



Contents lists available at ScienceDirect

Journal of Experimental Social Psychology

journal homepage: www.elsevier.com/locate/jesp

On the experience of self-relevant feedback: How self-concept organization influences affective responses and self-evaluations

Allen R. McConnell^{a,*}, Robert J. Rydell^b, Christina M. Brown^c

^a Department of Psychology, Miami University, Oxford, OH 45056, United States

^b Department of Psychological and Brain Sciences, Indiana University, Bloomington, IN, United States

^c Department of Psychology, Saint Louis University, St. Louis, MO, United States

ARTICLE INFO

Article history:

Received 25 June 2008

Revised 6 March 2009

Available online 9 April 2009

Keywords:

Self-concept
Social cognition
Affect
Self-complexity

ABSTRACT

We evaluated how self-concepts are represented in memory, testing predictions about how self-relevant feedback influences mood and self-evaluation. Specifically, we view the self as comprised of multiple self-aspects (e.g., daughter, sorority sister), each associated with specific attributes (e.g., shy, philanthropy). Study 1 showed that priming a self-aspect increased the accessibility of attributes idiosyncratically associated with the activated self-aspect. In Studies 2 and 3, positive or negative self-relevant feedback was provided to observe how affect and self-evaluations are mediated by self-concept representation. Study 2 demonstrated that changes in mood were accounted for by how feedback impacted evaluations of the currently activated self-aspect. Moreover, evaluations of other self-aspects shifted as they shared more attributes with the self-aspect implicated by feedback. In Study 3, feedback about an attribute also influenced affect, with stronger mood change revealed for attributes associated with a greater proportion of self-aspects. This work demonstrates that affective experiences resulting from self-relevant feedback are not determined by one's self-concept representation in its entirety, but rather, by the impact of that feedback on activated self-aspects.

© 2009 Elsevier Inc. All rights reserved.

Introduction

Upon receiving word of a manuscript's acceptance, we often experience elation and feel better about ourselves. On the other hand, the dissolution of a significant romantic relationship can bring us great sorrow and diminished self-evaluations. The connection between self-relevant feedback (e.g., a paper's publication, a lover's betrayal) and resulting changes in affect seem so obvious as to be self-evident. Yet, how well do we understand the underlying processes involved in such occurrences? Why does praise or criticism, success or failure, good fortune or bad luck, affect people in strikingly different ways? Sometimes it seems that feedback about one domain of our lives can affect our perceptions and reactions in other domains, but is this truly the case, and does it apply to all people equally? The current work explores how self-concept organization influences these outcomes, and in particular, it forwards that a more specified account of self-concept representation is necessary to fully address these fundamental psychological questions.

Although examining the experience of self-relevant feedback is inherently important from a phenomenological perspective, con-

siderable research has demonstrated that general affect also has significant consequences for behavior. For example, affect influences the extent to which people process information in an effortful fashion (e.g., Schwarz & Clore, 1996), reveal creativity in problem solving (Gaspar, 2003), render causal judgments (e.g., Keltner, Ellsworth, & Edwards, 1993), report on their physical health (e.g., Salovey, Detweiler, Steward, & Bedell, 2001), use stereotypes (e.g., Bodenhausen, Kramer, & Süsser, 1994), and recall events (e.g., Bower & Forgas, 2001). Thus, understanding factors that shape affective experiences is quite valuable because it speaks to the processes underlying important behavioral outcomes. In the current work, we focus on the mediating role of self-concept representation in how self-relevant feedback impacts one's general affective state.

It is interesting to note that there is little agreement about the representation of the self (Greenwald & Banaji, 1989). Most view self-concept as the content of what people believe to be true about themselves (Baumeister, 1998; Brown, 1998; Forgas & Williams, 2002). But beyond this point, there is less consensus. For example, is this content about one self or many? Although most would concur that the self is comprised of multiple selves, how are they represented in memory and what are the implications of this organization? In this paper, we test predictions derived from the Multiple Self-aspects Framework (MSF; McConnell, 2009), which outlines how self-knowledge is represented in memory. In

* Corresponding author.

E-mail address: mcconnar@muohio.edu (A.R. McConnell).

