope & Liberman, 2003; Trope, Liberman, & Wakslak, 2007). When people construe objects and events as psychologically near, they view them in terms of concrete, specific features; when people construe objects and events as psychologically distant, they view them in terms of higher-level, schematic features.

People generally react more strongly to events that are spatially and temporally closer (Trope & Liberman, 2010). For example, a stranger in a dark alleyway may cue immediate danger and be a more salient cue when evaluating an environment, whereas the poor air quality of a classroom may be perceived as less of an immediate threat because danger might go unnoticed until a long period of repeated exposure. Research supports this idea. For instance, Latané, Liu, Nowak, Bonevento, and Zheng (1995) found that social influence – operationalized as frequency of memorable social interactions with others – was stronger as physical distance decreased, and diminished in influence as physical distance increased, supporting the idea that cues in the environment are more psychologically impactful when they are near versus far. Thus, subjective perceptions of social evaluative threat are likely to be magnified when the threat cue is spatially near (vs. far), real (vs. hypothetical), probable (vs. improbable), and in the here-and-now (vs. distant future).

Consistent with this prediction, research on the self-evaluation maintenance model suggests that individuals feel more threatened when they are outperformed by someone who is psychologically near versus distant, and that psychological distance of the threat cue may moderate people's coping strategies (Campbell & Tesser, 1985; Tesser, 1988). For example, Tesser and Smith (1980) conducted a study in which participants worked on a task that was framed as either self-relevant or not with a friend or stranger. When the task was framed as highly relevant to one's self-definition, participants gave harder clues on the task to friends than to strangers, suggesting that they felt more threatened when there was a possibility that a close other (i.e., a friend) might outperform them relative to a stranger, and therefore engaged in problem-focused coping to reduce the potential for experiencing threat. Along similar lines, a series of experiments from our lab found that when men were outperformed by a woman on a math test in a psychologically near context (e.g., a spatially near, real-life, face-to-face

interaction), men showed greater indication of threat, as reflected by lower self-appraisals of masculinity. Men, in turn, responded to the perceived threat by distancing themselves more from the woman – by showing less attraction toward her – compared to when they were psychologically distant from the woman in a hypothetical scenario, or in a spatially distant interaction (Park, Young, & Eastwick, 2015).

Such findings suggest that cues of social evaluative threat that are construed as proximal – in space, time, probability, or social distance – should have a greater impact on perception, motivation, and coping responses to threat than cues that are construed as distant. It is also noteworthy that the relationship between experienced threat and proximity may be bi-directional, with threat impacting perceptions of proximity. For instance, objects that are perceived as threatening also appear more salient in the environment and are misperceived as being visually closer than objects that are affectively neutral or negative (Cole, Balcetis, & Dunning, 2013). Thus, while our model suggests that psychological distance should amplify perceptions of social evaluative threat cues, especially if the cue threatens multiple levels of the self, it could also be the case that the real or anticipated presence of a threatening cue in the environment could bias judgments of the perceived proximity of the cue, as well.

5.2 Moderators of threats to individual, relational, and collective selves

In addition to psychological distance, perceptions and responses to threat cues are likely to be shaped by people's goals, expectancies, and preferences (Balcetis & Cole, 2013; Broadbent, 1977; Dunning & Balcetis, 2013; Riccio et al., 2013). Sociocultural learning and life experiences contribute to people's expectations and schemas about the self, other people, and the world (Riccio et al., 2013), and to individual differences in expectations and motivation to detect threats in the environment. Indeed, a large body of research shows that aspects of the self – at the individual, relational, and collective level – heighten people's vulnerability to expecting and perceiving social evaluative threats.

As shown in Fig. 1, key moderators can either amplify or attenuate the link between exposure to threatening cues in the environment and perceptions of threat, as well as the link between perceived threat and coping responses. When people encounter threats to the individual or relational self, such as receiving negative feedback about their competence or interpersonal qualities, differences in self-esteem,

contingencies of self-worth, attachment styles, and rejection sensitivity may exacerbate the tendency to notice and respond to cues of social evaluative threat.

5.2.1 Self-esteem

Individuals who have a bias toward processing negative information perceive the world in ways that reinforce negative beliefs about themselves and others (Balcetis & Cole, 2013). Notably, people with low self-esteem feel uncertain of who they are, doubt their abilities and inclusion with others, and are acutely aware of signs of potential rejection from others, a form of social evaluative threat (see Baumeister, 1993; for a review; Baumgardner, 1990; Blaine & Crocker, 1993; Campbell & Lavalley, 1993; Leary & Baumeister, 2000). Indeed, people with low self-esteem possess if-then contingencies of interpersonal acceptance (i.e., beliefs that interpersonal acceptance is contingent on meeting particular standards) and automatically associate failure with rejection (Baldwin & Sinclair, 1996). They show emotional instability and malleability in their self-concept in response to daily events (Campbell, Chew, & Scratchley, 1991), accept negative feedback as an accurate reflection of their abilities (Kernis et al., 1989), feel ashamed and humiliated following failure, and overgeneralize the implications of negative feedback by feeling bad about themselves on a global level (Brown & Dutton, 1995; Dutton & Brown, 1997).

Given that people with low self-esteem are highly attuned to the possibility of social rejection, which would further diminish their sense of worth and value, they tend to override their goals for connection to pursue self-protection goals instead (Murray et al., 2006). In contrast, people with high self-esteem have positive social expectations and thus override their self-protection goals to pursue connection goals with their partner when they experience threat. Along these lines, a study found that high self-esteem participants' willingness to join a novel social group did not differ based on certainty of acceptance from the group, suggesting that they were less concerned about social risk. However, low self-esteem participants were willing to join a group only when acceptance from the group was certain, suggesting they have a lower threshold for interpersonal risk and are motivated to detect and avoid the possibility of further painful rejection experiences (Anthony, Wood, & Holmes, 2007).

Other studies examining perceptions of acceptance from a new, opposite-sex interaction partner found that people with low self-esteem demonstrated a motivated perceptual bias, such that they under-detected

acceptance cues from their interaction partner (Cameron, Stinson, Gaetz, & Balchen, 2010). Specifically, when interacting with an attractive potential partner in which rejection was possible, low self-esteem participants self-protected and overlooked signs of acceptance (e.g., smiling, agreement, verbal interest, eye contact) from their partner, whereas high self-esteem individuals overestimated acceptance cues from their partner. Low self-esteem individuals even underestimate positive regard from their romantic partners, whereas people with high self-esteem accurately understand how much their partners appreciate and admire them (Murray, Holmes, & Griffin, 2000).

The consequences of self-esteem may reflect the effects of egocentrism; people have difficulty taking others' perspectives and instead, believe that others see them in a manner that is similar to how they see themselves (Sedikides, Alicke, & Skowronski, 2021). As a result, low self-esteem individuals believe they are evaluated more negatively compared to high self-esteem individuals (Murray et al., 2000). Thus, relative to people with high self-esteem, those with low self-esteem may more readily notice social evaluative threats in the environment. Once threat is detected, the differing motivations held by those with low and high self-esteem individuals may result in divergent responses. For example, when people with low self-esteem experience social evaluative threat, they withdraw from others to avoid the possibility of further threat and pursue indirect ways of restoring their self-esteem to cope with the threat (Brown, Collins, & Schmidt, 1988; Park, 2010). For example, in a series of studies by Park and Maner (2009), people with low self-esteem who highly based their self-worth on their physical appearance showed greater desire to avoid social contact with others following an appearance-based threat, and preferred a less socially risky way of responding to threat, by wanting to boost their physical attractiveness to others. In contrast, high self-esteem people reported greater desire to restore their social connections directly following a threat to their contingency of self-worth, suggesting that they adopt more approach-oriented strategies following threat.

In sum, converging evidence demonstrates that individuals perceive and respond to cues in the environment based on how they feel about themselves on a global level. Specifically, people with high versus low self-esteem differ in their expectations and motivation to detect social evaluative threat cues, which affect the extent to which they perceive threat in a given environment. Furthermore, differences in people's underlying concerns about further loss of self-esteem may shape how

people cope with the threat. Whereas people with high self-esteem already feel positively regarded and included by others – and are therefore less affected by social evaluative threat – people with low self-esteem feel socially devalued and seek to avoid further threat by becoming more cautious and withdrawing from potentially threatening situations.

5.2.2 Contingencies of self-worth

In addition to self-esteem, contingencies of self-worth (CSWs) may bias perceptions of social evaluative threat cues in the environment. CSWs reflect the degree to which individuals base their self-worth in domains that they believe they must succeed in to feel like a person of worth and value (Crocker & Wolfe, 2001). Individuals differ in their CSWs, from wanting others' approval, to being academically competent, financially successful, or following one's moral and ethical standards (Crocker & Park, 2012; Crocker, Luhtanen, & Sommers, 2004; Knee, Canevello, Bush, & Cook, 2008; Park et al., 2007; Park, Sanchez, & Brynildsen, 2011, 2017). CSWs are thought to develop in childhood through events that signal safety or threat. Acute or repeated experiences – of being rewarded or punished for enacting behaviors or achieving desired outcomes – reinforce the idea that one must act in certain ways to feel safe and secure (Crocker & Park, 2004). In adulthood, individuals with CSWs are motivated to prove that they possess desired qualities in domains of contingency, which is associated with negative outcomes for themselves and their relationships (Park, Crocker, & Vohs, 2006; Ward, Park, Naragon-Gainey, Whillans, & Jung, 2020; Ward et al., 2021).

When individuals have contingent self-worth, they are attentive to cues in the environment that are relevant to their CSWs and strive to maintain and enhance their feelings of self-worth. Consistent with this idea, studies from our lab show that people who base their self-worth on financial success are more vigilant to their financial standing; they make more financially-based social comparisons with others, experience more financial hassles, and use more negative emotion-laden words when describing current financial stressors than those with lower financially contingent self-worth (Park et al., 2017). These individuals also report experiencing more work-family conflict, which is related to greater job and parental disengagement and burnout (Park, Lin, Chang, O'Brien, & Ward, 2022; Park, Ward, Naragon-Gainey, Fujita, & Koefler, 2022). People with financially contingent self-worth are also more likely to experience motivational conflict between the desire to spend versus not spend their money, which

predicts greater compulsive buying and emotional distress and impairment from engaging in this maladaptive behavior (Park, Lin, et al., 2022; Park, Ward, et al., 2022). Further, when people receive negative evaluative feedback indicating that their discretionary income is lower (vs. higher) than others, they feel worse off, which is related to stronger belief in the expected benefits of financial success, which predicts basing one's self-worth more in this domain, and experiencing less happiness and satisfaction with life (Park et al., 2020).

A key feature of CSW theory is that people with contingent self-worth react more strongly to cues of social evaluative threat compared to those who do not highly base their self-worth in a domain of contingency. For example, those who strongly base their self-worth on others' approval and receive negative feedback about their likeability show lower state self-esteem and more negative affect than those who do not base their self-esteem in this domain or do not receive negative interpersonal feedback (Park & Crocker, 2007). In another study, college seniors who highly based their self-worth on academic competence showed greater fluctuations in their state self-esteem and mood upon receiving news of rejection versus acceptance from graduate schools (Crocker, Sommers, & Luhtanen, 2002). Similarly, college students who based their self-worth on academics showed larger drops in their state self-esteem and mood in response to receiving bad grades; greater instability in self-esteem, in turn, predicted more depressive symptoms among those who were initially depressed (Crocker, Karpinski, Quinn, & Chase, 2003).

