



Analogies Offer Value Through the Struggle to Make Them Work: Making Sense of the Psychological Immune System

André Vaz^a, André Mata^a, and Clayton R. Critcher^b

^aCICPSI, Faculdade de Psicologia, Universidade de Lisboa, Lisboa, Portugal; ^bHaas School of Business, University of California, Berkeley, California, USA

Analogies are helpful at intuitively capturing complex concepts. Some have suggested that American society is a *melting pot* that has melded a diversity of people and cultures into something of a singular product. Others prefer the analogy of the *salad bowl*, a nod to multiculturalism that recognizes the maintenance of distinct cultural identities that coexist in forming a single entity. Such analogies have value not only because they provide a scaffold that helps recipients to understand the components of abstract concepts, but because they prompt questions as the recipient attempts to understand the parallel (*If America is a melting pot, what is the source of heat?*) Analogies are not facsimiles, and thus the inapplicability of some of the analogy base's attributes (*How can America be a salad bowl if the Earth's surface is concave?*) does less to challenge the metaphor than it does to highlight the natural scope of such rhetorical devices.

Through this lens, the value of the biological immune system as an analogy base for understanding the psychological immune system should be judged more by its potential to organize existing knowledge and inspire new questions than by skeptics' ability to identify gaps between the two. This commentary hopes to avoid this intellectually lazy trap. Before proceeding, we do acknowledge that Sedikides says he is doing more than drawing an analogy: "I do not consider biological immunity as an analogy or metaphor... I consider immunity, both psychological and biological, to be components of a coordinated, adaptive harm protection system" (pp. 197–198). And indeed, the psychological immune system's connection to the biological immune system is certainly less metaphorical than the self-enhancement motive's connection to eating (Sedikides & Gregg, 2008) or the self-enhancement/self-protection dynamic's similarity to the acceleration and deceleration of a car (Gregg, Sedikides, & Gebauer, 2011; see also Alicke & Sedikides, 2009; Sedikides & Strube, 1997). This is because the psychological immune system is posited to have the same ultimate goal as the biological immune system: to promote a healthy, well-functioning organism.

But Sedikides does appeal to the biological immune system as any apt analogy does: as a concrete base that organizes and structures understanding of the much more intangible psychological immune system (e.g., "Just as the biological immune system routinely manufactures leukocytes

for use against microbial invaders, the psychological immune system develops narratives to counter or negate self-threats", p. 206). It is simply that the analogy is drawn to elucidate the operation of two complementary systems with similar ultimate functions. At least for us, such parallels are useful in grounding a system that largely operates in the abstractions of the mind.

We begin by highlighting questions that arose from our efforts to fully embrace and play out the analogy. In so doing, we seek to clarify (and at times speculate on) the nature of the psychological immune system and thus the maladaptive traps into which it may fall. At that point, we turn to a consideration of the role of the interconnectedness of the self's structures, a topic of particular interest both in understanding current social trends and in explaining previous research that was not considered through the lens of ego defense. Finally, we close by considering how social perceptions fit within the project of self-enhancement. In the process, we identify a basic question that, to our surprise, decades of research on self-enhancement seem not to have addressed.

Understanding the Connection Between the Biological and Psychological Immune Systems

What does the psychological immune system monitor versus aim to gauge?

Several of the recent COVID-19 vaccines train the body to *monitor* for the spike protein on the virus's surface in an effort to *gauge* the presence of the virus. Diabetics who use a glucometer *monitor* the numbers on their readers' display in an effort to *gauge* their blood glucose levels. In each case, the symptom is ultimately dissociable from the underlying state. The mRNA vaccines encourage production of the spike protein but not the virus itself; glucose readers can malfunction. What one thus hopes to monitor (to decide if supplemental action is necessary) is an imperfect guide to what one is ultimately trying to gauge.

If the psychological immune system aims to achieve psychological homeostasis, what does this mean in terms of what it monitors, and what it is ultimately trying to gauge? What is the symptom, and what is the real threat? Sedikides describes psychological homeostasis as modulating or

reducing negative affect, achieving emotional equilibrium, and helping with the desire to achieve the most favorable emotional life that people can attain. This is a provocative claim: Is the psychological immune system merely a mood maintenance system, not one that is on the lookout for self-evaluative threat in particular?

At its core, we consider this a question of whether the psychological immune system looks to James's (1950 [1890]) "I" or "me." The "I" is not merely a volitional executive, but is accompanied by affectively rich phenomenological experience (Gregg et al., 2011). When people feel paralyzed by crippling anxiety or inspired by the promise of future possibility, the "I" experiences a weight or boost as it navigates its environment. In contrast, the "me" is an object of evaluation, a catalog of resources that can serve the self and its goals. Determining that one lacks the vocal range to land a recording contract or that one's writing can deftly illustrate through relevant examples both entail conclusions about the "me."

We suspect that the psychological immune system is largely attentive to and thus triggered by the phenomenological experience of the "I," but that the self's (understandable) egocentrism means that analyses of the resources of the "me" disproportionately guide the "I"'s general emotional state. On first consideration, such a conclusion may seem incompatible with previous researchers' identification of self-enhancement (held in check by the reality constraints of self-assessment; Trope, 1980, 1986) as the paramount motive with which other human motives must not conflict (Sedikides, 1993; Sedikides & Gregg, 2003). This primacy of self-enhancement might seem to elevate self-evaluation to a special status. But if the psychological immune system *monitors* one's present emotional state, what do such states aim to *gauge*?

Life events inspire emotions to the extent that they make contact with one's goals. Of course, emotions are experienced not merely when people achieve or fail to achieve their goals, but when their pathways to future goal fulfillment are facilitated or blocked. Lottery winners experience elation before any of their jackpot is spent, much less hits their bank accounts. And people's life plans and pursuits almost always require the involvement of, and thus a look to, the self's own resources. This likely explains why self-evaluation is a hefty contributor to emotional well-being. Furthermore, the self's ability to mentally time travel allows it to bask in its previous successes and fret over its past defeats. Of course, such previous episodes often portend future successes and failures, both due to what they suggest about the self's abilities and due to the lingering reputational consequences of previous endeavors.

Accepting that the psychological immune system is attuned to how one feels instead of how one feels about self-aspect X helps to explain why there is so much substitutability between different means of ego repair (Gregg et al., 2011; Sherman & Cohen, 2006; Tesser, 2000). Furthermore, it would explain why apparent needs for self-esteem repair can be addressed by alternate emotionally comforting routes (e.g., attachment and worldview defense;

Hart, Shaver, & Goldenberg, 2005) that relate to interpersonal and societal resources that may aid in pursuing one's goals. That is, addressing the self's feelings of frustration, disappointment, and anxiety about its ability to pursue its own needs does not require that the self be personally equipped to address them. As a false alarm blares, one may feel panic at not knowing how to shut it off. But we suspect that this anxiety subsides whether one possesses the resources and knowledge to turn it off oneself or whether a knowledgeable other appears to deal with the issue.