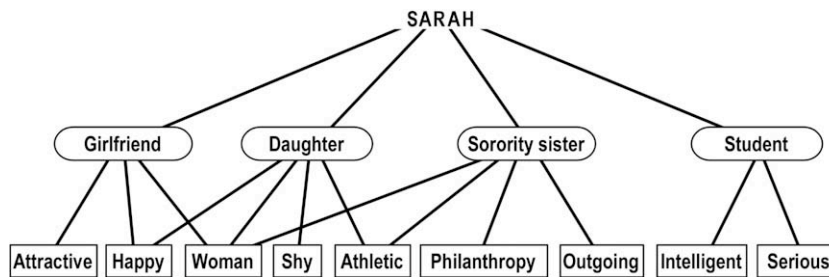


Fig. 1. Self-concept representation of "Sarah" in the multiple self-aspects framework.

particular, we examine how context activates a subset of self-knowledge and how self-relevant feedback influences affect and self-evaluations as anticipated by this framework. Although past work has long acknowledged that multiple aspects of the self exist and are not concurrently activated in memory (e.g., Higgins, 1987; Markus & Nurius, 1986; Sedikides & Brewer, 2001) and some research has even assessed such self-knowledge in idiographic terms on occasion (e.g., Higgins, 1987; Hinkley & Andersen, 1996), the MSF builds upon this prior work, extends the focus on idiographic assessment of the self-concept, and offers the conceptual advance of a more comprehensive model.

The multiple self-aspects framework

In a review of the self-concept literature, McConnell (2009) proposed the MSF to articulate how the self is represented in memory. As Fig. 1 illustrates, the MSF assumes that one's self-concept is comprised of multiple, context-dependent *self-aspects* (the ovals), representing meaningful aspects of one's distinct self-relevant knowledge. In this example, Sarah has four self-aspects, capturing herself as a girlfriend, daughter, sorority sister, and student. These self-aspects can be diverse, reflecting roles (e.g., Roberts & Donahue, 1994), goals (e.g., Higgins, 1997), private and public selves (e.g., Triandis, 1989), and relational and collective identities (e.g., Brewer & Gardner, 1996). Self-aspects are represented in long term memory, yet at any given moment, only a subset of this knowledge is active and serves to organize Sarah's experiences and actions (Bruner, 1957; Hasher & Zacks, 1988; Shallice, 1972). Her environment and goals (e.g., being in a library, planning to attend medical school) trigger a relevant self-aspect (e.g., her student self-aspect), increasing its accessibility while other self-aspects remain relatively inaccessible. As a result, Sarah's behaviors might differ considerably based on whether she spends her Saturday night at a Panhellenic function (where her sorority sister self-aspect might be most accessible) or at the library (where her student self-aspect might dominate). In general, differential accessibility of self-aspects results from contextual factors that activate relevant self-aspects and their associated knowledge in memory (e.g., Higgins, 1987; Hugenberg & Bodenhausen, 2004).¹

Each self-aspect, in turn, is associated with *attributes* (the rectangles). These attributes can include traits (e.g., shy), behaviors (e.g., philanthropy), affective responses (e.g., happy), and physical characteristics (e.g., attractive), as well as other information that is descriptive of her in a particular context (Schleicher & McConnell, 2005). These attributes vary from individual to individual and may

be derived from many sources, including one's culture (e.g., Shweder et al., 1998), feedback provided by others (e.g., Mead, 1934), inferences drawn from one's own behavior (e.g., Bem, 1967), experiences moving through one's environment (e.g., Neisser, 1991), and experienced or simulated bodily states (e.g., Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric, 2005).

Whereas self-aspects reflect organizing contexts of the self that are *contextual* (e.g., When I am, Where I am), attributes are the qualities exhibited by the person in those contexts (e.g., What I am, How I am). In some cases, attributes may be uniquely associated with one self-aspect (e.g., shy), while others may be associated with more than one (e.g., athletic). Thus, self-aspects and attributes exist in an intricate network of self-knowledge. Tying her self-aspects together is Sarah's overarching awareness of herself as a person, which is derived from reflexive consciousness and self-awareness across time (Baumeister, 1998; James, 1890; McAdams, 1999).

As noted above, contextual factors are assumed to increase the accessibility of relevant self-aspects, making the impact of their evaluations especially pivotal in determining the valence and extremity of one's currently experienced affect. For instance, if Sarah's boyfriend telephones her and says she is a great girlfriend, his phone call should increase the accessibility of her girlfriend self-aspect. To the extent that this now accessible self-aspect is viewed even more positively in the wake of his comments, her mood should be especially enhanced. Thus, the current framework proposes that her current affective experiences will reflect the valence-related inputs from her self-aspects weighted by their accessibility (with currently activated self-aspects playing an especially important role in determining general affective outcomes such as mood).

Additionally, feedback about a particular self-aspect may also impact appraisals of other self-aspects that share common attributes. For example, consider the phone call that Sarah received from her boyfriend. Not only might his comments improve her evaluation of her girlfriend self-aspect, but his call might also elevate the positivity of her daughter self-aspect because these self-aspects share two attributes. Through associations existing in memory, feedback about one self-aspect can implicate others that share common attributes. Further, one can quantify the extent to which her evaluations of other self-aspects are implicated by this self-relevant feedback by computing the proportion of attributes that each self-aspect shares with the self-aspect implicated by the feedback. Given the view of the self espoused above, it is anticipated that her boyfriend's comments would, all things being equal, have a greater impact on evaluations of her daughter self-aspect (50% of its attributes are shared) than on appraisals of her sorority sister self-aspect (25% of its attributes are shared), which in turn should be more affected than evaluations of her student self-aspect (no shared attributes). Thus, the specific representation of the self-concept stored in memory predicts that feedback about a self-aspect will influence appraisals of other self-aspects in proportion to the amount of shared attributes.