When individuals experience threats to domains of contingency, they are likely to become self-absorbed and focus more on themselves than on others. Along these lines, individuals with high self-esteem who highly based their self-worth on academics became more preoccupied with themselves and were rated as less empathic and caring toward another person's personal problem after receiving negative feedback about their intellectual abilities (Park & Crocker, 2005). As another example, among individuals who experienced a threat to the relational self (i.e., a romantic breakup), those who highly based their self-worth on being in a relationship reported greater emotional distress and obsessive pursuit of their ex-partner than those with lower relationship CSW (Park et al., 2011).

The heightened detection of social evaluative threat associated with contingent self-worth may also impact communication patterns with relationship partners as a form of coping. For example, Lemay and Clark (2008) found that people with self-worth that was contingent on their

intelligence or appearance tended to express a high degree of insecurity regarding their standing in the domain of contingency. For instance, they engaged in excessive reassurance seeking and exhibited strong emotional reactions to criticism from their partners. As a result, their partners detected these self-worth contingencies and responded by delivering inauthentic feedback in the domain of contingency, such as being reluctant to provide negative feedback in an effort to avoid upsetting the contingent person. These efforts appeared to be a source of anxiety and dissatisfaction for partners of individuals with contingent self-worth, and those with contingent self-worth were aware that their partners were not completely honest with them. Thus, individuals with contingent self-worth may respond to social evaluative threats in ways that eventually alter the functioning of relationships, by inhibiting open communication and fostering in partners an anxiety about doing or saying the “wrong” thing.

Overall, people with CSWs are highly vigilant to cues in their environment that signal whether they are succeeding or failing in valued domains. People with CSWs are likely to detect and be strongly affected by cues of social evaluative threat in the environment that pertain to their domains of contingency. In turn, they may intensify their psychological reactions to threat that lead to maladaptive coping responses, compared to those with less contingent self-worth.

5.2.3 Attachment styles

Attachment styles are another key moderator that may influence the degree to which people perceive and respond to social evaluative threat cues in the environment. According to attachment theory, individuals develop beliefs about themselves – as worthy or unworthy of love and support – and beliefs about others – as responsive or unresponsive – based on early interactions with caregivers (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1973; Main, Kaplan, & Cassidy, 1985). These beliefs are thought to be relatively stable over time and guide cognition, emotion, and behavior in close relationships and contexts in which people experience interpersonal threats (Bowlby, 1973; Hazan & Shaver, 1987).

Early work distinguished three attachment styles including secure attachment, avoidant attachment, and anxious-ambivalent attachment (Ainsworth et al., 1978; Hazan & Shaver, 1987). Secure attachment is characterized by comfort with intimacy and lack of excessive concern about abandonment. Avoidant attachment is characterized by discomfort with intimacy and dependence on others and difficulty trusting others.

Anxious/ambivalent attachment is characterized by concerns about rejection and abandonment and strong desires for closeness. Most recent research on adult attachment takes a dimensional approach, which recognizes two continuous dimensions of attachment insecurity – i.e., avoidance and anxiety (Brennan, Clark, & Shaver, 1998). Attachment security is suggested by low scores on both dimensions. Attachment insecurity is likely to guide and either amplify or attenuate detection and responses to social evaluative threat. For example, individuals with an avoidant attachment style are likely to perceive threats in their environment. Avoidant adults make more negative and distressing interpretations of their partner's inconsiderate behaviors, viewing them as signs of their partner's rejection (Collins, Ford, Guichard, & Allard, 2006; Collins, 1996), and report less trust in their romantic partners (Mikulincer, 1998; Simpson, 1990). Outside of established relationships, they show a negative appraisal bias, rating neutral faces as less friendly and more rejecting (Meyer, Pilkonis, & Beevers, 2004).

Given their discomfort with intimacy, avoidant individuals also tend to show deactivation of their attachment system – such as being less likely to turn to significant others – when confronted with threats, and instead cope with threats by distancing themselves cognitively and behaviorally from sources of distress (Shaver & Mikulincer, 2002). For instance, avoidant adults are likely to suppress attachment-related words, suggesting that they are sensitive to cues that could bring about eventual harm or threat as a result of growing closer to another person. Avoidant adults are also less likely to derive their self-esteem from interpersonal sources; they base their self-esteem less on having others' approval, family support, or God's love (Park, Crocker, & Mickelson, 2004). This may be one reason why they are less motivated to maintain high quality close relationships in response to social evaluative threat; as described earlier, people may strive to perform well in domains of contingent self-worth.

Given their chronic concerns with rejection and abandonment, people with high levels of attachment anxiety are also likely to perceive their environments as threatening. Like avoidant adults, anxiously attached adults report less trust in their romantic partners (Simpson, 1990) and view their partners as less supportive, even when accounting for the partner's behavior (Collins & Feeney, 2004). Anxiously attached individuals have difficulty believing they are loved, so they excessively seek reassurance of their romantic partner's love (Shaver, Schachner, & Mikulincer, 2005). When distressed, they show hyperactivation of the attachment system,

which involves focusing and ruminating on their distress and adopting emotion-focused coping strategies that exacerbate rather than diminish distress (Shaver & Mikulincer, 2002).

Attachment anxiety often increases the experience of stress when encountering threats and even alters physiological stress responses (Maunder & Hunter, 2001; Mikulincer, Shaver, & Pereg, 2003). For example, attachment anxiety is related to overproduction of cortisol, which is linked to cellular immune dysregulation (Jaremka et al., 2013). Such findings dovetail with the idea that adverse childhood experiences can alter the HPA axis and physiological systems in ways that affect how these systems operate later in adulthood (Repetti, Taylor, & Seeman, 2002). Thus, past negative experiences might lead some individuals to possess attachment styles that make them more vulnerable than others to detecting and reacting to social evaluative threats later in life.

5.2.4 Rejection sensitivity

Another key moderator that may amplify perceptions of and responses to social evaluative threat is rejection sensitivity (RS), which refers to the tendency to anxiously expect, readily perceive, and overreact to real or potential rejection from others (Downey & Feldman, 1996). Negative social experiences, such as peer rejection, abandonment, neglect, abuse, and exposure to family violence are thought to contribute to anxious expectations of rejection from others (Downey, Khouri, & Feldman, 1997; Feldman & Downey, 1994; London, Downey, Bonica, & Paltin, 2007). Similar to those with low self-esteem and insecure attachment styles, people with high RS possess a defensive motivational system that is hypersensitive to cues of real, potential, or imagined rejection. For example, when people viewed paintings representing themes of rejection (vs. acceptance vs. neutral themes), those with higher RS showed greater potentiation of the eyeblink startle response, suggesting that rejection cues automatically activated a defensive response reflecting a desire to protect the self from further threat (Downey, Mougios, Ayduk, London, & Shoda, 2004). In terms of coping responses, when people with high RS perceive rejection, they may display hostility directly, such as expressing negative thoughts and feelings toward others, or passively, by withdrawing love and support from their partners (Ayduk, Downey, Testa, Yen, & Shoda, 1999; Downey & Feldman, 1996).

In addition to general RS, individuals differ in how much they expect rejection from others based on specific qualities, such as their physical

attractiveness. For example, people with Appearance-based Rejection Sensitivity (Appearance-RS) anxiously expect to be rejected based on their looks and feel more alone, isolated, and rejected when thinking about aspects of their appearance they are dissatisfied with (Park, 2007). Studies from our lab also found that people with high Appearance-RS felt more negative affect and interpreted ambiguous appearance commentary more negatively after learning that their partner did not want to interact with them in a second part of the experiment. Importantly, this was only the case when participants' appearance was made visible to their partner during the first part of the experiment (Park & Harwin, 2010). Such findings suggest that people with high Appearance-RS are more likely to notice cues of social evaluative threat tied to their appearance and show amplified responses upon detecting such cues.

In terms of coping, people with high Appearance-RS report greater desire to avoid close others when they receive negative interpersonal feedback about their appearance (Park & Pinkus, 2009), and show greater social withdrawal on days when they feel unattractive (Park & Pinkus, 2009). They also express greater acceptance of cosmetic surgery to improve their appearance (Park, Calogero, Young, & Diraddo, 2010), especially when reminded of past experiences of being teased or rejected by others based on their looks (Park, Calogero, Harwin, & DiRaddo, 2009). Together, these findings suggest that cues of social evaluative threat are magnified for individuals who anxiously expect rejection from others based on their appearance.

5.2.5 Racial/ethnic group membership

In addition to the key moderators mentioned above, social group memberships can influence people's attentiveness to detecting cues of social evaluative threat in the environment and their responses to threat. Research suggests that individuals often view themselves in terms of the social identity that is most stigmatized in a given situation (Branscombe, Schmitt, & Harvey, 1999; Steele, Spencer, & Aronson, 2002) and experience social identity threat when a group they belong to is at risk of being devalued in a particular context (Crocker et al., 1999; Steele et al., 2002). Specifically, individuals with minoritized social identities may be especially vigilant to noticing environmental cues that suggest a lack of belonging or ability. When people from marginalized groups encounter cues in the environment suggesting that their identity is devalued, they may show indicators of threat, such as increased belonging uncertainty,

impostor feelings, and evaluative concerns, resulting in poor performance and disengagement. Past research highlights a few key group memberships that are likely to amplify perceptions of social evaluative threat and responses to threat: race/ethnicity, first-generation student status, socioeconomic status, and gender.

Underrepresented students of color are often concerned about belonging and performance in academic settings (Shapiro & Neuberg, 2007; Steele et al., 2002). For example, compared to White college students, Black students experience greater threats to their social belonging when faced with the prospect that they might have few friends in academia. Black students – who have to contend with negative stereotypes about their intellectual abilities – are vigilant for cues of threat and experience heightened self-doubt in social evaluative academic settings (Walton & Cohen, 2007). For example, in one study, researchers examined interracial interactions and manipulated whether participants received safety cues (i.e., their different-race partner engaged in stereotypically Black and stereotypically White activities equally) or safety cues accompanied by a threat cue (i.e., their partner engaged in only race-stereotypical activities with friends of that race). Black participants were more sensitive to the threat cue; they reported more rejection concerns and less interest in forming interracial friendships; White participants were not differentially affected by safety versus threat cues (Wout, Murphy, & Barnett, 2014).

Cues in the environment may be direct, subtle, or ambiguous, but are nevertheless magnified for those who are susceptible to stereotype threat. Stereotype threat occurs when individuals worry they may unintentionally confirm a negative stereotype about their group (Steele et al., 2002). Such thought intrusions can lead individuals to actively monitor their surroundings for cues suggesting their inferiority, while also attempting to monitor their own performance (Schmader, Johns, & Forbes, 2008). This monitoring process is maladaptive because individuals may experience anxiety and apprehension, which can disrupt task-relevant goals to avoid confirming the stereotype.

Consistent with this idea, Black participants performed poorly on a test when they were reminded of their race or told that the test was diagnostic of their abilities (Steele & Aronson, 1995), and showed increased blood pressure and worse test performance compared to European Americans or Black participants not under stereotype threat (Blascovich, Spencer, Quinn, & Steele, 2001). Other underrepresented groups also show diminished self-perceptions and motivation when exposed to stereotypical

depictions of their group. For example, American Indian students who saw American Indian mascots experienced lowered state self-esteem, community worth, and fewer achievement-related possible selves (Fryberg et al., 2008). Such images are thought to be harmful because they remind American Indians of the stereotypes associated with their group and the limited ways that society views them and their capabilities.