Emotional states are sensitive to what is currently focal. And to be clear, this is where the self and its resources do take center stage. Before the "I" can act, it often needs to consult the "me"; it is, necessarily, always nearby. Because the self is typically first on the scene to solve its own problems, it is understandable why there has seemed to be such a close connection between self-evaluation in particular and the psychological alarm bells that suggest the self's future comfort, success, and fulfillment is in jeopardy. There is not always an able aide waiting in the wings.

But the attentional allure of the negative—combined with the mind's ability to easily transport itself from the here and now to consider the past and the future (Liberman & Trope, 2008; Trope & Liberman, 2010)—exacerbates a flaw of the psychological immune system.

It does not adopt a dispassionate, balanced perspective of the state of the self and its life pursuits, but can enter into a ruminative spiral (Martin & Tesser, 1996; Mikulincer, 1989), one that is particularly counterproductive when consciousness's capacity to relive the disappointments and embarrassments of the past can lead it to become stuck there. Losing one's voice in the middle of a speech sounds alarm bells not only in the moment, but for the subsequent days in which one mentally replays this event over and over. And given that people tend to overblow the reputational implications of one-off failures (Moon, Gan, & Critcher, 2020; Savitsky, Epley, & Gilovich, 2001), the psychological immune system can be inspired to declare war after what was only a mild dust-up.

Sedikides seems to argue that many of the apparent faults of the psychological immune system are simply inevitable shortcomings. But a tolerance for a system's flaws should not be confused with a passive acceptance of them. The fact that a home's smoke detector will occasionally be activated by safe, contained cooking activity is not a reason to rip it from the ceiling, but it may be a reason to start using one's vent hood. And it is here—in considering the self's response to psychological alarm bells—that we urge further analysis of what would constitute more or less adaptive responses to threat instead of simply accepting that the system's functioning is generally adaptive. If the psychological immune system is ultimately aiming to gauge whether one can navigate one's world effectively, then one should prioritize means of mood repair that will aid with this goal. The smoke detector loses its adaptive function if homeowners' response to it is to search for their noise-canceling headphones. We thus have less faith that the psychological immune system—by monitoring emotional states instead of the underlying

capacity for able goal pursuit that such states can reflect—can be trusted to operate optimally.

If the psychological immune system is ultimately managing the emotions of an inwardly focused “I,” there are three general routes it can take. One is to distract the “I,” keeping it from wallowing in its own shortcomings and setbacks. A captivating fictional storyline can reduce self-awareness, freeing it from ego threat (Heatherston, Herman, & Polivy, 1992). Drugs and alcohol can serve as temporary salves that soothe the debilitating discomfort of focusing on the self and its imperfections (Baumeister, 1991). But the self is only temporarily spared; if the threatened identity theme continues to have relevance, then the threat is likely to reemerge.

A second approach is to put the threat in proper context. Leaning into a vanity mirror to carefully inspect a surfacing pimple quite literally takes the rest of one’s dazzling (or at least less flawed) complexion out of view. Self-affirmation exercises, which serve to remind the self of non-threatened identity themes, serve to realign one’s feelings of self-worth with one’s broader dispositional self-esteem instead of the specific, threatened domains that may be dominating one’s attention (Critcher & Dunning, 2015). After all, identity themes rise and fall in their construct accessibility (Sedikides & Skowronski, 1990), and the attentional allure of the negative means they can dominate one’s momentary self-views. This is why self-affirmations that merely maintain people’s focus on the threatened self-aspects tend to be ineffective in reducing defensive responses or even produce backfiring effects (Blanton, Cooper, Skurnik, & Aronson, 1997; Sivanathan, Molden, Galinsky, & Ku, 2008). Effective self-affirmations offer a broader perspective on a threat.

But what happens when the movie ends, the high wears off, the red bump comes back into view, and the alarm bells start ringing once again? Well-timed distractions and affirmations may arrive at the proper moment to facilitate adaptive action with regard to a threat (e.g., to muster the wherewithal to expose oneself to threatening health information; Sherman, Macrae, & Bodenhausen, 2000), but eventually, threats that connect to one’s future life goals will again dominate one’s attention and thus emotions. Few suspect that a night out on the town to cheer up one’s mate means that the trauma of his breakup will not be relived. Instead, a third manner of response will become necessary: narratives that address the recurring threat more directly.

But here, we distinguish two types of narratives. Some reflect friendly interpretations of truths. But others are not tethered to reality. One could accept that patently inaccurate narratives are inevitable consequences of a psychological immune system that—in the aggregate—aids with psychological adjustment. Instead, we urge caution in accepting the bad with the good. When they supply inaccurate information on which the “I” may act in the future, false narratives offer short-term reprieves that do not redirect one from continuing to walk toward a fire. Reassuring oneself that everyone has fires that they must navigate can be a way to both pacify the self while plotting how to avoid getting burned. Even if the psychological immune system yields optimal outcomes on balance, to the extent that threats

provide information that can guide how to navigate toward one’s current or future goals, we argue the system should be managed to engage in reality-based reappraisal instead of reality-denying distortion.

Managing Versus Tolerating the Psychological Immune System’s Responses

We embrace the idea that adaptive systems sometimes fail to yield normatively accurate output. As error management theory describes, this can result from the costs to inaccuracy being asymmetric, greater on one side of accuracy than another (Haselton et al., 2009; Haselton & Buss, 2000; McKay & Efferson, 2010). In other cases, people face judgment contexts that are characterized by too much complexity or uncertainty for human computational capacities to perfectly manage. As a result, it can be wise to adopt simplifying heuristics, even if such rules of thumb can lead one astray in certain unrepresentative environments (Artinger, Petersen, Gigerenzer, & Weibler, 2015; Todd & Gigerenzer, 2012). Visual acuity really is a good cue to stimulus distance, even if a dense fog can throw off one’s internal calculations.

And indeed, there is good evidence that those with positive self-views—even those who see themselves as better than what objective criteria would identify as accurate—show signs of being psychologically well-adjusted (see Dufner, Gebauer, Sedikides, & Denissen, 2019, for a recent meta-analysis). That said, it would be premature to conclude that the intrapsychic benefits of the psychological immune system emerge *because* that system promotes self-views that are untethered from reality. Furthermore, we think that inaccurate self-views need not merely be tolerated as unavoidable side effects of maintaining psychological homeostasis. Instead, we argue that because the psychological immune system has many ways in which it can engage in self-evaluative and thus emotional repair, then people should (even if they naturally do not) prioritize pathways that allow for positive or ego-sparing *evaluative spin* while maintaining an accurate hold on the concrete details about reality.