¹ In the current work we assume that frequent activation of particular self-aspects increases their baseline level of accessibility, making them relatively more influential (Higgins, King, & Mavin, 1982). Undoubtedly, self-aspects and attributes vary in a number of important ways (e.g., accessibility, centrality, importance), however in the current work, we focus on how recent self-aspect activation increases the accessibility of relevant self-knowledge and has implications for affect and self-evaluation (see also, Brown & McConnell, 2009).

Finally, in addition to receiving information about one's self-aspects, feedback can also pertain to one's attributes. For instance, Sarah's boyfriend could call Sarah and make comments about her attributes (e.g., "you are very attractive," "you are a wonderful woman"). We argue here that feedback about attributes should have a greater impact on affect when they are associated with a larger proportion of one's self-aspects. Thus, all things being equal, Sarah's boyfriend saying she is a "wonderful woman" would improve her mood more (because it is associated with three self-aspects) than him saying she is "very attractive" (an attribute only associated with one self-aspect). In other words, the influence of feedback about an attribute on one's mood should be proportionate to the number of self-aspects associated with it because it is the evaluation of relatively accessible self-aspects that serve as input to determine general affective states.

The perspective advocated by the MSF is based on a number of literatures on the self (e.g., Higgins, 1987; Sedikides & Brewer, 2001), and in particular from our on-going work examining self-complexity (e.g., Brown, Young, & McConnell, 2009; McConnell, Strain, Brown, & Rydell, in press; McConnell et al., 2005; Renaud & McConnell, 2002; Schleicher & McConnell, 2005). Self-complexity refers to the extent that one's overall self-concept is comprised of many self-aspects with relatively unique attributes (greater self-complexity) or consists of fewer self-aspects with many redundant attributes (less self-complexity) (Linville, 1985). Research has demonstrated that people lower in self-complexity experience stronger affective responses to life events (Linville, 1985), presumably because events have more impact on people with fewer self-aspects (because a greater proportion of the self-concept is implicated) and with self-aspects that share a number of common attributes (because the attributes shared between self-aspects allows the affect from the focal event to spread throughout the entire self-concept, hence the name affective spillover). Although there is considerable debate about the role of self-complexity in mental health and well-being (e.g., Donahue, Robins, Roberts, & John, 1993; Linville, 1987; McConnell et al., 2005, in press; Rafaeli-Mor & Steinberg, 2002; Woolfolk, Novalany, Gara, Allen, & Polino, 1995), support for affective spillover is considerable (e.g., Linville, 1985; Renaud & McConnell, 2002; for an overview, McConnell & Strain, 2007).

Despite the generative nature of self-complexity research, many questions about the exact structure of self-concept representation in this work remain. Although it is assumed that the self is represented in an associative network involving spread-of-activation principles (Linville, 1985), the specific organization of this structure has not been directly tested. Because we have predicted specific principles through which affect-laden feedback is propagated throughout the self-concept, we can make more nuanced predictions about the processes involved in how self-relevant feedback is experienced. In other words, the current work documents the processes through which affective spillover occurs in greater detail.

In addition to testing a more explicit account of how the self is represented in memory, the current work proposes that another limit in most self-complexity research is that it only considers self structure and consequences at a "global" level (i.e., one's entire self-concept). Traditionally, self-complexity researchers have relied on a single statistic, *H* (Scott, 1969), to capture self structure (both the number of self-aspects and the redundancy in attributes among them). However, *H* has been criticized for its ability to assess self-complexity effectively (e.g., Rafaeli-Mor, Gotlib, & Revelle, 1999; Schleicher & McConnell, 2005), and even if one accepts that *H* is a reasonable index of self-complexity, it only captures the structure of one's entire self-concept and ignores self representation at a more "local" level (e.g., at the level of one's self-aspects). However, because we articulated a specific arrangement of

associative linkages for self-concept representation, one can consider structural parameters that are more local than global (e.g., the proportion of attributes each self-aspect shares with a self-aspect implicated by self-relevant feedback). As a result, we examine more precise predictions about how self-relevant feedback is experienced and propagated throughout one's self-concept and explicate processes through which affective spillover occurs.