The rejection sensitivity construct described earlier can also be applied to group memberships reflecting sensitivity to negative evaluations based on belonging to particular groups. For example, Black college students who are highly sensitive to rejection based on their racial group membership feel more discomfort during the transition to college, report less trust in the university, and perform worse academically over time than those who are less sensitive to race-based rejection or have positive race-related experiences (Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002). Similarly, race-based stigma consciousness reflects expectations of being the target of stereotypes and discrimination based on one's race (Pinel, 1999). In one set of studies, Black participants who scored high in stigma consciousness assumed that their White friends and romantic partners held more negative attitudes toward Black people, and this belief was associated with lower relationship satisfaction and commitment, negative perceptions of the partner's regard, and reduced prosocial behavior (Lemay & Teneva, 2020).

Such findings suggest that individual differences in expectations of race-based social evaluative threats promote detection of such threats, which detracts from people's experiences in new social groups and interracial interactions. Research on attributional ambiguity further suggests that negatively stereotyped individuals may be unsure of the motives underlying how people treat them (Crocker, Voelkl, Testa, & Major, 1991). When people experience attributional ambiguity, they wonder if another person's actions or behaviors toward them are motivated by bias or prejudice towards their group.

Other studies suggest that the salience of stigmatized group membership can activate common identities between racial group members (Craig & Richeson, 2012, 2014). For example, studies on stigma-by-prejudice-transfer show that members of stigmatized groups perceive group-based threats even when prejudice is aimed at other stigmatized group members (Sanchez, Chaney, Manuel, Wilton, & Remedios, 2017; Sanchez, Chaney, Manuel, & Remedios, 2018). Such findings suggest that expectations of prejudice among group members can amplify perceptions of threat in the environment and in turn, heighten expectations of being stigmatized and treated unfairly by others.

5.2.6 First-generation student status

Another group that may be susceptible to perceiving social evaluative threat is first-generation college students (i.e., neither parent graduated from a four-year college or university). First-generation students may be the target of negative stereotypes based on their status, such as assumptions that they are unprepared for college academics, have lower educational aspirations, and are less committed to participating in the learning process than continuing-generation students (Orbe, 2008). Accordingly, first-generation students may be highly attuned to noticing cues that signal that their identity is not welcomed or accepted. Along these lines, cultural mismatch theory suggests that first-generation college students often come from working-class backgrounds that value interdependence, whereas universities value the norm of independence (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). This mismatch between institutionalized cultural norms and models of self can create discomfort and undermine perceptions of fit and belonging. Accordingly, when first-generation students are in academic settings that value independent norms, they may be more susceptible to experiencing social evaluative threat, compared to continuing-generation students who are less likely to doubt their belonging and ability in academic contexts.

Consistent with this idea, first-generation (vs. continuing-generation) students show higher cortisol levels and more negative emotions when they are exposed to independent cultural norms (Stephens, Townsend, Markus, & Phillips, 2012), and report greater feelings of impostorism, which is associated with less course engagement and more drop out intentions when exposed to cues of competition in academic STEM environments (Canning et al., 2020). First-generation students are especially likely to perceive cultural mismatch in norms as a threat, as such cues could convey the possibility of negative evaluation from others based on their group membership. In turn, these students may engage in more avoidant coping responses, such as disengaging or dropping out of academic domains.

5.2.7 Socioeconomic status

Although often overlapping with first-generation identity, socioeconomic status (SES) is a distinct characteristic that can also amplify perceptions of threat cues in the environment and lead to common indicators of threat. For example, participants from low-SES backgrounds in France performed worse on a test when it was framed as a measure of intellectual ability, compared to when the test was not framed as a measure of ability (Croizet & Claire, 1998).

Studies in the U.S. also find that low-SES college students underperform and report less confidence relative to high-SES students, especially when their low-SES identity is activated before taking a test framed as diagnostic of their intelligence (Spencer & Castano, 2007). Asking participants to report on their social class makes this identity especially salient for those from low-SES backgrounds, leading to negative appraisals of their capabilities. Low-SES students are also highly attentive to cues reflecting a university's warmth versus chilliness towards socioeconomic diversity, as indicated by increased reports of academic self-efficacy in the presence of warm versus threatening cues toward socioeconomic diversity in the academic environment (Browman & Destin, 2016).

Research on children and adolescents further reveals how low-SES may magnify perceptions of threat in the environment. In addition to experiencing stressors such as food insecurity and residential instability, poor children are more susceptible to perceiving social evaluative threat in terms of a lack of social support and responsiveness from their parents (Evans, 2004), and are at increased risk of exposure to interparental conflict and parental depression resulting from economic strain (Conger et al., 1992; Conger, Lorenz, Elder, Simons, & Ge, 1993). Indeed, poverty and corresponding social stressors heighten children's physiological reactivity in the form of higher resting heart rate, blood pressure, and cortisol over time (Evans, 2003), increased physiological reactions to even mildly threatening events (Repetti et al., 2002), and hindering individuals from coping effectively with threats in the environment (DuBois, Felner, Meares, & Krier, 1994). In sum, low-SES status may be viewed as a vulnerability factor that heightens perceptions of social evaluative threat cues in the environment and interferes with one's ability to cope effectively with the threat.

5.2.8 Gender group membership

Finally, gender group membership may heighten detection of social evaluative threat cues in the environment. For example, U.S. cultural stereotypes about women's ability and belonging in science, technology, engineering, and math (STEM) are often conveyed through physical, social, and symbolic cues that may be perceived as threatening to women due to their marginalized group status. Consistent with this idea, physical objects or aspects of STEM classrooms that reflect traditionally masculine stereotypes associated with computer science (e.g., Star Trek poster, videogames) undermine women and girls' interest, belongingness, and

sense of fit within this field (Cheryan et al., 2009; Cheryan, Master, & Meltzoff, 2015; Cheryan, Meltzoff, & Kim, 2011). In contrast, when classrooms contain non-stereotypical objects (e.g., nature poster, phone books), gender gaps in STEM-related self-perceptions are reduced. Other studies have found that women who were exposed to male faces prior to completing a math task showed more error vigilance, whereas this effect did not occur for men (Wu, Park, & Dasgupta, 2020). The male face prime was thought to evoke the notion that STEM fields are male-dominated, thus augmenting evaluative concerns among women.

Overall, these findings suggest that women, as members of an under-represented and negatively stereotyped group in STEM, are more attentive to cues that could threaten their social identity in these contexts. Indeed, many studies demonstrate that women, relative to men, perceive cues of social identity threat and stereotype threat in STEM settings and in turn, show lowered belonging, self-efficacy, and diminished interest, motivation, and performance in STEM (see Murphy & Taylor, 2012; Steele et al., 2002; Walton & Brady, 2017 for reviews). Women perform worse in quantitative domains when cues in the environment signal threat, such as the test being framed as revealing gender differences (Spencer et al., 1999), being outnumbered by men in a math setting (Inzlicht & Ben-Zeev, 2000), or being reminded of one's gender (Shih, Pittinsky, & Ambady, 1999). In other studies, women report lower leadership aspirations when they are exposed to gender stereotypic (vs. gender-neutral) commercials (Davies, Spencer, & Steele, 2005) and show decreased working memory capacity and greater cardiovascular stress following experiences of sexism (Logel et al., 2009; Salomon, Burgess, & Bosson, 2015).

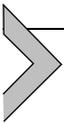
Women who anxiously expect to be rejected based on their gender group membership also report lower academic self-confidence (London, Downey, Romero-Canyas, Rattan, & Tyson, 2012) and show greater fluctuations throughout the semester in their gender-STEM self-concept, which impairs their academic performance and engagement (Ahlqvist, London, & Rosenthal, 2013). Similarly, stigma consciousness (Pinel, 1999) reflects expectations of being negatively stereotyped by others and is associated with perceptions of discrimination (Pinel, 1999), being disrespected at work (Pinel & Paulin, 2005), and attributing negative evaluations to discrimination (Pinel, 2004). Stigma consciousness can thus predispose individuals to stereotype threat. Along these lines, women with high stigma consciousness performed worse on a math test when they were told that gender differences existed on the test (Brown & Pinel, 2003).

Cues from peers can negatively impact women in STEM settings, as well. In a study by [Murphy et al. \(2007\)](#), math, science, and engineering majors watched a conference video with either a balanced or unbalanced ratio of men to women. Women who watched the gender unbalanced (vs. gender-balanced) video showed greater indicators of cognitive and physiological vigilance and reported less belonging and intentions to participate in the conference. Men, on the other hand, were not affected by this environmental cue. In another study, first-year female engineering students – who were placed in study groups with women as the numerical minority – showed greater anxiety, less verbal participation, and less confidence and career aspirations than when they were placed in groups with majority women ([Dasgupta, Scirle, & Hunsinger, 2015](#)). Another study found that female engineering students who interacted with a sexist instructor performed worse on an engineering test, but not a verbal test ([Purdie-Vaughns, Steele, Davies, Ditmann, & Crosby, 2008](#)). Overall, these studies suggest that for members of negatively stereotyped groups, cues of social evaluative threat are likely to be amplified and lead to avoidant coping, such as exhibiting less effort, showing worse performance, or participating less in a given context.

Experiences of social evaluative threat can even persist among women who are already committed to pursuing STEM. For example, women (but not men) faculty in STEM showed greater disengagement from STEM when discussing research with male colleagues, suggesting that they experienced social identity threat and concerns about being judged negatively by others ([Holleran, Whitehead, Schmader, & Mehl, 2011](#)). Similarly, women expressed greater concerns about being evaluated negatively on the basis of their gender on days when they had work conversations with male colleagues in STEM environments that subtly conveyed a lack of acceptance and respect ([Hall, Schmader, & Croft, 2015](#)). Such encounters, in turn, increased women's feelings of psychological burnout ([Hall, Schmader, Aday, & Croft, 2019](#)).

Other research suggests that men may be uniquely vulnerable to experiencing social evaluative threats arising from possessing a more anxious and uncertain gender status. According to precarious manhood theory ([Vandello & Bosson, 2013](#)), manhood is an elusive status that must be earned, is easily lost, and is conferred by others. In contrast, womanhood is thought to be assigned at birth, experienced with more certainty, and independent of others' evaluations. Responses to manipulations of gender non-conformity are consistent with this perspective. For example,

Vandello, Bosson, Cohen, Burnaford, and Weaver (2008) gave participants a test of knowledge regarding stereotypically masculine (e.g., sports, auto mechanics, home repair) and feminine (e.g., cooking, childcare, fashion) topics. Perceptions of gender deviance were manipulated by telling some participants that their knowledge was atypical for their gender and more common for another gender (i.e., telling men that their knowledge was similar to that of an average woman, and telling women that their knowledge was similar to that of an average man). Men, but not women, responded to these manipulated perceptions of gender deviance with increased anxiety and greater discomfort with showing others their scores (Vandello et al., 2008), suggesting social evaluative threat. Men's concerns about others' evaluations of their masculinity and sexuality may even prevent them from supporting others who may be targets of social evaluative threats. For instance, men who perceived their masculinity to be fragile were less likely to confront sexual prejudice toward a gay man, and their reluctance to help predicted their greater confidence in being seen as heterosexual (Kroeper, Sanchez, & Himmelstein, 2014).