When a stranded hiker surveys how much water is left on his person and the distance to the nearest water source, these are concrete details he needs to evaluate accurately. An oasis mirage may temporarily alleviate feelings of mortal dread, but walking toward the apparition will do little to slake his thirst. Such a hiker would likely show many of the signs of psychological adjustment with which self-enhancement is associated (e.g., positive affect, subjective well-being; Dufner et al., 2019; Kurt & Paulhus, 2008), but his situation is akin to that of a severe diabetic who has lowered her blood sugar levels by mangling her glucose meter’s dial. An objective appreciation of one’s resources, predicaments, and limitations facilitates realistic goal setting and pursuit (Oettingen & Gollwitzer, 2001). On the other hand, as our hiker surveys the amount of water remaining in his canteen, he may see it as either half full or half empty. Each frame is equally correct and varies only in its evaluative spin. A rosy construal may buoy his spirits without supplying false information on which to base his plans. After all, positive

self-views may facilitate persistence in the face of adversity even as they do little in and of themselves to directly promote superior performance (Baumeister, Campbell, Krueger, & Vohs, 2003; Tenney, Logg, & Moore, 2015).

We suggest the psychological immune system works best when its efforts at emotional homeostasis do not require ignoring, misremembering, or distorting concrete information (Sedikides, Green, Saunders, Skowronski, & Zengel, 2016; Sedikides & Green, 2000; Shepperd, 1993) *that can be used to pursue one's future goals*. Fortunately, it is concrete information, not evaluative spin, that it is crucial to get right. A dinner party host may burn the roast and still convince themselves that the evening was a net positive ("That scrumptious apple cobbler ended up making up for everything!") But convincing himself that the roast was actually a roaring success means that history is bound to repeat itself. This may explain why self-enhancement, especially over the long term, seems not to carry the same benefits in others' (like one's repeat dinner guests') minds as it does one's own (Bonanno, Rennie, & Dekel, 2005; Colvin, Block, & Funder, 1995; Dufner et al., 2019; Paulhus, 1998). Of course, even though positive evaluative spin may lead reality to taste more palatable, this is not to suggest that goal-undermining steps that could facilitate such spin are advisable. Self-handicapping entails sabotaging one's performance in a way that people can then explain away that failure (Jones & Berglas, 1978; McCrea, 2008; Rhodewalt & Fairfield, 1991). Setting one's oven to broil so that no one will dare taste the burnt dish is simply another way by which the self can ignore reality by refusing to confront it. This counterproductively exploits the gap between what the psychological immune system monitors and what it actually is designed to gauge.

In terms of the framework of the target article, we see healthy self-enhancement as existing in the flexibility of the *architecture* that connects identity themes to self-views to narratives (and sub-narratives). By this perspective, the psychological immune system thrives on natural ambiguity (Dunning, Meyerowitz, & Holzberg, 1989); those with high self-esteem most use such ambiguity to their advantage (Suls, Lemos, & Stewart, 2002). This is what allows most people to believe that they have more fulfilling lives than do others and not actually be wrong (but see Davidai, Deri, & Gilovich, 2021). For one person, living a more fulfilling life than others may include waking up on Saturday morning to bike the scenic hills of the California coastline. For his partner, that may mean writing a commentary for this journal. People's idiosyncratic life goals can allow most people to see the world as it is and feel like they have drawn the higher card. What looks like rationality distortion in the aggregate requires no such violation at the individual level (Critcher, Helzer, & Dunning, 2011). In this way, a positive sense of self can be tethered to reality not only because one's true self is actually quite outstanding (Kwan, John, Kenny, Bond, & Robins, 2004), but because one's self-evaluations are not truth evaluable.

Although each level of Sedikides's model can be characterized by more or less ambiguity (e.g., one can have an

identity theme that involves succeeding professionally or becoming the boss at one's workplace), we contend that there is less *actual* ambiguity at the lowest levels. By this understanding, self-enhancement and self-protection need not require the rewriting of sub-narratives, but the selective recruitment and application of them. The self best fulfills its goals by allowing itself many pathways to find fulfillment in its identity themes, while having a more dispassionate awareness of the specific facts and evidence that can help one to chart (one of multiple) courses by which to arrive at such fulfillment.

When low-level information no longer serves to inform goal pursuit, then we see no problem with such information falling prey to the inaccurate distortions of rewritten narratives. In laying out a plan to become a champ, it likely does not matter how much of a chump one once was (Wilson & Ross, 2001). Similarly, memory's rewriting the details of one's tortured relationship with one's late mother may offer comforting rose-colored glasses that shield one from the pain of an unchangeable past. But reinterpreting the abuse one suffers at the hands of one's current partner may simply rob one of the will to escape avoidable pain. Thinking is not always for doing, but the accuracy of one's thoughts matters most when it is.

Are There Innate and Adaptive Psychological Immune Systems?

As Sedikides describes, the biological immune system includes both an innate system and an adaptive system. By our (amateur) understanding, the two systems differ in three ways. First, the innate system was developed in our species's evolutionary past whereas the adaptive system is constructed through each organism's experience. Second, the innate system offers general, undifferentiated responses to threat whereas the adaptive system tailors its responses to specific threats. Third, the innate system is developed and at the ready before a threat is actually encountered, whereas the adaptive system charts a course of action once a threat is present. We refer to these three distinctions as ones of origin (evolved vs. acquired), specificity (undifferentiated or threat-specific), and temporality (pre-threat and post-threat).

Although these three dimensions nicely align in the biological immune system, this would seem to be less the case with the psychological immune system. Sedikides argues that the work of the innate versus adaptive biological immune system is analogous to reliance on preemptive versus reparative narratives. First of all, we are skeptical that narratives vary in whether they are evolutionarily endowed versus acquired in the course of lived experience.

Instead, we think that all narratives are acquired over an individual's lifespan. As Sedikides says, preemptive narratives "may be constructed more frequently in the everyday process of ruminating on experiences, fantasizing, conducting internal monologues and hypothetical dialogues, telling stories to explain actions and goals, comparing present and past circumstances, imagining hypothetical scenarios, and projecting into the future" (p. 206). To the extent that some

of the psychological immune system is innate, that may be reflected more in the properties of consciousness that permit narration rather than distinctions among the narratives themselves.

By this understanding, it is the remaining two dimensions—specificity and temporality—that may be key to understanding the psychological immune system's work. But part of what makes the psychological immune system different from the biological immune system is its capacity for responding to threats that are merely imagined. As people worldwide have awaited COVID-19 vaccines, they have been unable to ready their biological immune systems by merely dreaming of receiving the jab. And for this reason, when it comes to psychological immunity, specificity and temporality can be unconfounded. It thus seems important to differentiate narratives not merely on a single dimension (as preemptive vs. reparative does), but along two: specificity and temporality. The goal here is not taxonomic complication in its own right, but to home in on the function and adaptiveness that narratives of each form take.