In addition, focusing on a more nuanced model of the self-concept allows us to consider self-concept implications at a more local level. Taking a more "local" approach anticipates that feedback about a particular self-aspect can impact evaluations of other self-aspects based on how self-aspects are organized in memory. Given its focus on the overall structure of the self, research on self-complexity is silent about such possibilities. And because we advance a specific organization of self-concept structure, the degree to which such local effects should be observed can be quantified (e.g., feedback about one self-aspect will impact evaluations of other self-aspects that share a greater proportion of attributes with the self-aspect implicated by the feedback). In sum, although our approach is compatible with how the self is viewed in the self-complexity literature, its specific structure provides a number of advantages over past self-complexity work. For example, it accounts for how traditional self-complexity outcomes are realized at a global level (e.g., spillover effects) by highlighting how changes in affect result from shifts in evaluations of accessible self-aspects. One novel implication of this perspective is that people lower in self-complexity might not reveal spillover effects when feedback does not alter evaluations of the relevant self-aspect. Also, we offer new predictions at a local level that have not been anticipated by previous self-complexity research by employing a more nuanced understanding of self-concept representation than a global measure of structure (i.e., *H*).

More generally, the current framework can be contrasted to other perspectives addressing how the self is represented in memory. For instance, mixed models of self-concept representation propose that the self becomes increasingly represented by traits, instead of episodic events, as information about the self increases (e.g., Klein, Loftus, Trafton, & Fuhrman, 1992; Klein, Sherman, & Loftus, 1996). Although there is good support for this position, what is not definitively spelled out in this work is how this knowledge is organized.² Although a number of interesting possibilities have been suggested (e.g., Cantor & Kihlstrom, 1987; Kihlstrom & Klein, 1994), the current framework proposes that attributes (which can include many forms of self-knowledge, including traits) are associated with a number of different self-aspects, resulting in a much more precise description of self-concept representation. For example, appraisals of one's self-aspects are pivotal in one's affective experiences. Thus, although activation between attributes and self-aspects is relatively interchangeable, here general affect (e.g., mood)

² A similar concern applies to work suggesting the self should be represented in a connectionist framework comprised of a number of cognition-affect units (Mischel & Morf, 2003; Mischel & Shoda, 1995, 1998). Although connectionist models in general provide a number of advantages (e.g., flexibility, neural plausibility), it is unclear how much behavioral evidence uniquely supports this connectionist account. For example, the primary piece of evidence offered is that people seem to exhibit "if... then..." situation-behavior relations (e.g., Mendoza-Denton, Ayduk, Mischel, Shoda, & Testa, 2001). Although such findings are compatible with a connectionist account, they do not mandate one and can be explained by other perspectives including the current framework (i.e., self-aspects capture situational information and associated attributes prescribe context-specific behavior, among many other types of responses such as affect and social identity). At present, the representational details of this connectionist approach are not well specified, making it difficult to anticipate what potential predictions it might make with respect to the current work. More important, to the extent that this or other (e.g., Kashima, Gurumurthy, Ouschan, Chong, & Mattingly, 2007; Smith & Queller, 2004) approaches anticipate context-dependent subregions of self-knowledge being activated, the current work can shed light on how context-specific behavior is exhibited.

is determined by the evaluation of relatively accessible self-aspects. Thus, the current work can offer additional refinement to existent theoretical perspectives on the self and its representation.

The current studies

Our assumptions about self-concept structure are consistent with a number of viewpoints on the self is the view that the self is comprised of multiple, context-dependent selves (e.g., Baumeister, 1998; Linville & Carlston, 1994; cf., Allport, 1955; Rogers, 1951). Although there is research that acknowledges the existence of multiple selves (e.g., Higgins, 1987; Markus & Nurius, 1986; Roberts & Donahue, 1994), previous research says little about their representation and interrelation. Whereas considerable previous research has examined self-judgments following the priming of collective pronouns (e.g., Brewer & Gardner, 1996), the priming of close others (e.g., Hinkley & Andersen, 1996), or based on reported similarity of one's general traits with those ascribed to one's ingroups (e.g., Smith, Coats, & Walling, 1999), the current work focuses on how one's *idiosyncratic* self-knowledge reveals context-dependent activation across contexts that are not necessarily relational in nature. Study 1 examines the prediction that placing an individual in a context that activates a relevant self-aspect should increase the accessibility of idiosyncratic attributes associated with that self-aspect but not of attributes associated with other self-aspects even though they are still part of one's self-concept.

We also examined additional predictions about how the structure of the self-concept can impact self-relevant feedback and its consequences. First, life events (e.g., an accepted manuscript, a betraying lover) should not only activate a relevant self-aspect (Study 1), but the extent to which such events impact the individual overall (e.g., changes in mood) should be determined by how the feedback reflects on the self-aspect it activates. For instance, a lover's infidelity should, all things being equal, be more devastating to one's affect if one's preexisting evaluation of one's dating self-aspect was relatively positive instead of already abysmal. Study 2 examines the prediction that the impact of self-relevant feedback on affect will be more pronounced to the extent that the new information *changes* one's evaluation of the *activated* self-aspect. In other words, changes in affect should be based on the influence of feedback locally (i.e., at the level of self-aspect).