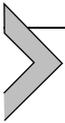


6. Summary

Overall, this section on moderators of threat suggests that individual differences in people's expectations and motivations to detect threat may shape how they perceive and respond to social evaluative threat cues in the environment. In particular, people with low self-esteem, contingencies of self-worth, insecure attachment styles, and high rejection sensitivity are especially attuned to cues of social threat, and their reactions and coping behaviors often reflect a desire to avoid further threat and manage or reduce emotional distress by withdrawing or disengaging from the threatened domain. In contrast, people with high self-esteem, low contingency of self-worth, secure attachment styles, and low rejection sensitivity may be less vigilant for signs of social evaluative threat in the environment, and respond to such threats with approach motivated behaviors and more problem-focused coping strategies. In addition, psychological distance is a situational moderator that may amplify or attenuate perception of and responses to social evaluative threat.

Furthermore, research on social identities suggests that group memberships can serve as a source of social evaluative threat in some contexts. Specifically, people from historically underrepresented or marginalized

groups in the U.S., such as people of color, first-generation college students, those with low socioeconomic status, women in STEM settings, and men who deviate from gender norms are especially likely to perceive and be affected by cues of social evaluative threat, including exposure to objects that convey negative stereotypes, messages of exclusion versus inclusion based on group membership, or the ratio of ingroup to outgroup members in certain environments. When cues in the environment activate threats relevant to one's group membership, this leads to common indicators of threat, such as lowered belonging and engagement, and to lowered motivation, such as decreased aspirations and performance in these settings (Casad, Petzel, & Ingalls, 2019; Cheryan et al., 2009; Davies et al., 2005; Inzlicht, Aronson, & Mendoza-Denton, 2009; Murphy & Taylor, 2012; Spencer et al., 1999). Individual differences in group-based rejection sensitivity, stigma consciousness, and insecurity about one's status as a group member also reveal chronic expectations of social evaluative threats due to group membership.



7. Connections to existing models of threat

7.1 Current model versus other social evaluative models of threat

The current model builds upon and advances existing models of threat in several ways. First, whereas previous work on social evaluative threat focused mainly on the effects of threat on people's emotional and physiological reactions, the current model provides a broad, integrative framework for understanding how the real or imagined experience of being negatively evaluated can occur at the level of the individual, as a relational partner, or as a group member. Although Dickerson (2008) mentioned that social evaluative threats can occur at these different levels, the research she reviewed focused mainly on psychobiological responses to threat and how social evaluative threat differed from other stressors. For example, Dickerson and Kemeny's (2004) meta-analytic review of acute lab stressor studies found that threats to the social self elicited a stronger cortisol stress response and slower recovery of cortisol to baseline relative to non-social evaluative threats.

Other studies find that people exhibit heightened proinflammatory cytokine activity in response to social evaluative threat, such as taking a math test or giving a speech in front of an evaluative audience versus no

audience (Dickerson, Gable, Irwin, Aziz, & Kemeny, 2009). In short, much of the research in this area thus far has focused on establishing the unique impact of the social evaluative aspect of threat, to be distinguished from merely engaging in a difficult task (Gruenewald et al., 2004) or being in the presence of an inattentive person during a performance task (Dickerson, Mycek, & Zaldivar, 2008).

Extending beyond these ideas, our model discusses coping responses to social evaluative threat and suggests that perceptions of and responses to threat may be amplified by both situational moderators of psychological distance and expectations and motivation to detect threat as reflected in self-esteem, contingencies of self-worth, attachment styles, rejection sensitivity, and social group memberships. Furthermore, although Dickerson (2008) reviewed a few ways to reduce emotional and physiological reactions to social evaluative threat, we provide a more in-depth review at the end of this chapter discussing how interventions can be leveraged at different points of the model to produce the most impact.

7.2 Current model versus General Process Model of Threat and Defense

The current model also extends beyond Jonas et al. (2014) General Process Model of Threat and Defense (GPM). The GPM is rooted in cognitive dissonance theory and posits that “*any experience that is discrepant with prevailing cognitions or motivations arouses anxious vigilance and motivates efforts to reduce this arousal by means of reactive thoughts and behaviors*” (Jonas et al., 2014, p. 221). The GPM integrates ideas and findings from Terror Management Theory (Greenberg, Solomon, & Pyszczynski, 1997) to Compensatory Control Theory (Kay, Whitson, Gaucher, & Galinsky, 2009), the Meaning Maintenance Model (Proulx & Inzlicht, 2012), Unconscious Vigilance Model (Holbrook, Sousa, & Hahn-Holbrook, 2011), and Reactive Approach Model (McGregor, Nash, Mann, & Phills, 2010) to highlight commonalities in terms of how people experience discrepancies and respond to threat.

According to the GPM, threats to mortality, certainty, controllability, and meaning activate discrepancies that elicit anxiety, arousal, and attentional vigilance at a neural level. Detection of discrepancies initially triggers the Behavioral Inhibition System (BIS), which leads to avoidance motivation as a proximal response. However, individuals can also engage in approach-oriented responses over time in which they dampen the BIS and seek to resolve the discrepancy or reduce its impact. Distal responses can be

viewed in terms of concrete (vs. abstract) and personal (vs. social) defenses. For example, individuals can respond to threats by focusing on concrete, personal rewards, such as eating, drinking, or making purchases that appeal to one's idiosyncratic preferences (Ferraro, Shiv, & Bettman, 2005), or they can respond to threats by seeking concrete, social rewards, such as increasing desire to affiliate with others (Maner et al., 2007; Park & Maner, 2009). Alternatively, individuals can respond to threats with abstract, personal defenses, such as showing increased zeal and commitment to goals and values (McGregor et al., 2010) or with abstract, social defenses, such as increasing identification with one's group or group-related norms (Jonas et al., 2008).

Although there are some similarities between the GPM and the current model, our model differs in a few key ways. First, whereas the GPM focuses on threats in general, our model focuses specifically on social evaluative threats and how the real, imagined, or potential experience of being negatively evaluated by others – as a person, relational partner, or group member – affects responses to such threat. Second, whereas the GPM distinguishes between proximal versus distal defenses to threat, we suggest that proximity might function as a situational moderator in amplifying (or attenuating) perceptions of and coping responses to threat. The GPM's distinction between personal and social defenses dovetails with our conceptualization of responses to threat at differing levels of self, although our model also distinguishes between the relational and collective levels, and suggests that threats to one level may overlap or spill over into affecting other levels of the self simultaneously. In short, whereas the GPM proposes a view of threat organized in terms of a desire to reduce discrepancies and engagement in proximal versus distal defenses that vary in personal or social sources, our model focuses on social evaluative threat in particular and how individuals differ in their perceptions of and responses to threat based on situational factors and variability in underlying expectations and motivation to detect threat.

7.3 Current model versus taxonomy of threats

Expanding upon the GPM, Reiss, Leen-Thomele, Klackl, and Jonas (2021) proposed a taxonomy of threats that describes different origins of threat, whether the threat is existential or situational in nature, what psychological needs are thwarted when threats are encountered, and proximal and distal defensive responses to threat. Going beyond these ideas, our model integrates disparate literatures across individual, relational, and collective aspects of the self as they pertain to social evaluative threat in particular.

Furthermore, whereas Reiss's taxonomy of threat focuses mainly on classifying different types of threats, our model also suggests key points of intervention that involve changing or replacing the threatening cue in the environment with cues of safety, altering perceptions of threat, and helping people better cope with the threat.

7.4 Current model versus risk regulation model

At the relational level, theoretical models exist regarding people's assessment of threat versus safety in dyadic contexts. For example, [Murray et al. \(2006\)](#) risk regulation model suggests that individuals strive to maximize interpersonal closeness while also minimizing the chances of being rejected by their partner. Perceptions of a partner's positive regard enable individuals to risk seeking connection and interdependence with their partner. That is, when individuals feel valued by their partner, they may be less likely to perceive the threat of rejection when interacting with partners, and feel more secure in seeking intimacy with their partner despite the risk of rejection. Whereas this previous model focused on dyadic contexts, our model encompasses perceptions of social evaluative threat at the individual, relational, and collective levels of the self, and discusses ways to promote social safety as an intervention at each level.

7.5 Current model versus multi-threat framework

At the collective level, [Shapiro and Neuberg's \(2007\)](#) multi-threat framework distinguishes between the target of threat and the source of threat in terms of self versus other. Similar to how our model examines the self across varying levels, these authors differentiate between how the self is evaluated versus how one's group is evaluated, with implications for intervention. However, whereas the multi-threat framework focuses solely on social identity threats, our model takes a broader view and examines social evaluative threats more generally by incorporating the dyadic, relational context as an additional source of threat.

Other researchers have also proposed models of threat based on group memberships, such as how targets of negative stereotypes or underrepresented groups respond to situational threats ([Casad et al., 2019](#); [Murphy & Taylor, 2012](#); [Murphy et al., 2007](#); [Steele et al., 2002](#); [Trawalter, Richeson, & Shelton, 2009](#); [Walton & Brady, 2017](#); [Walton, Murphy, & Ryan, 2015](#)). Again, however, these models focus primarily on specific group memberships, such as race or gender, whereas the current model presents social identities as just one example of a set of broader

expectations and motivations to detect threat that amplifies the experience of social evaluative threat. From this perspective, interventions do not need to focus solely on mitigating or reducing threat based on specific social identities, but can occur at a broader level, by drawing upon findings from other literatures. For instance, self-affirmation is often viewed as an intrapersonal process, but has been shown to be effective in buffering members of negatively stereotyped groups from social evaluative threats (Walton, 2014). These and other findings suggest that interventions that have been studied in one setting (e.g., self-esteem threat contexts) may be a useful strategy to combat threat across multiple contexts involving different levels of the self.

7.6 Current model versus coalitional safety model

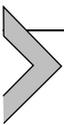
At a collective level, Boyer and colleagues (2015) proposed a model in which humans are presumed to possess an internal regulatory variable called the coalitional safety index, which reflects mental representations of how safe one feels in their coalitions and alliances within social environments. When individuals detect low coalitional support, they activate precautionary plans, such as avoiding certain people and places or being motivated to help their ingroup to demonstrate commitment to their group. When encountering outgroup members, such as rival coalitions, individuals experience coalitional stress that manifests as group-level differences in physical health and subjective well-being (Boyer, Firat, & van Leeuwen, 2015). Whereas Boyer's model emphasizes perceptions of safety versus threat in intergroup contexts, our model views social evaluative threat as potentially involving multiple levels of the self, with the collective self being just one of these levels.

7.7 Strengths of the current model

Extending beyond previous models of threat, one of the unifying strengths of our model is to bring together disparate literatures that traditionally examine single moderators for a single aspect of the self. By integrating across individual, relational, and collective levels of the self, we suggest that there are a common set of moderators that may amplify threat detection and guide responses to threat. Some of these variables might be specific to a certain level of the self, but some might transcend levels of the self, such as psychological distance.

Furthermore, different levels of the self could have a compensatory relationship with regard to experiences of social evaluative threat and ways

of coping that have not been examined previously. Notably, our model goes beyond existing models of threat by identifying instances where moderators might interact with different levels of the self. For example, if a threat cue is amplified for individuals with a stigmatized identity (group level threat), their coping responses might differ depending on whether they have high versus low self-esteem (an individual level variable). Other models might miss this type of interaction across the levels of self in explaining behavior as a result of threat. As another example, a person who experiences a threat to their collective self might benefit from calling to mind an aspect of themselves that is at the same level of threat (e.g., reminding themselves of another group membership), but might also be protected from threat – in similar or different ways – if they think about an aspect of the self at another level, such as thinking about a secure attachment (relational self) or their creativity (individual self).