Consider first the specificity dimension. Whereas some narratives reflect specific responses to (and sometimes dismissals of) a threat (e.g., “The judges were biased against me”), others—like what Sedikides calls “global narratives”—are more general in nature. Such narratives “include autobiographical stories such as having surmounted major life obstacles or having mended one’s ways, as well as cultural clichés” (p. 206). Note that general narratives (“The world is unfair ...”) may lend plausibility to threat-specific narratives (“...so no surprise that the judges were unfairly biased against me”), suggesting the two may often work in concert.

Now consider the temporal dimension, especially in the context of threat-specific narratives. People can develop such narratives not merely after a threat is experienced, but as they preemptively brace for the possibility of bad news. Although such pre-threat narratives may be more quickly available when they are needed at the time of threat, one important question is whether pre-threat narration aids in or undermines the plausibility of the threat-specific narrative. For months before the 2020 U.S. presidential election, Donald Trump claimed that the only way he could lose the election is if it were rigged. On the one hand, such an early declaration may keep such rationalizations from later being disregarded as sour grapes. And indeed, Sedikides argues that narratives that are generated after the threat is encountered run the risk of being less believable (and, thus, less likely to work). But on the other hand, pre-threat narrative generation may seem premature: Are narratives actually convincing when they reference events (e.g., election fraud) that are not yet currently knowable? One possibility for future research is that threat-specific narratives that precede versus follow a threat may hold different credibility in one’s own mind versus those of others. Regardless, pre-threat narratives that are specific to a threat—given they offer an analysis of an event that has yet to happen—are almost necessarily less tethered to reality (given it has yet to occur) than is post-threat spin. This may undermine their long-run adaptiveness.

Finally, consider general narratives developed after exposure to a threat. Similar to pre-threat general narratives, some such narratives may lend credibility to accompanying threat-specific narratives. Others may reflect the sort of compensatory strategies (e.g., reminding the self of other thriving identity themes) that can offer immediate but perhaps temporary relief. But to the extent that a threat does have continued relevance to one’s future life pursuits, a focus on the threat will return, and it will need to be dealt with more directly.

The Interconnectedness of the Self

Identity Complexity

Sedikides characterizes the self as a hierarchical system composed of identity themes for which different self-views are relevant. Crucially, these elements can become interconnected, forming identity networks characterized by more or less of what previous researchers have called identity complexity (Linville, 1985). Identity complexity—reflected by a greater number of non-overlapping personal (Linville, 1987) or social identities (Brewer & Pierce, 2005; Roccas & Brewer, 2002)—is associated with higher individual well-being. The core idea is that possessing multiple, independent identities helps buffer against attacks to any one of them (Dixon & Baumeister, 1991; Linville, 1985). Much as investors hedge against financial ruin by diversifying their portfolios, the self benefits from not putting all of itself in one basket. When the self lacks complexity, an attack on part of the self can spread to become an attack on the self as a whole. Sedikides implicitly embraces these literatures in noting how identity interconnectedness can leave the self system vulnerable: “The success in thwarting an attack depends on ... how widely in the system the attack spreads” (p. 206) and “The ability of psychological immune processes to quash a threat depends on its scope. The scope or broadness of a threat is defined by the number and variety of identity themes and self-views it implicates” (p. 211).

These ideas may not be new, but recent phenomena in American society in particular speak to their renewed importance. In particular, political identity is no longer one facet of the self among many, but an organizing theme that draws many disparate (and formerly non-political) aspects of the self into alignment (Huddy, Mason, & Horwitz, 2016; Klein, 2020; Mason, 2015; Mason & Wronski, 2018). As political psychologist Lilliana Mason (2018) recently wrote, “Partisanship can now be thought of as a mega-identity, with all the psychological and behavioral magnifications that implies” (p. 14). In other words, with political polarization has come increasing overlap and convergence among numerous identity themes that has fueled lower identity complexity. And as political journalist Ezra Klein recently argued, “The merging of the identities means when you activate one you often activate all” (p. 70), and “the more your identities converge ... the more your identities can be threatened simultaneously” (p. 71). Such conditions motivate the avoidance (Frimer, Skitka, & Motyl, 2017) and rejection (Hornsey, 2020) of diverse perspectives that threaten to

destabilize the sprawling edifice that constitutes modern Americans' political identity. These consequences are being observed in real time, as intergroup hostility between political groups continues to grow (Finkel et al., 2020).

We would be naïve to argue that we hold the answers to this destructive trend. But we do think it useful to consider the nature of the problem through the lens of identity complexity and Sedikides's model of the self. As fewer and fewer aspects of the self escape connection with one's political identity, it is perhaps no surprise that self-affirmation interventions have largely failed to diminish political defensiveness (Levendusky, 2018; Lyons, 2018; Nyhan & Reifler, 2019), with some such interventions even producing a backfiring effect (Reavis, Ebbs, Onunkwo, & Sage, 2017). As political identities have grown into mega-identities, it is going to be difficult if not impossible to find valued identity themes that can help to frame political threats as minor in scope (Critcher & Dunning, 2015). That is, interventions that encourage a dispassionate assessment of the size of political identity threats may simply help to confirm the subjective breadth of the identity that has been threatened.

But we do see cause for optimism in research demonstrating that counterattitudinal political appeals can be resonant when they are presented in ways that align with people's values and identities (Campbell & Kay, 2014; Feinberg & Willer, 2013, 2015; Hornsey, 2020). For example, conservatives are more likely to acknowledge anthropogenic climate change if they understand free-market solutions to the problem (Campbell & Kay, 2014), and liberals are more likely to support military spending if they are led to construe the institution as one that provides economic opportunity to the disadvantaged (Feinberg & Willer, 2015). Note how these strategies for bridging the partisan divide may actually become *simpler* as political mega-identities become more simplistic in the aggregate. Those hoping to unite people of different political persuasions may need to master just a few different (value-aligned) communication styles. Of course, the malleability of the mapping between identity-relevant values and attitude objects poses its own practical challenge, for the democratization of communication in the modern digital age means that no one source controls the megaphone. Regardless, we encourage more consideration that the growing politicization of identity may not be an ill to directly attack but a baseline reality to productively navigate. In the language of the target article, the growing scope of political identity themes may leave the psychological immune system vulnerable to defensiveness-arousing attack, but the greater alignment of those themes across people may be a boon for communicators who seek to message in ways that avoid activating threat responses.

Causal Trait Theories

If sub-narratives reflect the raw materials from which identity is constructed, then it is natural that such narratives are not simply siloed as supporting evidence for distinct self-views. Instead, Sedikides notes that narratives that bolster the standing of one self-view can be recruited to explain

narratives that may detail deficiencies in another self-view. This idea, that causal reasoning integrates superficially disparate aspects of the self, is core to Critcher, Dunning, and Rom's (2015) notion of *causal trait theories*. Recognizing that the self sees itself as more than lists of identities, traits, and experiences, Critcher et al. showed that people develop causal explanations of how certain traits or self-views influence or give rise to others. For example, someone who sees themselves as both empathic and absentminded may adopt a causal understanding of how one leads to the other ("If I weren't always so moved to help out my friends, perhaps I could actually focus and remember to get done what I need to.")