Moreover, Study 2 examines an intriguing prediction regarding self-concept structure and feedback about the self. Namely, because some self-aspects feature attributes associated with other self-aspects, it is anticipated that feedback about a self-aspect will impact evaluations of *other* self-aspects not directly implicated by the feedback received. For example, returning to Fig. 1, if Sarah's parents call and tell her that she is a wonderful daughter, it might not only improve her self-evaluation of her daughter self-aspect, but it might also enhance her appraisal of her girlfriend self-aspect as well because it shares two-thirds of its attributes with the self-aspect implicated by the feedback from her parents. Based on the self-concept's representation in memory, the impact of feedback on *other* self-aspects should be proportionate to the degree that other self-aspects share attributes with the self-aspect directly implicated by self-relevant feedback.

Finally, Study 3 addresses yet another way in which very specific, self-relevant feedback can impact one's overall affect. Rather than receiving feedback about a self-aspect, people can also obtain feedback about their attributes. Based on the current framework for self-concept representation, we can predict that feedback about an attribute will be especially impactful on overarching affect to the extent the attribute is associated with a greater number of self-aspects because general affect is determined by evaluations of one's accessible self-aspects. Thus, Study 3 examined how feedback about an attribute changes one's mood, evaluating the

prediction that mood changes should be proportionate to the number of self-aspects associated with the attribute.

To summarize, we conducted three studies to explore the self-concept organization and how its structure mediates reactions to self-relevant feedback. Study 1 evaluates the assumption that context activates idiosyncratic attribute knowledge associated with a relevant self-aspect and not other components of self knowledge. In Study 2, participants received either positive or negative experimental feedback about a particular self-aspect to examine how feedback affects mood and evaluations of other self-aspects. In Study 3, we examined how self-relevant feedback about a single attribute influences overall affect. Finally, we examine the mechanisms through which people lower in self-complexity show stronger changes in mood in Studies 2 and 3.

Participant prescreening

For these studies, we identified participants who possessed particular characteristics (e.g., self-aspects, attributes) to ensure that our instructions and experimental feedback would be self-relevant. Thus, we developed a pool of individuals from which particular participants were selected and returned to the laboratory to participate in one (and only one) of the three primary studies (to be discussed). This pool was comprised of 400 Miami University undergraduates who participated in return for research credit in their introductory psychology courses.

Procedure. Participants arrived at the laboratory and completed a computerized version of the self-concept description task used in past research (e.g., McConnell et al., 2005; Renaud & McConnell, 2002) and validated in the self-complexity literature (e.g., Linville, 1985, 1987). They were presented with a list of 40 traits attributes (developed by Showers, 1992): 20 positive (e.g., friendly, intelligent), 20 negative (e.g., insecure, irritable).³ They placed the attributes into groups that represented meaningful aspects of their lives. Using a computer interface, they selected the attributes for each self-aspect and provided a descriptive label for that self-aspect (e.g., my student self). Participants were told that they could use as many traits as they wanted for each self-aspect, could use any particular trait in more than one self-aspect, and did not have to use all of the traits provided (instructions were modeled after Linville, 1987). They were told to create as many self-aspects as were meaningful to them and to stop if they felt like they were straining to generate new ones. Based on their responses in this self-concept description task, a representation of one's self-concept similar to the example shown in Fig. 1 can be produced.

After participants completed the self-concept description task, they considered each self-aspect that they generated and provided several judgments about it (e.g., its socialness, importance). Of interest in the current work were evaluations of self-aspect positivity, which were assessed for each self-aspect on a scale ranging from 1 (*very negative*) to 7 (*very positive*).

Finally, participants completed a mood measure to provide a baseline measure of general affect against which changes following experimental manipulations in the primary studies could be assessed. Following Renaud and McConnell (2002), we assessed general affect using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). On the PANAS, participants consider 10 positive mood adjectives (e.g., inspired) and 10 negative

³ Although we (e.g., Schleicher & McConnell, 2005) have used a more comprehensive pool of attributes to capture non-trait information (e.g., physical attractiveness, affective responses, social categories) in past work, we chose to use trait attributes in the current study because they provided simple-to-evaluate stimuli (e.g., confident, irritable) instead of more complex items used to capture features such as physical appearance or affective responses, which was especially important for some of the measures (e.g., a lexical decision task) used in the current work.

mood adjectives (e.g., distressed), reporting how strongly they feel each adjective “right at that very moment” on scales ranging from 1 (*very slightly*) to 5 (*extremely*). The relative amount of positive affect was calculated by computing the mean of the 10 items relevant to positive affect ($\alpha = .86$) and to negative affect ($\alpha = .75$) and then subtracting the negative affect score from the positive affect score. Thus, larger, positive scores indicated relatively greater positive affect.⁴ After completing the PANAS, participants were thanked for their participation, and they provided contact information (used for recruitment in the follow-up studies).