8. Implications for intervention

The current model provides an integrative account of how individual, relational, and collective levels of the self shape perceptions of social evaluative threat in the environment. Given that the individual self is flexible and can overlap with relational and collective identities, interventions typically studied at one level may be useful to change how people perceive and respond to threat at other levels. Notably, our model provides insights into understanding when, why, and how interventions may be effective by: (a) changing cues in the environment to be less threatening; (b) changing people's perceptions of social evaluative threat cues; and (c) helping people cope with the effects of threat. In addition, because there is thought to be overlap between individual, relational, and collective levels of the self, interventions at one level may serve to reduce the perception of or impact of social evaluative threats at other levels of the self.

8.1 Intervention #1: Change cues in the environment

Based on our model, one way that social evaluative threat can be reduced is to remove or replace threatening cues from the environment. Given that the absence of a threat cue does not necessarily indicate the presence of a safety cue, interventions need to add cues to the environment to convey psychological safety as well. This process may be especially relevant at relational and collective levels of the self.

8.1.1 Relational level

Cues within close relationship contexts can signal psychological safety. For example, [Campbell, Lackenbauer, and Muise \(2006\)](#) found that in short-term romantic relationships, people with more negative self-perceptions felt more positive affect after they received feedback (ostensibly from their relationship partner) that was enhancing – in which their partner rated them more favorably than they did themselves. In long-term relationships, individuals with negative self-perceptions reported feeling closer and more intimacy when they received verifying feedback – when their relationship partner rated them similarly to how participants rated themselves. Such findings suggest that receiving enhancing appraisals from partners can signal acceptance and safety in the initial stages of relationship formation, while receiving verifying appraisal cues from partners can lead to greater comfort and security in long-term relationships, by suggesting that partners know them in an honest and accurate way. However, other research suggests that even within established marriages, people are happier in their relationships when their partners see them in enhancing ways ([Murray et al., 1996](#)).

Studies also suggest that certain types of feedback from partners can provide a safety cue that helps people with low self-esteem or attachment anxiety feel more secure in their relationships. For example, [Lemay and Dudley \(2011\)](#) found that individuals with romantic partners who had low self-esteem or anxious attachment styles tended to exaggerate positive thoughts and feelings toward these partners, conceal negative thoughts and feelings, and go out of their way to demonstrate that they cared for their needs. These efforts appeared effective in helping these partners with low self-esteem and attachment anxiety feel more valued in their relationship, despite their proclivities to feel insecure. Subsequent research demonstrated a causal chain – i.e., perceiving partner insecurity in response to social evaluative threats activated goals to reduce that insecurity, which increased expression of positive regard for partners, which in turn, made partners feel more satisfied and secure in the relationship, especially for partners with chronic social evaluative concerns ([Lemay & Ryan, 2018](#)). In short, interventions in which partners are encouraged to express positive regard to each other may be useful in reducing social evaluative threat and relationship problems that arise from this threat, especially when the recipient tends to expect social evaluative threat.

Interventions to counteract social evaluative threat can also occur through online forms of communication. For example, the more people use Facebook, the more likely they are to report jealousy in their romantic

relationships (Muise, Christofides, & Desmarais, 2009); this may be because Facebook presents ambiguous information about partners (e.g., unknown past romantic or sexual partners) that may be perceived as threatening to one's relationship. Indeed, studies suggest that the more people engage in passive (vs. active) usage of Facebook, the more they experience envy and lower affective well-being (Verduyn et al., 2015). Thus, one way to prevent exposure to social evaluative threat in relationships may be to remove sources of potentially threatening cues (e.g., delete Facebook or use social media less often) or add cues on social media that serve to bolster one's relationship. For example, displaying one's partner status publicly or including one's partner in a profile picture on Facebook are associated with greater relationship satisfaction for both men and women (Papp, Danielewicz, & Cayemberg, 2012).

8.1.2 Collective level

At the collective level, gatekeepers and authority figures can remove cues of threat in the environment to minimize the social evaluative component of tasks. For example, compared to framing a task as highly evaluative and diagnostic of one's intellectual capabilities, presenting a task as non-diagnostic reduces performance gaps between men and women on math tests (Spencer et al., 1999) and between Black and White students on standardized tests (Steele & Aronson, 1995).

In addition to removing cues of threat, adding cues may be useful for signaling a psychologically safe environment to members of certain groups. Along these lines, students reported more positive impressions of the instructor, increased sense of belonging, and had fewer absences throughout the semester when college instructors emphasized inclusive values and acceptance of diversity in a large social psychology course (Howanky, Maimon, & Sanchez, 2021). Introducing diversity-focused recruitment materials (Brady, Kaiser, Major, & Kirby, 2015; Purdie-Vaughns et al., 2008), adding diversity in numeric representation (Murphy et al., 2007; Schmader & Sedikides, 2018), and inclusive messaging in curricula (Brannon, Markus, & Taylor, 2015) also boost belonging and performance among underrepresented group members. At times, however, the same cues that signal safety to some group members may signal threat to others. For example, White participants (but not racial minorities) were faster to associate multiculturalism with exclusion versus inclusion, but this effect was attenuated when diversity was framed as inclusive of all groups, including European Americans (Plaut, Garnett, Buffardi, & Sanchez-Burks, 2011).

The way in which instructors interact with students also serves as a powerful cue that shapes students' self-perceptions, motivation, and behavior. As one example, [Canning, Muenks, Green, and Murphy \(2019\)](#) found that while college students reported more negative experiences in STEM courses taught by professors with a fixed mindset (i.e., the belief that intelligence is innate and unchanging), students taught by professors who conveyed a growth mindset (i.e., the belief that intelligence is malleable) showed better academic-related outcomes, especially underrepresented racial minority students. Similarly, [Muenks et al. \(2020\)](#) found that students who watched a videoclip of a male STEM professor expressing a fixed mindset reported less belonging and engagement in the course, whereas those who saw a professor conveying a growth mindset showed greater belonging and academic engagement.

Other studies demonstrate that feedback is an important situational cue that can shape students' self-perceptions, motivation, and behavioral intentions. Along these lines, [Park, Kondrak, Ward, and Streamer \(2018\)](#) found in a series of studies that women who received positive feedback on a math test (i.e., their score plus the written comment "Good job!") from a perceived gatekeeper (i.e., a male vs. female authority figure in math) reported higher self-efficacy, belonging, more favorable attitudes toward, identification with, and interest in STEM, and showed greater implicit identification with STEM than those who received objective feedback (i.e., their score only) on the math test ([Park et al., 2018](#)).

These findings are not limited to the lab; a large intervention study conducted among students taking introductory college calculus courses found that students who received positive written feedback on their exam from instructors (vs. objective feedback in which they only received their exam score) showed better STEM-related outcomes ([Park et al., in prep](#)). Specifically, students who received positive (vs. objective) feedback on their math exam reported greater sense of belonging in math, which predicted more favorable attitudes/identity/interest in STEM. Students also reported higher self-efficacy in their math class, which predicted earning higher final grades in their calculus course. These findings emerged for all students, but especially for those from racially minoritized groups in STEM (i.e., non-White, non-Asian students).

In another set of studies, college students reported higher self-efficacy and belonging in a STEM lab and reported greater desire to join the lab and recruit other students to join the lab when they imagined asking a question and receiving a positive response from their instructor (i.e., being told

“That’s a great question, I’m glad you brought that up!”) (Park, O’Brien, Italiano, Panlilio, & Ward, under review). Women, in particular, benefited more from imagining receiving a positive (vs. negative or neutral) instructor response. These findings emerged even when the positive response was directed toward another student in the class, and regardless of whether the response was given in a public or private setting. Together, these findings suggest that positive instructor feedback can serve as a relatively minimal psychological safety cue that bolsters students’ confidence and inclusion in academic settings, especially for members of underrepresented groups.

Exposing people to examples of successful ingroup members is another way to signal psychological safety in an environment. For example, female college students who were exposed to ingroup role models (i.e., female professors teaching STEM courses; female peer mentors) expressed greater confidence, belonging, and motivation to pursue STEM majors and careers, compared to those who did not have a female role model or peer mentor (Dennehy & Dasgupta, 2017; Stout, Dasgupta, Hunsinger, & McManus, 2011). In another study, female college students assigned to participate in small group engineering discussions felt less anxious and participated more in the group task when they were in a female-majority (vs. female-minority) group (Dasgupta et al., 2015). In sum, exposing women and girls to role models in STEM – fields in which they are underrepresented – increase belonging and interest in these domains (Cheryan, Drury, & Vichayapai, 2012; Cheryan, Siy, Vichayapai, Drury, & Kim, 2011; Johnson, Pietri, Fullilove, & Mowrer, 2019).

Even subtle, nonverbal cues of social evaluative threat can have a negative impact on members of underrepresented groups. For example, Word, Zanna, and Cooper (1974) found that compared to White applicants, Black applicants who were interviewed for a hypothetical job received less positive nonverbal signals from the White interviewer (e.g., less eye contact, less forward lean, more physical distance, shorter interviews). Black participants, in turn, reciprocated these behaviors in a self-fulfilling prophecy. If negative expressions lead to poor outcomes, then supportive expressions such as smiling, nodding, and leaning forward may act as important safety cues that reduce social evaluative threat and improve interactions with others.

Studies in organizational group settings also suggest that adding cues of psychological safety can effectively signal acceptance and belonging, especially for members of marginalized groups. For example, Chaney and Sanchez (2018)

found that women and racial minorities who saw a hypothetical bathroom sign that said “all-gender restroom” with a non-binary image rated the organization as being more procedurally fair and fostering a more positive work climate than those who saw a sign that said “restroom” with a binary gender image. Other studies find that even subtle inclusion of gender pronouns can signal identity-safety and improve organizational attitudes among members of minoritized groups, such as lesbian, gay, bisexual, transgender, and queer (LGBTQ+) employees (Johnson, Pietri, Buck, & Daas, 2021).

Given that even subtle social cues suggesting that one could be evaluated negatively by others diminishes people’s engagement and performance on tasks (Hall et al., 2015, 2019; Inzlicht & Schmader, 2011; Steele et al., 2002; Walton & Spencer, 2009), interventions could seek to foster positive interactions among individuals that convey cues of acceptance, especially in environments that may trigger concerns about belonging and inclusion with others (Chaney, Sanchez, & Remedios, 2016; Davies et al., 2005; Hall et al., 2015; Hall, Schmader, Aday, Inness, & Croft, 2018; Walton et al., 2015). Consistent with this idea, female engineers reported less concerns about being evaluated negatively by others based on their gender when they perceived the organization to have more gender-inclusive policies, and this was due to expecting and having more positive interactions with their male colleagues (Hall et al., 2018). On a broader note, social cues that signal a desire to work together with others have been shown to increase people’s intrinsic interest, enjoyment, and persistence on challenging tasks (Carr & Walton, 2014).

Related to these ideas, allyship is another cue that may reduce perceptions of social evaluative threat in the environment. For example, women of color expected less gender and race-based discrimination when they read a blog post ostensibly written by a White male engineering professor who expressed gender-allyship (i.e., who wrote about sexism faced by female politicians) (Chaney, Sanchez, & Remedios, 2020). Similarly, Black women who saw a White female employee presented as an ally (vs. a White female employee with no additional information) reported greater perceived allyship, which predicted greater anticipated trust and belonging within the organization (Johnson & Pietri, 2020). Together, these findings reveal that adding positive social cues to an environment can reduce experiences of social evaluative threat. Moreover, outgroup members can play a crucial role in cueing safety and belonging for minoritized individuals in a given environment.