Critcher et al. (2015) found that the self generates more causal trait theories to make sense of the self than it does to try to understand others. They speculated that causal trait theories primarily serve an epistemic goal, a drive to accurately assess a person (disproportionately, the self) by developing a richer understanding of what lies beneath the surface. But Sedikides offers a plausible alternative possibility, that such theories may reflect the machinations of the psychological immune system. Connecting empathy with absentmindedness is a way not only to understand the self but to explain away its shortcomings.

This previously unappreciated ego-repair function of causal trait theories is particularly interesting when considering a known consequence of developing such explanations: pattern projection (Critcher et al., 2015; Critcher & Dunning, 2009). By this phenomenon, people's implicit personality theories—their beliefs about how traits are likely to co-occur in others—have roots in the explanations people develop to make sense of the self. The person whose bleeding heart supposedly keeps them from staying on track in life is likely to assume other empathic people are also absentminded and that those who are unfeeling are particularly focused. This suggests that the sort of self-protection that stems from causally connecting aspects of the self may then influence social perceptions. When people approach their social worlds with particular implicit personality theories, they are predisposed toward having such expectations confirmed. Such social confirmation may further validate the objectivity of the psychological immune system's original work.

The Role of the Social in Self-Enhancement and Self-Protection

Humans are social animals. And despite the self's eponymous role in self-enhancement and self-protection, there is much that is social to these phenomena as well. Social perceptions are often core not only to identifying self-enhancement (e.g., the better-than-average effect; Zell, Strickhouser, Sedikides, & Alicke, 2020), but also to the process of engaging in it. People surround themselves with others who share and reinforce their positive self-views (Sanitioso & Wlodarski, 2004), minimize their own failures by assuming others share them (Sherman, Presson, & Chassin, 1984), call attention to their ties with successful others (Bernache-Assollant, Chantal,

& Laurin, 2021; Cialdini et al., 1976) while minimizing those with unsuccessful ones (Mussweiler, Gabriel, & Bodenhausen, 2000), and strategically compare themselves with others who will make the self look good by comparison (Wood, Taylor, & Lichtman, 1985). Although the target article does not deny the importance of social cognition to self-enhancement, its frameworks are surprisingly silent on them.

More generally, there is a question of whether the psychological immune system operates by propping up the self as especially able and good, or by distinguishing itself from others by viewing them as particularly inept and bad. Note that this question—by asking in an absolute sense whether the self is good or others are bad—is not answered by the myriad demonstrations of self-other judgment asymmetries. That is, the self sees itself as more competent (Kruger & Dunning, 1999), less biased (Pronin, Lin, & Ross, 2002), less conformist (Pronin, Berger, & Molouki, 2007), freer (Pronin & Kugler, 2010), less motivated by extrinsic incentives (Heath, 1999), and less prejudiced (Mendonça, Mata, & Vohs, 2019) than others. But these are *relative* judgments, and such demonstrations do not answer whether people tend to arrive at an *absolutely* positive view of the self and/or a negative view of others.

The seeming simplicity of this question is deceptive. At first glance, this might seem to be a question of how self-perceptions and social perceptions relate to accuracy (e.g., Balcetis & Dunning, 2013; Epley & Dunning, 2000; Heck & Krueger, 2015, 2016). But note that the question of whether one's self or social perceptions are unrealistically positive or negative is different from whether the self and other people are viewed as positive or negative. The self may underestimate how much others give to charity but still think that that (underestimated) amount is more than adequate.

It is this question of what is *adequate* that is, in our view, surprisingly lacking in examinations of whether the self enhances by seeing itself as exceeding absolute thresholds of adequacy, whether it derogates others as woefully inadequate, or both. The three of us have been approaching this question by attempting to measure people's absolute behavioral thresholds that differentiate fundamentally good or adequate from bad or inadequate behavior. This approach may shed light on whether the psychological immune system encourages self-positivity and/or other-negativity. Although this is ultimately an empirical question that we are still in the process of answering, we suspect that an *adaptive* psychological immune system would prioritize achieving absolutely positive self-views instead of negative other-views. A reluctance to go negative on others may be especially true in describing how people view specific (even unknown) others instead of other people in general (Critcher & Dunning, 2013). People tend to give specific individuals the benefit of the doubt by assuming the best about them until proven wrong (Critcher & Dunning, 2014). This norm of respect is crucial to identifying social partners and developing trust: If one dismisses another before ever giving them a chance, one misses out on the opportunity to identify potentially valuable social partners before even learning what fruits such a social relationship could bring. Building a taller pedestal for

oneself provides one with a satisfying sense of superiority without requiring an absolute dismissal of other people.

Conclusion

If one were designing the psychological immune system from scratch, it would be wise to look to the biological immune system as a guide. But it would offer incomplete guidance. It would not answer what the ultimate goals of the psychological immune system are (and what to monitor to determine whether they are met); how to leverage the self's own capacity for simulating psychological threats and responses to them; or whether to bolster the self through a mix of self-positivity, social negativity, or both. In considering the psychological immune system as it is, we have aimed to think through and offer (at times speculative) answers to these and other questions. Ultimately, we find clear value in Sedikides's central thesis not only because of the useful lens it provides on the psychological immune system's operation, but due to the conceptual refinement and hypothesis generation that were spurred by our attempts to make some of the puzzle pieces fit.

Funding

This work was supported in part by FCT – Fundação para a Ciência e a Tecnologia, I. P. scholarship PD/BD/150547/2019 awarded to André Vazand grant PTDC/PSI-GER/7592/2020 awarded to André Mata, and U.S. National Science Foundation award 1749608 awarded to Clayton R. Critcher.