Study 1: the self is comprised of multiple, context-dependent self-aspects

Our account of self-concept structure, as well as several perspectives on the self, assumes that the self is comprised of multiple, context-dependent self-aspects, each associated with idiosyncratic attributes. It is expected that a particular context will activate a relevant self-aspect, increasing the accessibility of attributes idiosyncratically associated with that self-aspect for each participant. Study 1 explored this prediction for three reasons. First, there is an assumption that people can accurately report on attributes that comprise their self-aspects. However, people's self-descriptions may be positively biased (e.g., Greenwald, 1980) or unable to capture relevant knowledge in memory (e.g., Bargh & Chartrand, 1999; Nisbett & Wilson, 1977; Wilson, Lindsey, & Schooler, 2000). Despite the widespread use of self-concept description tasks in the literature (e.g., Linville, 1985; McConnell et al., 2005; Showers, 1992), we are unaware of any work providing corroborating evidence (in the current study, using lexical decision tasks) for their validity. Second, the assumption that context would activate, and *only* activate, self-knowledge associated with a relevant self-aspect is at the heart of the structure of the self-concept presented here and the hypotheses evaluated in Studies 2 and 3. Thus, if such a finding does not obtain, the presumed processes underlying self-relevant feedback we outlined above could not operate. Third, it is of interest to examine whether the activation of one self-aspect inhibits the activation of other self-aspects. Specifically, one might predict inhibition of nonactivated self-aspects, based on findings in the stereotyping literature (e.g., Bodenhausen & Macrae, 1998) and on conclusions one might draw from work studying people who are members of multiple social group categories (e.g., Pittinsky, Shih, & Ambady, 1999). Further, work by Hugenberg and Bodenhausen (2004) found some evidence that the activation of one self identity led to the inhibition of another self identity (e.g., inhibition of one's student self when one's Greek self was primed), but it is not clear whether such effects would be revealed for one's own idiosyncratic reports of self-concept representation. That is, Hugenberg and Bodenhausen and Pittinsky et al. did not measure participants' own self-concepts. Instead, they only assessed general knowledge associated with student and Greek life or Asians and Women. Thus, exploring the mechanisms underlying

self-aspect activation addresses several important issues related to self-knowledge in particular.

Method

Participants

A sample of 25 undergraduates selected from the prescreening pool (hereafter, Session 1) participated in return for additional research credit in their psychology courses (age $M = 19.12$, $SD = 1.20$; 15 women). They were selected because their Session 1 self-concept description had a self-aspect related to either being a student ($n = 15$) or to dating ($n = 10$).⁵

Procedure

Participants returned to the laboratory for Session 2 (at least 2 weeks after Session 1) and were asked to take part in a computer task that had three parts. In the first part, participants completed a baseline lexical decision task in which they decided whether a presented letter string was a word or a nonword using two keys on a computer keyboard (“d” key or “k” key, counterbalanced between subjects). They were told to make these judgments as quickly as possible while also minimizing mistakes. There were 320 trials in the baseline session, presented in four blocks of 80 trials each, with a rest period between each block. In each block, there were 40 trait words used in the Session 1 self-concept description task and 40 pronounceable nonwords (order was randomized within block). Thus, each trait attribute from the self-concept description task was presented 4 times during the baseline session (once per block). Mean response latencies for each trait word across the four blocks served as a baseline measure of accessibility for that word.

After completing the baseline lexical decision task, participants engaged in a *writing task* to activate their student self-aspect or their relationship self-aspect, based on their experimental condition assignment (those who had both student and relationship self-aspects were randomly assigned to one of the conditions). Specifically, participants were told (with student self-aspect directions in italics and relationship self-aspect directions in brackets):

“For the next 5 minutes think about *yourself as a student in college* [what you are like in romantic relationships]. On the piece of paper provided, write down what comes to mind in as much detail as possible. It is important that you think about what you are like *as a student in college* [in romantic relationships] during this 5 minute period and are as detailed in your description of your thoughts as possible. A new screen will appear in 5 minutes telling you when you should stop writing.”

After 5 min, the computer introduced a second, *post-manipulation* lexical decision task that was identical to the baseline lexical decision task. Once again, there were 320 trials presented in four blocks of 80 trials (40 trait words, 40 nonwords). The critical data of interest were the mean response latencies for each of the 40 trait words across the 4 post-manipulation blocks.