Finally, it is noteworthy that even *physical* features of environments can carry symbolic social meanings and should be considered when removing or replacing cues of threat or adding cues of safety to an environment. For example, one study found that students of color felt greater sense of belonging, support from the university, and showed higher academic engagement when they read about a future physical space on campus that was welcoming to ethnic minority students in particular, versus being a generic space for any students to use (Kirby, Tabak, Ilac, & Cheryan, 2020). As another example, including images of female scientists in wall art can also increase perceptions of psychological safety by challenging stereotypes about who belongs in STEM fields (Master, Cheryan, & Meltzoff, 2016). Overall, both physical and social environmental cues can convey important information about safety versus threat and thus provide a critical point of intervention to reduce perceptions of social evaluative threat.

8.2 Intervention #2: Change perceptions of threat in the environment

Cues in the environment are not always amenable to being removed, replaced, or altered, due to historic, legal, or sociocultural barriers. For instance, the Board of Trustees at the University of North Carolina at Chapel Hill only recently lifted a 16-year ban on renaming campus buildings and monuments, many of which honored historic figures that promoted segregation and White supremacy (Anderson, 2020). When changing cues in the environment is difficult or unlikely, another key point of intervention is to reframe people's perceptions of the cue to be less threatening, which may be informed by individual, relational, and collective aspects of the self.

8.2.1 Individual level

At the individual level, self-affirmation is a useful strategy to buffer people from social evaluative threat. Self-affirmation allows individuals to expand their working self-concept via reminders of other self-attributes (Critcher & Dunning, 2014; Steele, 1988), social identities (Rydell, McConnell, & Beilock, 2009), and values (Miyake et al., 2010) that are important to the self. Affirming the self reduces defensiveness, increases people's receptiveness to threatening information (Sherman & Cohen, 2006; Sherman, Nelson, & Steele, 2000), and activates positive, other-directed feelings, such as love and connection, which prompts individuals to transcend the self and self-esteem concerns (Crocker, Niiya, & Mischkowski, 2008).

Self-affirmation may also be a useful strategy in reducing people's reactivity to anticipated threats. For example, participants who were preparing to take an exam were randomly assigned to a self-affirmation condition or to a control condition. While those in the control condition showed heightened epinephrine levels – an indicator of stress – from baseline to the academic exam, those who self-affirmed did not differ in their cumulative epinephrine levels across time. Findings were strongest among those who were highly concerned about negative college evaluation, suggesting that self-affirmation may be especially beneficial for those who are psychologically vulnerable (Sherman, Bunyan, Creswell, & Jaremka, 2009). Self-affirmation also reduces sensitivity to perceived threats in romantic relationships. Individuals with low self-esteem typically doubt their partner's positive regard following negative feedback, which motivates them to distance from their partners (Murray et al., 1998). However, this tendency is attenuated when low self-esteem individuals are given the opportunity to self-affirm (Jaremka, Bunyan, Collins, & Sherman, 2011).

Another way that individuals can change their perceptions of threat is to adopt different construals of the situation. According to Construal Level Theory (Trope & Liberman, 2010), people can construe an action in a general, abstract way (i.e., high-level construal) or a concrete, specific way (i.e., low-level construal). Several lines of research support the idea that adopting a psychologically distant, high-level construal can both buffer and change people's perceptions of social evaluative threat. For example, research on self-distancing suggests that individuals can either narrowly recount the concrete details of an experience from a self-immersed perspective, or from a self-distanced perspective by taking a broadened view of oneself and reconstruing experiences to make meaning and reduce emotional distress (Kross & Ayduk, 2011; Kross, Ayduk, & Mischel, 2005). Consistent with this idea, participants who recalled a depression experience and then adopted a psychologically distanced (vs. immersed) perspective on this experience showed greater re-construal of the event and in turn, reported less depressed mood (Kross & Ayduk, 2008). Thus, how people construe an event – as distant versus close – can alter the way they perceive social evaluative threats in the environment.

Analyzing one's own feelings from a self-distanced perspective not only shapes people's psychological reactions, but can impact them on a physiological level, as well. Indeed, people who spontaneously engage in self-distancing – or are instructed to reflect on their feelings from a self-distanced perspective – show less cardiovascular reactivity and quicker

recovery to baseline reactivity when analyzing their feelings, compared to those who use a self-immersed perspective (Aydük & Kross, 2008, 2010). Imagining the distant future can also help to alleviate feelings of social pain after social exclusion versus imagining the near future (Yanagisawa et al., 2011).

People's construals of situations can also affect their future outcomes. As Yeager et al. (2016, p. 375) noted, "*By changing initial construals...psychological interventions can set in motion recursive processes that alter students' achievement into the future.*" Along these lines, Walton and Cohen (2011) implemented a social-belonging intervention to reduce perceptions of threat on a university campus by framing social adversity as common and fleeting. Over the next three years, this brief intervention increased Black students' grade point average and reduced the minority achievement gap by half. Importantly, this performance boost was mediated by subjective construals, such that Black students in the intervention condition were more likely to perceive social adversity as transient and viewed belonging as something to be developed over time through effort, rather than being out of one's control.

Other researchers have emphasized the importance of intervening at the level of people's appraisals of the environment to increase the likelihood of future positive outcomes (Cohen & Sherman, 2014; Walton, 2014; Yeager & Walton, 2011). In one study, participants were told that arousal actually improves performance, or were not told this information before taking a standardized math test. Those who reappraised their arousal as beneficial to their performance did better on the test both in the lab and one to three months later in taking the actual GRE (Jamieson, Mendes, Blackstock, & Schmader, 2010).

Mindset interventions also involve individuals reconstruing events or situations to promote growth and development. Students who were exposed to information endorsing a growth mindset of intelligence – the belief that intelligence is malleable and can be improved and strengthened with practice and effort – showed better academic outcomes than those who adopted a fixed mindset – the belief that intelligence is static and unchanging (Dweck & Yeager, 2019; Yeager et al., 2019). Growth mindsets motivate students to pursue learning and to persist in spite of setbacks and failures (Walton & Wilson, 2018); they show greater motivation to learn when they construe their educational experiences as having the potential to develop their abilities (Dweck, 1999, 2006), they feel safe and connected to others (Cohen, Garcia, Apfel, & Master, 2006; Stephens, Hamedani, & Destin, 2014; Walton & Cohen, 2007), and perceive

meaning and value from their efforts (Hulleman & Harackiewicz, 2009; Yeager et al., 2014). Results of two recent meta-analyses found that the average effect of growth mindset interventions is fairly small, but for at-risk students, the average effect on academic achievement is moderate (Macnamara & Burgoyne, 2022; Burnette et al., 2022; see commentary by Tipton et al., 2022 for a discussion of heterogeneity and meta-analytic approaches).

8.2.2 Relational level

Interventions that focus on changing people's construals of threat can be found at the relational level, as well. For example, an affectionate touch intervention buffered the effects of attachment anxiety on romantic jealousy (Kim, Feeney, & Jakubiak, 2018). This intervention is likely to have altered how anxiously attached individuals construed their partner's thoughts, feelings, and motivation, compensating for negative assumptions that anxiously attached people usually make. Even receiving touch outside of close relationships, such as receiving a handshake from a negotiation partner, leads to greater expectations of cooperative intent, which increases people's tendency to act cooperatively with their partner to maximize joint outcomes in deal-making tasks (Schroeder, Risen, Gino, & Norton, 2019).

As another example, research on sexual motivation finds that when individuals focus on negative self-focused cues during sex with their partner, such as feelings of distraction or boredom, they report lower relationship and sexual satisfaction. On the other hand, individuals who are communally motivated focus more on positive partner cues during sex, such as feelings of closeness and feeling desired by their partner, which increases sexual and relationship satisfaction (Impett, Muise, & Harasymchuk, 2019). In addition, due to an assumed similarity (or "projection") processes, those with high communal motivation believe that others are communally motivated toward them (Lemay et al., 2007), which likely serves as a source of psychological safety. Such findings suggest that reconstruing actions, expectations, and motives in relational contexts can diminish perceptions of threat and increase perceptions of psychological safety.

Reconstruing conflict in relationships may also prevent declines in relationship quality. For example, Finkel, Slotter, Luchies, Walton, and Gross (2013) conducted a longitudinal study in which married couples were assigned to write about a conflict with their partner from the psychologically distanced perspective of a neutral third party who wanted the best for all involved; individuals, in turn, felt less distressed and happier in their marriage over time, compared to a control condition who did not

receive this appraisal intervention. As another example, having a “destiny” mindset in relationships – the fixed belief that romantic partners are either meant for each other or not – predicts more negative reactions to relationship conflict and more avoidance coping in response to relationship stressors. In contrast, having a growth mindset – the belief that successful relationships require hard work, effort, and that problems can be overcome – predicts less negative reactions to conflict and better relationship-maintaining coping strategies (Knee, 1998; Knee, Patrick, & Lonsbary, 2003). Thus, one way to change perceptions of social evaluative threat in interpersonal contexts is to change people’s lay theories of relationships so that individuals view conflicts as opportunities to learn and grow together as a couple, rather than an indicator that their relationship is doomed.

In terms of self-esteem, Murray et al. (2005) found that people with low self-esteem felt more secure in their partners’ positive regard and commitment when they thought about their own strengths or the faults of their partner. By construing themselves and their partners in these ways, low self-esteem individuals were able to put their partners within psychological reach and felt less inferior and threatened by doing so. Encouraging individuals to construe their romantic partner’s compliments abstractly (i.e., reflecting on the meaning and significance of those compliments) also led low self-esteem individuals to feel more positively about the compliments, themselves, and their relationships, which persisted two weeks later (Marigold, Holmes, & Ross, 2007).

Enacting prosocial behaviors may further serve as a social evaluative threat intervention. People typically endorse lay theories that prosocial behaviors will elicit positive evaluations from others (Lemay & Muir, 2016). Thus, those who enact prosocial behaviors tend to believe that they are viewed as prosocial, and this positive meta-perception serves as a source of confidence in their partner’s satisfaction, commitment, and positive regard (Lemay & Muir, 2016; Lemay, 2014). People who believe they are viewed as helpful and caring, for example, tend to believe they are valued as relationship partners. Thus, interventions that promote prosocial behavior may help to counter social evaluative threat not only for intended recipients of the behavior, but also for those who enact the behavior, as it can serve as a source of positive meta-perceptions.

8.2.3 Collective level

By reconstruing potentially stressful interracial interactions as opportunities to learn and grow, individuals can reduce social evaluative threat concerns

and reap the benefits of shifting their mindset. Applied to the group level, individuals can reconstrue how they think about their ingroup versus outgroup to improve intergroup perceptions and relations. For example, both Black and White individuals often fear they will be rejected by the outgroup during interracial interactions due to their group membership (Shelton & Richeson, 2005; Vorauer et al., 2000; Vorauer, Main, & O'Connell, 1998). White individuals may also be concerned that outgroup members will evaluate them negatively, such as being prejudiced or close-minded (Goff, Steele, & Davies, 2008; Vorauer & Kumhyr, 2001), and Black individuals may be concerned about whether they will be negatively evaluated by White people during interracial interactions, such as being negatively stereotyped or discriminated against based on their group membership (Branscombe et al., 1999; Mendoza-Denton et al., 2002).