References

- Alicke, M. D., & Sedikides, C. (2009). Self-enhancement and self-protection: What they are and what they do. *European Review of Social Psychology*, 20(1), 1–48. doi:10.1080/10463280802613866
- Artinger, F., Petersen, M., Gigerenzer, G., & Weibler, J. (2015). Heuristics as adaptive decision strategies in management. *Journal of Organizational Behavior*, 36(S1), S33–S52. doi:10.1002/job.1950
- Balcetis, E., & Dunning, D. (2013). Considering the situation: Why people are better social psychologists than self-psychologists. *Self and Identity*, 12(1), 1–15. doi:10.1080/15298868.2011.617886
- Baumeister, R. F. (1991). *Meanings of Life*. New York, NY: The Guilford Press.
- Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest: A Journal of the American Psychological Society*, 4(1), 1–44. doi:10.1111/1529-1006.01431
- Bernache-Assollant, I., Chantal, Y., & Laurin, R. (2021). Is Andy Murray more British than Scottish? It depends on his success! Game outcome and the MOATing effect. *Psychological Reports*, 124(5), 2237–2250. doi:10.1177/0033294120957242
- Blanton, H., Cooper, J., Skurnik, I., & Aronson, J. (1997). When bad things happen to good feedback: Exacerbating the need for self-justification with self-affirmations. *Personality and Social Psychology Bulletin*, 23(7), 684–692. <https://doi.org/10.1177/0146167297237002>
- Bonanno, G. A., Rennie, C., & Dekel, S. (2005). Self-enhancement among high-exposure survivors of the September 11th terrorist attack: Resilience or social maladjustment? *Journal of Personality and Social Psychology*, 88(6), 984–998. doi:10.1037/0022-3514.88.6.984

- Brewer, M. B., & Pierce, K. P. (2005). Social identity complexity and outgroup tolerance. *Personality & Social Psychology Bulletin*, 31(3), 428–437. doi:10.1177/0146167204271710
- Campbell, T. H., & Kay, A. C. (2014). Solution aversion: On the relation between ideology and motivated disbelief. *Journal of Personality and Social Psychology*, 107(5), 809–824. doi:10.1037/a0037963
- Cialdini, R. B., Borden, R. J., Thorne, A., Walker, M. R., Freeman, S., & Sloan, L. R. (1976). Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology*, 34(3), 366–375. doi:10.1037/0022-3514.34.3.366
- Colvin, C. R., Block, J., & Funder, D. C. (1995). Overly positive self-evaluations and personality: Negative implications for mental health. *Journal of Personality and Social Psychology*, 68(6), 1152–1162. doi:10.1037/0022-3514.68.6.1152
- Critcher, C., Helzer, E. G., & Dunning, D. (2011). Self-enhancement via redefinition: Defining social concepts to ensure positive views of self. In M. D. Alicke & C. Sedikides (Eds.), *Handbook of self-enhancement and self-protection* (pp. 69–91). New York, NY: The Guilford Press.
- Critcher, C. R., & Dunning, D. (2009). Egocentric pattern projection: How implicit personality theories recapitulate the geography of the self. *Journal of Personality and Social Psychology*, 97(1), 1–16. doi:10.1037/a0015670
- Critcher, C. R., & Dunning, D. (2013). Predicting persons' versus a person's goodness: Behavioral forecasts diverge for individuals versus populations. *Journal of Personality and Social Psychology*, 104(1), 28–44. doi:10.1037/a0030836
- Critcher, C. R., & Dunning, D. (2014). Thinking about others versus another: Three reasons judgments about collectives and individuals differ. *Social and Personality Psychology Compass*, 8(12), 687–698. doi:10.1111/spc3.12142
- Critcher, C. R., & Dunning, D. (2015). Self-affirmations provide a broader perspective on self-threat. *Personality & Social Psychology Bulletin*, 41(1), 3–18. doi:10.1177/0146167214554956
- Critcher, C. R., Dunning, D., & Rom, S. C. (2015). Causal trait theories: A new form of person knowledge that explains egocentric pattern projection. *Journal of Personality and Social Psychology*, 108(3), 400–416. doi:10.1037/pspa0000019
- Davidai, S., Deri, S., & Gilovich, T. (2021). There must be more to life than this: The impact of highly-accessible exemplars on self-evaluation and discontent. *Self and Identity*, 20(1), 72–93. doi:10.1080/15298868.2020.1779121
- Dixon, T. M., & Baumeister, R. F. (1991). Escaping the self: The moderating effect of self-complexity. *Personality and Social Psychology Bulletin*, 17(4), 363–368. doi:10.1177/0146167291174002
- Dufner, M., Gebauer, J. E., Sedikides, C., & Denissen, J. J. A. (2019). Self-enhancement and psychological adjustment: A meta-analytic review. *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology, Inc.*, 23(1), 48–72. doi:10.1177/1088868318756467
- Dunning, D., Meyerowitz, J. A., & Holzberg, A. D. (1989). Ambiguity and self-evaluation: The role of idiosyncratic trait definitions in self-serving assessments of ability. *Journal of Personality and Social Psychology*, 57(6), 1082–1090. doi:10.1037/0022-3514.57.6.1082
- Epley, N., & Dunning, D. (2000). Feeling “Holier than thou”: Are self-serving assessments produced by errors in self-or social prediction? *Journal of Personality and Social Psychology*, 79(6), 861–875. doi:10.1037/0022-3514.79.6.861
- Feinberg, M., & Willer, R. (2013). The moral roots of environmental attitudes. *Psychological Science*, 24(1), 56–62. doi:10.1177/0956797612449177
- Feinberg, M., & Willer, R. (2015). From gulf to bridge: When do moral arguments facilitate political influence? *Personality & Social Psychology Bulletin*, 41(12), 1665–1681. doi:10.1177/0146167215607842
- Finkel, E. J., Bail, C. A., Cikara, M., Ditto, P. H., Iyengar, S., Klar, S., ... Druckman, J. N. (2020). Political secretarianism in American. *Science (New York, N.Y.)*, 370(6516), 533–536. doi:10.1126/science.abel1715
- Frimer, J. A., Skitka, L. J., & Motyl, M. (2017). Liberals and conservatives are similarly motivated to avoid exposure to one another's opinions. *Journal of Experimental Social Psychology*, 72, 1–12. doi:10.1016/j.jesp.2017.04.003
- Gregg, A. P., Sedikides, C., & Gebauer, J. E. (2011). Dynamics of identity: Between self-enhancement and self-assessment. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of Identity Theory And Research* (pp. 305–327). New York, NY: Springer Science & Business Media. doi:10.1007/978-1-4419-7988-9_14
- Gregg, A. P., Sedikides, C., & Gebauer, J. E. (2011). Dynamics of identity: Between self-enhancement and self-assessment. In S. J. Schwarz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research*. New York, NY: Springer.
- Hart, J., Shaver, P. R., & Goldenberg, J. L. (2005). Attachment, self-esteem, worldviews, and terror management: Evidence for a tripartite security system. *Journal of Personality and Social Psychology*, 88(6), 999–1013. doi:10.1037/0022-3514.88.6.999
- Haselton, M. G., & Buss, D. M. (2000). Error management theory: A new perspective on biases in cross-sex mind reading. *Journal of Personality and Social Psychology*, 78(1), 81–91. doi:10.1037/0022-3514.78.1.81
- Haselton, M. G., Bryant, G. A., Wilke, A., Frederick, D. A., Galperin, A., Frankenhuis, W. E., & Moore, T. (2009). Adaptive rationality: An evolutionary perspective on cognitive bias. *Social Cognition*, 27(5), 733–763. doi:10.1521/soco.2009.27.5.733
- Heath, C. (1999). On the social psychology of agency relationships: Lay theories of motivation overemphasize extrinsic incentives. *Organizational Behavior and Human Decision Processes*, 78(1), 25–62. doi:10.1006/obhd.1999.2826
- Heatherton, T. F., Herman, C. P., & Polivy, J. (1992). Effects of distress on eating: The importance of ego-involvement. *Journal of Personality and Social Psychology*, 62(5), 801–803. doi:10.1037/0022-3514.62.5.801
- Heck, P. R., & Krueger, J. I. (2015). Self-enhancement diminished. *Journal of Experimental Psychology. General*, 144(5), 1003–1020. doi:10.1037/xge0000105
- Heck, P. R., & Krueger, J. I. (2016). Social perception of self-enhancement bias and error. *Social Psychology*, 47(6), 327–339. doi:10.1027/1864-9335/a000287
- Hornsey, M. J. (2020). Why facts are not enough: Understanding and managing the motivated rejection of science. *Current Directions in Psychological Science*, 29(6), 583–591. doi:10.1177/0963721420096364
- Huddy, L., Mason, L., & Horwitz, S. N. (2016). Political identity convergence: On being Latino, becoming a Democrat, and getting active. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, 2(3), 205–228. doi:10.7758/RSF.2016.2.3.11
- James, W. (1950). *The principles of psychology* (Vols. 1 & 2). (Original work published 1890). New York, NY: Dover Publications.
- Jones, E. E., & Berglas, S. (1978). Control of attributions about the self through self-handicapping strategies: The appeal of alcohol and the role of underachievement. *Personality and Social Psychology Bulletin*, 4(2), 200–206. doi:10.1177/014616727800400205
- Klein, E. (2020). *Why we're polarized*. New York, NY: Simon and Schuster.
- Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, 77(6), 1121–1134. doi:10.1037/0022-3514.77.6.1121
- Kurt, A., & Paulhus, D. L. (2008). Moderators of the adaptiveness of self-enhancement: Operationalization, motivational domain, adjustment facet, and evaluator. *Journal of Research in Personality*, 42(4), 839–853. doi:10.1016/j.jrp.2007.11.005
- Kwan, V. S. Y., John, O. P., Kenny, D. A., Bond, M. H., & Robins, R. W. (2004). Reconceptualizing individual differences in self-enhancement bias: An interpersonal approach. *Psychological Review*, 111(1), 94–110. doi:10.1037/0033-295X.111.1.94
- Levendusky, M. S. (2018). When efforts to depolarize the electorate fail. *Public Opinion Quarterly*, 82(3), 583–592. doi:10.1093/poq/nfy036