Results

Error rate and data exclusion

The overall error rate was low (2.5% of trials) and all incorrect responses were excluded from the data analyses. In addition,

⁴ In this work, we focused on changes in mood as our general affect outcome variable because of its emphasis in a number of relevant literatures (e.g., Bodenhausen et al., 1994; Gasper, 2003; Linville, 1985). As one would expect based on random assignment, initial mood did not vary between our experimental conditions in our experiments, $F_s < 1$. Although there was probably some degree of fluctuation in mood reports between our prescreening and experimental sessions, the difference score approach used in the current work allows us to control for some degree of individual differences in day-to-day affect. We also explored whether self-esteem, as assessed by the Rosenberg (1965) self-esteem measure, might reveal effects on broader conceptions of self-worth (this was measured directly before the PANAS). Although the Rosenberg measure was reliable, change in self-esteem effects were weaker than change in mood effects and not significant at conventional levels. Thus, no further discussion of the self-esteem measure is presented.

⁵ We selected these two self-aspects as “target self-aspects” in Studies 1 and 2 to increase the generalizability of our results and because pretesting indicated they were the two most frequently named self-aspects in our subject population (60% of them listed a self-aspect that could be clearly identified as a student or dating self-aspect). Analyses indicated that neither subject sex nor type of target self-aspect (e.g., dating vs. student) qualified any of the results to be reported. Thus, we collapsed across these factors in our analyses in these studies.

correct response latencies that were 3 *SD* above that participant's mean latency for the trials in the baseline session (0.04% of trials) were excluded from the data analyses.

Accessibility measures

To examine if activating a self-aspect increased the accessibility of trait attributes associated with it on the self-concept description task, the 40 trait attributes were, for each participant, divided into 3 types: traits used by the participant to describe the targeted self-aspect (student or relationship self; *targeted traits*; for the average participant, $M = 7.64$; $SD = 3.78$), traits used by the participant to describe other self-aspects but not used in the targeted self-aspect (*nontargeted traits*; $M = 15.69$; $SD = 7.89$), and those traits not used by the participant in the self-concept description task at all (*irrelevant traits*; $M = 16.67$; $SD = 7.99$). Each participant had traits that fell into the three categories. The mean response latencies before and after the writing task manipulation were calculated for each participant for each type of trait.

The latencies were analyzed with a 2 (time: pre vs. post-manipulation) \times 3 (trait type: targeted, nontargeted, irrelevant) repeated-measures ANOVA. This analysis revealed a main effect of time, $F(1, 23) = 7.23$, $p < .02$. In line with practice effects, participants took less time to make lexical decisions in the post-manipulation trials ($M = 612.71$ ms) than in the premanipulation trials ($M = 651.03$ ms). In addition, the predicted interaction was significant, $F(2, 46) = 3.57$, $p < .04$. As shown in Fig. 2, the simple effect of trait type was not significant for the premanipulation trials, $F < 1$. However, for the post-manipulation trials, there was a significant effect of trait type, $F(2, 48) = 6.84$, $p < .005$. Specifically, the response latencies were faster for the targeted traits than for the nontargeted traits, $t(24) = 2.62$, $p < .02$, and were also faster for the targeted traits than for the irrelevant traits, $t(24) = 3.15$, $p < .005$. No differences in response latencies between the nontargeted and irrelevant traits were observed, $t < 1$. The only reliable effect of time was on the targeted traits, $t(24) = 3.61$, $p < .001$. These data show that when participants activated a particular self-aspect (through the writing task), the attributes associated only with that self-aspect became more accessible.

Discussion

As expected, greater accessibility (i.e., relatively faster latencies in responding to trait attributes in the post-manipulation period

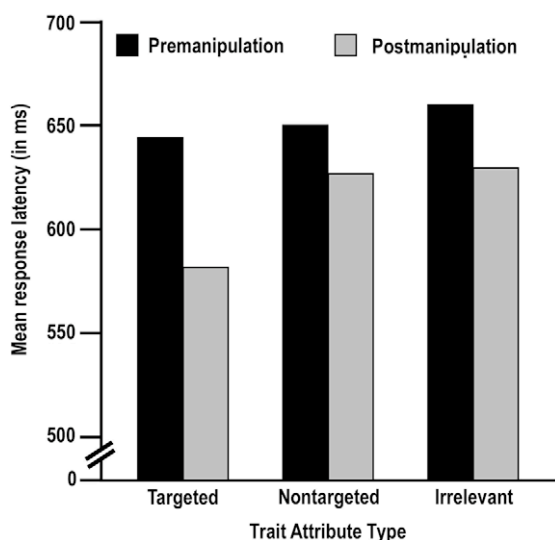


Fig. 2. Mean response latencies for lexical decision task in Study 1 as a function of trait type and time (pre-manipulation vs. post-manipulation).

than the premanipulation period) was observed for attributes associated with the targeted self-aspect. This suggests that participants can report on their self-aspects and associated attributes, and that the activation of a particular self-aspect (in this case, by priming) resulted in the increased accessibility of attributes associated with that self-aspect. In addition, we observed no evidence that attributes for nontargeted self-aspects were inhibited (i.e., slower response latencies). Perhaps in some circumstances, inhibition of attributes associated with nontargeted self-aspects occurs (e.g., a student focusing on her academic studies may need to actively inhibit sorority sister knowledge to prepare for an exam). However, in the current work, nontargeted traits did not differ from irrelevant traits even when those traits were idiosyncratically descriptive for each participant. On the other hand, one might wonder whether some subtle activation of nontargeted self-aspects might occur through associations with shared attributes. In all likelihood, a sufficiently sensitive index of attribute overlap would be needed to observe such an outcome (and Study 2 addresses this issue). And perhaps, there was some concurrent inhibition and activation of nontargeted self-aspects, producing offsetting results. At the very least, the current findings provide strong support for the assumption that activating a self-aspect increases the accessibility of attributes associated with that particular multiple self.