One way to alleviate concerns of rejection from the outgroup is to have individuals think that a close friend of theirs feels positively toward and enjoys interacting with members of the outgroup (Shelton & Richeson, 2005). Other strategies include personalizing outgroup members so they are viewed as individuals and recategorizing groups to reduce the boundaries between ingroup and outgroup to create a superordinate, inclusive identity (Dovidio & Gaertner, 1999; Hewstone, 1996; Pettigrew, 1998). This recategorization process can foster communal interracial relationships, including care for interracial friends and romantic partners' welfare, as well as confidence in their reciprocated care (Lemay & Ryan, 2021). Hence, recategorization may provide a safety cue for both members of interracial relationships.

Along these lines, perspective-taking with outgroup members is another way to shift people's construals to merge the self with the outgroup, thereby increasing feelings of empathy and prosocial behavior (Todd & Galinsky, 2014). Consistent with this idea, participants who adopted the perspective of a Black target showed more positive automatic racial evaluations and more approach-oriented nonverbal behaviors during an interracial interaction than those who did not engage in perspective-taking (Todd, Bodenhausen, Richeson, & Galinsky, 2011). Goff et al. (2008) further found that White participants who were assigned to adopt a learning goal (vs. no goal) during an interracial interaction felt that the interaction was less evaluative and were buffered from the negative effects of stereotype threat. Similarly, Green, Wout, and Murphy (2021) found that Black individuals who adopted learning (vs. performance) goals expected a more positive interaction with a White partner who had a racially homogenous (vs. diverse) network of friends.

8.3 Intervention #3: Increase perceived social support to cope with threat

Finally, interventions can help people cope with the negative impacts of threats by drawing upon social support – i.e., the perceived availability of tangible or psychological resources from others that enhances one’s ability to cope with negative, stressful events. Social support is one of the most robust predictors of psychological and physical health outcomes, including higher self-esteem (Harter, 2003), improved cardiovascular, endocrine, and immune functioning (Cohen, 2004; Uchino, 2006, 2009; Uchino, Cacioppo, & Kiecolt-Glaser, 1996), and lower mortality (House, Landis, & Umberson, 1988).

8.3.1 Individual level

At an individual level, people may benefit from subjective perceptions of having supportive relationships, regardless of whether one actually receives specific acts of support from others (Uchino, 2009). Notably, social support can vary in terms of visibility. Visible support is direct and observable by recipients, whereas invisible support is indirect and not readily apparent or interpreted as help by recipients. Research to date suggests that invisible support, compared to visible or no support, is effective in reducing distress from an anticipated stressor (Bolger & Amarel, 2007; Bolger, Zuckerman, & Kessler, 2000; Zee & Bolger, 2019), in decreasing cardiovascular reactivity (Kirsch & Lehman, 2015), and improving psychological outcomes, such as feelings of vigor (Shrout, Herman, & Bolger, 2006).

Whereas visible support often undermines self-efficacy, especially in individualistic cultures, invisible support may be beneficial because it enhances people’s belief that they have the internal resources to cope with the demands of the situation (Bolger & Amarel, 2007). Of relevance to the current model, the benefits of invisible support usually emerge in situations that involve evaluation, such as giving a speech (Bolger & Amarel, 2007), studying for a high-stakes exam (Bolger et al., 2000), or identifying areas of self-improvement (Howland & Simpson, 2010). It is noteworthy that most of these previous studies focused on samples from individualistic cultures, such as the U.S., which emphasize independence and validation of positive internal attributes. In collectivistic cultures that value interdependence, such as East Asian cultures, perceived emotional support is beneficial to subjective well-being because it reinforces the connections that people have with close others (Uchida, Kitayama, Mequita, Reyes, & Morling, 2008). However, it is also the case that Asians and Asian Americans may be

more hesitant to directly ask for support from close others compared to European Americans, because disclosing one's distress may be viewed as incurring relationship costs (Kim, Sherman, & Taylor, 2008; Taylor, Sherman, Kim, et al., 2004).

Individuals are likely to vary in how much they benefit from different types of support based on their expectations and motivations and at which stage they seek support. For example, research on regulatory-mode theory – how people approach situations to achieve goals – suggests that invisible support may be more effective than visible support when participants have an assessment orientation (i.e., when they are inclined to compare different goals and analyze their options to attain certain standards). On the other hand, when recipients have locomotion motivation (i.e., are motivated to take action), visible support is more effective than invisible support (Zee, Cavallo, Flores, Bolger, & Higgins, 2018).

Such findings suggest that individual differences in underlying motivations can influence when visible or invisible support may be most beneficial for responding to social evaluative threats and facilitating goal-directed behavior. The timing of support may also matter in determining whether visible or invisible support is beneficial. For example, when people anticipate a social evaluative threat in the environment, they may benefit from invisible support, because receiving such support does not threaten their personal competence or self-efficacy. However, once the threat has occurred, people may benefit more from receiving visible support that helps them cope and recover from the negative event (Zee & Bolger, 2019).

8.3.2 Relational level

At the relational level, support is often enacted by relationship partners or another person who provides help or assistance in response to a specific stressor or need (Zee & Bolger, 2019). In particular, relationship partners can signal responsiveness – by directly expressing care, concern, and validation toward their partner – to help reduce social evaluative concerns (Maisel & Gable, 2009). For example, being the recipient of high-quality listening has been shown to reduce people's feelings of loneliness after disclosing past experiences of social rejection, by increasing feelings of relatedness and autonomy (Itzhakov, Weinstein, Saluk, & Amar, 2022). Along similar lines, when recipients perceive support in their relationship, they report more positive mood, self-esteem, and feelings of closeness with their partner (Collins & Feeney, 2004; Sullivan, Pasch, Johnson, & Bradbury, 2010). Individuals who receive more nurturing, supportive help

(vs. critical, invalidating responses) from their partner report greater relationship quality and success at self-improvement efforts (Overall, Fletcher, & Simpson, 2010). Even individuals with an avoidant attachment style report higher autonomy and commitment to their personal goals after receiving invisible support from their romantic partner during a dyadic discussion (Girme, Overall, & Hammond, 2019).

Notably, whereas visible emotional support (i.e., support through encouragement, reassurance) led recipients to perceive greater support from their partners when discussing a personal goal that caused high emotional distress, invisible support led to greater long-term personal goal achievement (Girme, Overall, & Simpson, 2013). Such findings suggest that visible support may be most beneficial when recipients want to feel validated and cared for when feeling distressed in the short-term, while invisible support may be effective when anticipating a threat or supporting people's goals over time. Other findings, however, suggest that perceptions of support received from partners are associated with improvements over six months in both personal well-being (i.e., affect, coping, self-efficacy) and relationship quality (i.e., commitment, communal motivation, relationship satisfaction, positive regard for partners) (Lemay & Neal, 2014).

Other studies find that perceptions of partners' support for personal and relationship goals (suggesting visible support) are associated with more positive and less negative affect in dating relationship over several weeks, as well as greater accomplishment of goals over time (Brunstein, Dangelmayer, & Schultheiss, 1996). Moreover, research on behavioral affirmation in relationships suggests that people grow closer to their ideal images of themselves when they perceive that their partners behave toward them in ways that are consistent with those idealized images (Drigotas, Rusbult, Wieselquist, & Whitton, 1999). Thus, even visible support for goals may have benefits over time. In short, receiving support, whether visible or invisible, may be beneficial to recipients when it is responsive to their needs and thus, truly supportive (Maisel & Gable, 2009).

8.3.3 Collective level

At the collective level, social support can be conveyed by expressing compassion, empathy, or prosocial behavior toward ingroup or outgroup members. For example, individuals are inclined to provide support to ingroup members – those with whom they share a common social identity– because doing so contributes to the interests of the collective self (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Indeed, defining

oneself in terms of the same social category as others facilitates the provision and receipt of support via shared expectations of support, empathy, trust, and communication (Haslam, Reicher, & Levine, 2012). Studies on intergroup contact further suggest that when members of different groups interact with one another, they report less intergroup anxiety (Page-Gould, Mendoza-Denton, & Tropp, 2008; Paolini, Hewstone, Cairns, & Voci, 2004), more positive attitudes toward outgroups, and lower prejudice (Pettigrew & Tropp, 2006).

Positive intergroup interactions can thus be viewed as a type of support in which individuals from different groups feel valued and understood, thus reducing their perceptions of social evaluative threat in the environment. These interactions also provide opportunities for people to support the welfare of outgroup members, which can also reduce threat. Along these lines, past research suggests that communal motivation within interracial relationships is associated with greater perceived similarity and recategorization (i.e., viewing the self and partner as belonging to the same group) over time (Lemay & Ryan, 2021).

Group members are especially likely to benefit from visible or invisible support if they are members of disadvantaged groups. For example, individuals with marginalized or negatively stereotyped social identities may experience day-to-day discrimination or “microaggressions” in which they feel devalued or low belonging in an environment based on their group membership (Sue et al., 2007). To cope with these social evaluative threats, individuals can draw upon visible support, such as joining a support group, using services offered by the community, or seeking advice from close others, institutional authorities, or professionals (Sue et al., 2019). Supportive groups that affirm one’s identity may help people maintain a positive social identity even in the face of social evaluative threats (Ethier & Deaux, 1994).

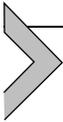
Individuals from marginalized groups can also benefit from receiving visible support to overcome barriers or obstacles to their success. For example, academic bridge and enrichment programs, mentoring, and opportunities for positive interactions with faculty and students can provide visible forms of support that contribute to higher science self-efficacy, science identity, and commitment to a STEM career (Harper, 2010; Museus & Liverman, 2010). Given that college is a time of transition and uncertainty when students often doubt their abilities and group memberships (Tinto, 1993), creating academic and social support systems may be especially important for underrepresented students who are navigating

academic environments in which they experience heightened vulnerability to social evaluative threats, such as in competitive STEM settings (Hurtado, Newman, Tran, & Chang, 2010).

Visible support may serve two distinct functions in response to social evaluative threat for members of certain groups. First, such support may serve as a source of perceived safety in the environment, thereby reducing the experience of social identity threat. Second, visible support may serve to maintain psychological well-being in the face of social evaluative threat by facilitating coping with the threat. For example, visible support may help motivate individuals to continue pursuing important goals, despite an impulse to cope with the threat by abandoning such goals. On the other hand, invisible support, which may not explicitly provide a subjective sense of safety, may primarily function to provide people with resources needed to cope with threats to their social identity, for example.

Another way that marginalized or minoritized group members can draw upon social support to cope with social evaluative threats is to derive meaning and strength from their group differences. For example, Stephens et al. (2014) conducted a brief intervention study in which first-generation college students listened to senior college students share stories of how they succeeded in their transition to college. For those assigned to the difference-education condition, the stories emphasized how students' different social class backgrounds could be viewed as strengths that helped them navigate college and overcome difficulties and obstacles. In the control condition, students also learned about obstacles and strategies for succeeding in college, but there was no mention of social class backgrounds.

Results showed that students in the difference-education condition reported greater social fit, academic identification, pursued more campus resources, and showed better academic outcomes than those in the control condition. Moreover, highlighting the uniqueness of one's social class background served as a source of internalized support that benefited first-generation students two years later: students who were exposed to the difference-education intervention and later put in a social evaluative threat situation (i.e., giving a speech that would be recorded and viewed by others) were more likely to mention their social class background in the speech and showed higher anabolic-balance reactivity – an indicator of physiological thriving – compared to first-generation students in the control condition (Stephens, Townsend, Hamedani, Destin, & Manzo, 2015). In sum, drawing upon social support – whether it be visible or invisible or mere reminders of one's connection to others or an ingroup – may help people cope with social evaluative threats when they occur.