- Liberman, N., & Trope, Y. (2008). The psychology of transcending the here and now. *Science (New York, N.Y.)*, 322(5905), 1201–1205. doi:10.1126/science.1161958
- Linville, P. W. (1985). Self-complexity and affective extremity: Don't put all of your eggs in one cognitive basket. *Social Cognition*, 3(1), 94–120. doi:10.1521/soco.1985.3.1.94
- Linville, P. W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology*, 52(4), 663–676. doi:10.1037/0022-3514.52.4.663
- Lyons, B. (2018). Reducing group alignment in factual disputes? The limited effects of social identity interventions. *Science Communication*, 40(6), 789–807. doi:10.1177/1075547018804826
- Martin, L. L., & Tesser, A. (1996). Some ruminative thoughts. In R. S. Wyer, Jr. (Ed.), *Ruminative thoughts. Advances in social cognition* (Vol. 9, pp. 1–47). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Mason, L. (2015). "I Disrespectfully Agree": The differential effects of partisan sorting on social and issue polarization. *American Journal of Political Science*, 59(1), 128–145. doi:10.1111/ajps.12089
- Mason, L. (2018). *Uncivil agreement: How politics became our identity*. Chicago, IL: University of Chicago Press.
- Mason, L., & Wronski, J. (2018). One tribe to bind them all: How our social group attachments strengthen partisanship. *Political Psychology*, 39(S1), 257–277. doi:10.1111/pops.12485
- McCrea, S. M. (2008). Self-handicapping, excuse making, and counterfactual thinking: Consequences for self-esteem and future motivation. *Journal of Personality and Social Psychology*, 95(2), 274–292. doi:10.1037/0022-3514.95.2.274
- McKay, R., & Efferson, C. (2010). The subtleties of error management. *Evolution and Human Behavior*, 31(5), 309–319. doi:10.1016/j.evolhumbehav.2010.04.005
- Mendonça, C., Mata, A., & Vohs, K. D. (2019). Self-other asymmetries in the perceived validity of the Implicit Association Test. *Journal of Experimental Psychology. Applied*, 25(2), 192–218. doi:10.1037/xap0000214
- Mikulincer, M. (1989). Cognitive interference and learned helplessness: The effects of off-task cognitions on performance following unsolvable problems. *Journal of Personality and Social Psychology*, 57(1), 129–135. doi:10.1037/0022-3514.57.1.129
- Moon, A., Gan, M., & Critcher, C. R. (2020). The overblown implications effect. *Journal of Personality and Social Psychology*, 118(4), 720–742. doi:10.1037/pspi0000204
- Mussweiler, T., Gabriel, S., & Bodenhausen, G. V. (2000). Shifting social identities as a strategy for deflecting threatening social comparisons. *Journal of Personality and Social Psychology*, 79(3), 398–409. doi:10.1037/0022-3514.79.3.398
- Nyhan, B., & Reifler, J. (2019). The roles of information deficits and identity threat in the prevalence of misperceptions. *Journal of Elections, Public Opinion and Parties*, 29(2), 222–244. doi:10.1080/17457289.2018.1465061
- Oettingen, G., & Gollwitzer, P. M. (2001). Goal setting and goal striving. In A. Tesser & N. Schwarz (Eds.), *Blackwell handbook of social psychology: Intraindividual processes* (pp. 329–347). Oxford, UK: Wiley Blackwell. doi:10.1002/9780470998519.CH15
- Paulhus, D. L. (1998). Interpersonal and intrapsychic adaptiveness of trait self-enhancement: A mixed blessing? *Journal of Personality and Social Psychology*, 74(5), 1197–1208. doi:10.1037/0022-3514.74.5.1197
- Pronin, E., & Kugler, M. B. (2010). People believe they have more free will than others. *Proceedings of the National Academy of Sciences of the United States of America*, 107(52), 22469–22474. doi:10.1073/pnas.1012046108
- Pronin, E., Berger, J., & Molouki, S. (2007). Alone in a crowd of sheep: Asymmetric perceptions of conformity and their roots in an introspection illusion. *Journal of Personality and Social Psychology*, 92(4), 585–595. doi:10.1037/0022-3514.92.4.585
- Pronin, E., Lin, D. Y., & Ross, L. (2002). The bias blind spot: Perceptions of bias in self versus others. *Personality and Social Psychology Bulletin*, 28(3), 369–381. doi:10.1177/0146167202286008
- Reavis, R. D., Ebbs, J. B., Onunkwo, A. K., & Sage, L. M. (2017). A self-affirmation exercise does not improve intentions to vaccinate among parents with negative vaccine attitudes (and may decrease intentions to vaccinate). *PLoS One*, 12(7), e0181368. doi:10.1371/journal.pone.0181368
- Rhodeswalt, F., & Fairfield, M. (1991). Claimed self-handicaps and the self-handicapper: The relation of reduction in intended effort to performance. *Journal of Research in Personality*, 25(4), 402–417. doi:10.1016/0092-6566(91)90030-T
- Roccas, S., & Brewer, M. B. (2002). Social identity complexity. *Personality and Social Psychology Review*, 6(2), 88–106. doi:10.1207/S15327957PSPR0602_01
- Sanitioso, R. B., & Wlodarski, R. (2004). In search of information that confirms a desired self-perception: Motivated processing of social feedback and choice of social interactions. *Personality & Social Psychology Bulletin*, 30(4), 412–422. doi:10.1177/0146167203261882
- Savitsky, K., Epley, N., & Gilovich, T. (2001). Do others judge us as harshly as we think? Overestimating the impact of our failures, shortcomings, and mishaps. *Journal of Personality and Social Psychology*, 81(1), 44–56. doi:10.1037/0022-3514.81.1.44
- Sedikides, C. (1993). Assessment, Enhancement, and Verification Determinants of the Self-Evaluation Process. *Journal of Personality and Social Psychology*, 65(2), 317–338. doi:10.1037/0022-3514.65.2.317
- Sedikides, C., & Green, J. D. (2000). On the self-protective nature of inconsistency-negativity management: Using the person memory paradigm to examine self-referent memory. *Journal of Personality and Social Psychology*, 79(6), 906–922. doi:10.1037/0022-3514.79.6.906
- Sedikides, C., Green, J. D., Saunders, J., Skowronski, J. J., & Zengel, B. (2016). Mnemonic neglect: Selective amnesia of one's faults. *European Review of Social Psychology*, 27(1), 1–62. doi:10.1080/10463283.2016.1183913
- Sedikides, C., & Gregg, A. P. (2003). Protraits of the self. In M. A. Hogg & J. Cooper (Eds.), *The SAGE handbook of social psychology* (pp. 110–138). London, UK: Sage Publications.
- Sedikides, C., & Gregg, A. P. (2008). Self-enhancement: Food for thought. *Perspectives on Psychological Science: A Journal of the Association for Psychological Science*, 3(2), 102–116. doi:10.1111/j.1745-6916.2008.00068.x
- Sedikides, C., & Skowronski, J. J. (1990). Towards reconciling personality and social psychology: A construct accessibility approach. *Journal of Social Behavior and Personality*, 5(6), 531–546.
- Sedikides, C., & Strube, M. J. (1997). Self-evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 209–269). New York, NY: Academic Press. doi:10.1016/S0065-2601(08)60018-0
- Shepperd, J. A. (1993). Student derogation of the scholastic aptitude test: Biases in perceptions and presentations of college board scores. *Basic and Applied Social Psychology*, 14(4), 455–473. doi:10.1207/s15324834basop1404_5
- Sherman, D. K., & Cohen, G. L. (2006). The psychology of self-defense: Self-affirmation theory. *Advances in Experimental Social Psychology*, 38, 183–242. doi:10.1016/S0065-2601(06)38004-5
- Sherman, J. W., Macrae, C. N., & Bodenhausen, G. V. (2000). Attention and stereotyping: Cognitive constraints on the construction of meaningful social impressions. *European Review of Social Psychology*, 11(1), 145–175. doi:10.1080/14792772043000022
- Sherman, S. J., Presson, C. C., & Chassin, L. (1984). Mechanisms underlying the false consensus effect: The special role of threats to the self. *Personality and Social Psychology Bulletin*, 10(1), 127–138. doi:10.1177/0146167284101015
- Sivanathan, N., Molden, D. C., Galinsky, A. D., & Ku, G. (2008). The promise and peril of self-affirmation in de-escalation of commitment. *Organizational Behavior and Human Decision Processes*, 107(1), 1–14. doi:10.1016/j.obhdp.2007.12.004
- Suls, J., Lemos, K., & Stewart, H. L. (2002). Self-esteem, construal, and comparisons with the self, friends, and peers. *Journal of Personality and Social Psychology*, 82(2), 252–261. doi:10.1037/0022-3514.82.2.252
- Tenney, E. R., Logg, J. M., & Moore, D. A. (2015). (Too) optimistic about optimism: The belief that optimism improves performance. *Attitudes and Social Cognition*, 108(3), 377–399. doi:10.1037/pspa000018377