9. Future research directions

9.1 Social evaluative threat versus other types of threat

The current model generates several paths for future research. First, building upon prior work examining physiological reactions ([Dickerson & Kemeny, 2004](#)), researchers could investigate whether cues of social evaluative threat differ from other types of threat in predicting particular patterns of physiological reactivity, cognitive appraisals, and emotional reactions indicating perceptions of threat. Do these reactions differ reliably from experiencing other types of threat, such as threats to certainty, meaning, or mortality? And do reactions to types of threat differ as a function of whether the threat occurs at the level of the individual, relational, or collective self? It remains to be seen whether threats that do not directly implicate the self (e.g., threats to meaning, certainty) lead to the same reactions as threats involving the self.

On a related note, researchers could examine connections between cues of physical threat and social evaluative threat. According to [MacDonald and Leary \(2005\)](#), the social and physical pain systems evolved such that social exclusion and rejection lead to similar cognitive, affective, and behavioral responses as physical pain. Thus, perhaps even cues of physical pain or threat might activate social evaluative threat and vice-versa, with implications for intervention. For instance, [DeWall et al. \(2010\)](#) found that acetaminophen, a medication often used to reduce physical pain, reduced people's neural and behavioral responses related to the pain of social rejection. Such findings are consistent with the idea that overlap exists in the neurobiological systems underlying both physical pain and social pain ([Eisenberger, Lieberman, & Williams, 2003](#)). Thus, interventions that improve physical pain tolerance may potentially be useful for mitigating responses to social evaluative threat.

9.2 Testing moderators of threat perception

Another direction for future research is to empirically test whether situational factors amplify perceptions of and reactions to threat at the individual, relational, and collective level. For example, although prior research has demonstrated that people generally react more strongly to events that are construed as spatially and temporally closer, the role of these construals in moderating responses to individual, relational, and collective social evaluative threats has not been systematically examined.

Researchers could also investigate whether perceptions of threat differ as a function of a broader set of individual differences in expectations and motivations to detect threat. For example, whereas past studies often focused on either self-esteem, attachment styles, rejection sensitivity, or controlled for these variables in analyses, future studies could assess multiple constructs within a single study to see whether they lead to the same or different responses to threat. If these constructs lead to similar outcomes, such findings would suggest that expectations and motivations to detect threat, broadly speaking, shape responses to threat and pose a vulnerability for individuals who possess a certain prototype, rather than being limited to a specific individual difference variable.

Alternatively, new measures could be developed to assess the expectations and motivations that, we expect, underlie the moderating effects of these various constructs. These measures could then be used to test the possibility that these constructs moderate the effects of social evaluative threats through a similar pathway. Relatedly, future research could also test whether contingencies of self-worth have moderating effects on responses to threat because of these expectations and motivations to detect threat, or whether they reflect yet a third moderating dimension, perhaps reflecting psychological investment in the social evaluation.

9.3 Culture and social evaluative threat

Future research could also examine moderators beyond the ones discussed in the current model, such as the role of cultural factors and life changes in responding to social evaluative threats. For example, people in individualistic cultures, such as the U.S. and Western Europe, prioritize being independent, unique, and separate from others; they behave in reference to their internal thoughts, feelings, and actions, and are motivated by self-enhancement (Kim & Markus, 1999; Markus & Kitayama, 1991). For these individuals, social evaluative cues that involve threats to self-efficacy or competence may be especially threatening to their self-esteem.

People in collectivistic cultures, such as East Asia, prioritize interdependence, fitting in, accommodating to others' needs, and maintaining harmonious relationships with others. For these individuals, social evaluative cues that involve real or imagined threats to relational or group harmony and inclusion may be especially potent. Indeed, research suggests that Asian American (AA) college students report higher level of social anxiety symptoms than European American (EA) students (Okazaki, 1997). Compared to EA students, AAs report more socialization experiences

involving shame in which their parents used love withdrawal and guilt to increase compliance; accordingly, AAs show heightened concerns about losing face in social interactions and are motivated to detect and prevent negative attention from others (Lau, Fung, Wang, & Kang, 2009).

In other contexts, however, people in collectivistic cultures may be less reactive to social evaluative threats. Compared to collectivistic cultures, individualistic cultures such as the U.S. tend to be more relationally mobile – people have ample opportunity and freedom to form new relationships and sever existing ties. In such cultures, people may be more concerned about acquiring and retaining desirable relationship partners, whereas inhabitants of cultures with low relational mobility focus more on maintaining interpersonal harmony (Kito, Yuki, & Thomson, 2017). Due to an elevated risk of interpersonal rejection (partners could easily leave them), individuals living in relationally mobile cultures may be more concerned with social evaluative threat, while those living in less mobile cultures may be concerned with social evaluative threat because of their implications for relationship quality.

9.4 Developmental perspectives

From a lifespan perspective, socioemotional selectivity theory suggests that as people grow older, they recognize that time is running out and adjust their goals and priorities to prioritize positive over negative social information, recover more quickly from threats, and engage in effective coping strategies (Carstensen, Isaacowitz, & Charles, 1999). At an attentional level, older adults show a bias toward noticing and remembering positive (vs. negative) social information in the environment (Mather & Carstensen, 2005). Older adults selectively reduce their social networks to focus more of their time and energy with emotionally close partners and derive satisfaction and meaning in life from their close relationships (Carstensen et al., 1999). Linking these ideas to the present model, older adults may be less likely to notice or be affected by negative social evaluative threat cues, especially if such cues do not involve emotionally close others.

Research also suggests that older adults show a faster return to positive emotional states following negative mood states (Carstensen, Pasupathi, Mayr, & Nesselrode, 2000). For example, older, married couples show less physiological reactivity when discussing a relationship conflict than middle-aged couples (Levenson, Carstensen, & Gottman, 1994) and show less anger, disgust, and more affection toward their partner (Carstensen, Gottman, & Levenson, 1995) even after accounting for the severity of the relationship conflict. In fact, across many

contexts, older adults exhibit greater distancing and positive reappraisal strategies to cope with stressors than younger people (Folkman, Lazarus, Pimley, & Novacek, 1987).

On the other hand, early to middle adolescence is characterized by heightened awareness of one's subjective status relative to others and increased sensitivity to social evaluative cues (Somerville, 2013; Steinberg & Morris, 2001). Compared to children, adolescents show elevated levels of cortisol in laboratory-based social stressor tasks (Stroud et al., 2009), and after experiencing negative social feedback in a virtual ball-toss paradigm, adolescents report greater drops in mood and increased anxiety compared to adults (Sebastian, Viding, Williams, & Blakemore, 2010). Other research suggests that major life transitions, such as beginning college, may increase vulnerability to social evaluative threats due to increasing uncertainty about one's belonging and self-efficacy within that environment (Walton & Cohen, 2011). Thus, in addition to the moderators proposed in our model, developmental life stages or the experience of life transitions may be areas ripe for future study, to examine how people's attentiveness to social evaluative threat cues and their internal and behavioral coping responses to threat might differ.

9.5 Confined versus diffuse social-evaluative threats

Finally, future research could examine whether responses to social evaluative threats depend on whether those threats are confined to a specific level of self-definition or relevant to multiple levels. The more selves that are threatened, the more intense people's reactions to threat may be. For example, receiving failure feedback may threaten one's individual self; however, if one were to receive failure feedback that not only implicated their personal self but also, their relationship or group to which they belonged, this may exacerbate responses to threat. Consistent with this idea, research on double jeopardy suggests that individuals with dual-identities are especially vulnerable to experiencing threat based on their multiple group memberships. For example, women of color expect to be discriminated against based on their race *and* gender from a single cue of racial prejudice or sexism (Chaney et al., 2020). In one study, Black women, who possess two subordinate social identities (i.e., not being White, not being male) were evaluated more negatively when they performed poorly, such as making mistakes in an organizational setting, because being Black and being a woman are inconsistent with perceptions of leader typicality (Rosette & Livingston, 2012). Other studies find that

minority women experience more sexual harassment and ethnic harassment than majority men, minority men, and majority women (Berdahl & Moore, 2006).

While past work often focused on multiple group memberships, our model encourages researchers to consider the influence of the self across multiple levels of the self. For example, researchers could simultaneously assess aspects of the individual, relational, and collective self – such as self-esteem, contingencies of self-worth, attachment styles, and group identification or membership – to test for moderation of the effects of social evaluative threat on the outcomes of interest. Researchers could also design their manipulation or materials to examine commonalities and differences across these varying levels of self. For instance, if students were to receive negative feedback on a test, their responses to this social evaluative threat might depend upon whether the environment activates their individual self (e.g., receiving negative feedback via a computer program indicating low ability on the task), relational self (e.g., receiving negative feedback from the experimenter conveying that they did poorly on the task), or collective self (e.g., receiving negative feedback from the experimenter in the context of having one's group membership made salient).

Furthermore, in some cases, due to individual differences in the cognitive organization of self-relevant information, cues that seem confined to a single level of self-definition may evoke threats to multiple levels. The associations between self-representations in memory, including associations that traverse personal, collective, and relational levels (Reid & Deaux, 1996), may serve as conduits that allow a single event to threaten (or support) multiple levels of self-definition. Individual differences in these associations may serve as the basis for corresponding differences in threat responses. For instance, receiving criticism about one's appearance may exhibit a relatively muted threat response when appearance is relatively isolated in one's cognitive self-system (i.e., is not strongly relevant to, or associated with, other self-views). However, for those who believe that their value to their relationship partners and group members is based on their physical attractiveness, the same criticism may reverberate through the self-system, possibly causing a much stronger threat response because the feedback also incites relational and collective concerns.

By the same token, these associations may provide opportunities for interventions to improve psychological safety across multiples levels of self-definition. For instance, positive feedback regarding appearance may improve one's security in relationships and groups. Alternatively, these

Table 1 Principles and assumptions underlying conceptual model of social evaluative threat.

Principles	Underlying assumptions
(1) Cues that elicit social evaluative threat may call into question one's worth as an individual, a relationship partner, and/or a member of a particular group.	A given threat cue may be relevant to one or more overlapping aspects of the self.
(2) A common set of physiological, affective, and cognitive reactions serve as indicators of social evaluative threat.	Indicators of threat are observed and can co-occur at the individual, dyadic, and group levels.
(3) People cope with perceived social evaluative threat by responding with either approach or avoidance motivation.	Approach and avoidance tendencies may manifest as individual appraisals, relational behavior, and in response to group membership.
(4) Perceptions of threat and responses to threat may be heightened or constrained by situational features and differences in expectations and motivations.	Individual differences in expectations and motivations to respond to threat are based on perceived personal, relational, or group-based resources and prior experiences.

associations may serve as targets for intervention to reduce people's vulnerability to threats. As an example, an intervention might help people develop less contingent perceptions of interpersonal acceptance, thereby reducing the extent to which individual-level threats can spread to relational and collective levels.

10. Conclusion

The goal of this chapter was to provide an integrative account of the self, social evaluative threat, indicators of threat, and coping responses to threat (see [Table 1](#) and [Fig. 1](#)). By reviewing the literature in these areas, including our own research programs, our model offers a conceptual framework to elucidate how threat operates in social evaluative contexts at different levels of analysis, while also accounting for commonalities in experiences and responses to threat. By distilling threat into its essential

elements, our model both broadens and deepens understanding of how the self operates at multiple levels, with implications for studying the impact of interventions to reduce threat across these levels. Finally, our model opens the door to new research questions regarding distinctions between different types of threat, studying key moderators of threat across individual, relational, and group contexts, and considering cultural and developmental influences in how people perceive and respond to social evaluative threats over the lifespan and throughout the world.

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