- Tesser, A. (2000). On the confluence of self-esteem maintenance mechanisms. *Personality and Social Psychology Review*, 4(4), 290–299. doi:[10.1207/S15327957PSPR0404_1](https://doi.org/10.1207/S15327957PSPR0404_1)
- Todd, P. M., & Gigerenzer, G. (2012). What is ecological rationality? In P. M. Todd, G. Gigerenzer, & ABC Research Group (Eds.), *Ecological rationality: Intelligence in the world* (pp. 3–30). New York, NY: Oxford University Press. doi:[10.1093/acprof:oso/9780195315448.003.0011](https://doi.org/10.1093/acprof:oso/9780195315448.003.0011)
- Trope, Y. (1980). Self-assessment, self-enhancement, and task preference. *Journal of Experimental Social Psychology*, 16(2), 116–129. doi:[10.1016/0022-1031\(80\)90003-7](https://doi.org/10.1016/0022-1031(80)90003-7)
- Trope, Y. (1986). Self-assessment and self-enhancement in achievement motivation. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 1, pp. 350–378). New York, NY: The Guilford Press.
- Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, 117(2), 440–463. doi:[10.1037/a0018963](https://doi.org/10.1037/a0018963)
- Wilson, A. E., & Ross, M. (2001). From chump to champ: People's appraisals of their earlier and present selves. *Journal of Personality and Social Psychology*, 80(4), 572–584. doi:[10.1037/0022-3514.80.4.572](https://doi.org/10.1037/0022-3514.80.4.572)
- Wood, J. V., Taylor, S. E., & Lichtman, R. R. (1985). Social comparison in adjustment to breast cancer. *Journal of Personality and Social Psychology*, 49(5), 1169–1183. doi:[10.1037/0022-3514.49.5.1169](https://doi.org/10.1037/0022-3514.49.5.1169)
- Zell, E., Strickhouser, J. E., Sedikides, C., & Alicke, M. D. (2020). The better-than-average effect in comparative self-evaluation: A comprehensive review and meta-analysis. *Psychological Bulletin*, 146(2), 118–149. doi:[10.1037/bul0000218](https://doi.org/10.1037/bul0000218)