Study 2: implications of feedback about a self-aspect

Having shown that context activates only a relevant self-aspect and its idiosyncratic attributes, we now examine what occurs when one receives feedback about a self-aspect (hereafter, a *targeted self-aspect*). Based on a self-concept representation that focuses on the importance of self-aspects, a number of consequences can be forwarded. First, we would expect that change in general affect that results from self-aspect feedback should be accounted for by how that self-relevant information impacts appraisals of the targeted self-aspect. This leads to the prediction that although the valence of self-aspect feedback should influence general affect (e.g., more positive mood following positive feedback, more negative mood following negative feedback), this effect should be accounted for (i.e., mediated) by changes in the evaluation of the targeted self-aspect. Such a finding would underscore the importance of the evaluation of one's targeted self-aspect (i.e., the self-aspect currently activated because of the feedback) in determining one's mood. In other words, predicting a global outcome (i.e., mood change) requires understanding the impact of self-relevant feedback at the level of the self-aspect.

In addition, two other hypotheses were examined. First, because we emphasize the role of changes in targeted self-aspect evaluations in determining affective experiences, we examined whether changes in appraisals of targeted self-aspects (i.e., the mediator from the primary analysis) could account for affective spillover effect in the self-complexity literature. Second, we expected to replicate the affective spillover effect by observing a valence of feedback by self-complexity interaction in predicting changes in mood (i.e., those lower in self-complexity having more negative moods following negative feedback and more positive moods following positive feedback, replicating past self-complexity findings; Linville, 1985; Renaud & McConnell, 2002). But more important, we explored whether this interaction could be accounted for by changes in targeted self-aspect evaluation. Such a finding would once again implicate the importance of appraisals of activated self-aspects in accounting for general affect (specifically, the relation between lower self-complexity and stronger mood swings; Linville, 1985). Although there have been several demonstrations that those lower in self-complexity experience stronger affective reactions to self-relevant feedback (e.g., Linville,

1985; Renaud & McConnell, 2002), no study has articulated or tested a mechanism through which this spillover effect occurs. We expect that changes in the evaluations of one's targeted self-aspects will determine changes in one's overall affect, and thus, account for affective spillover effects. Such a finding would not only provide a mechanism to account for spillover effects, but it would also indicate that not all people lower in self-complexity will experience affective spillover. That is, when feedback has no impact on one's self-aspect evaluation at all, even individuals lower in self-complexity should not show changed mood. Such an outcome would provide a novel moderator to the well-established spillover effect (cf., Linville, 1985).

Finally, we examined another prediction derived from the current framework of self-concept representation. That is, self-aspect feedback should not only determine one's general affective state, but it should also impact evaluations of nontargeted self-aspects (i.e., those not directly implicated by the feedback) via shared attributes. Specifically, self-relevant feedback should alter evaluations of nontargeted self-aspects more strongly when they share a greater proportion of attributes with the targeted self-aspect. This reasoning anticipates an interaction between valence of feedback and proportion of attribute overlap (between the targeted and nontargeted self-aspects) in predicting changes in evaluations of nontargeted self-aspects. In other words, by placing importance on self-aspects and their (sometimes) overlapping attributes, an index of local self-concept structure (i.e., proportion of attribute overlap) can be computed and used to predict a novel outcome of self-relevant feedback (i.e., changes in evaluations of nontargeted self-aspects that are connected in memory through shared attributes).

Method

Participants

Sixty undergraduates who participated in the Session 1 prescreening returned several weeks later for the current study (hereafter, Session 2), receiving additional research credit in their courses (age $M = 18.88$, $SD = 1.11$; 46 women). As in Study 1, those who reported either having a student self ($n = 40$) or a dating self ($n = 20$) in Session 1 were eligible for participation in the current study.

Upon arriving to the laboratory, participants were asked to complete a computer task consisting of three components. The first task was a "personality test" based on a modified procedure developed by McConnell, Rydell, and Leibold (2002). Specifically, participants were told that they would complete the "visual personality test," which purportedly was accurate in assessing people's personalities. The visual personality test presented a series of 24 ambiguous, inkblot-like images, and for each inkblot, participants indicated which of five responses (e.g., Viking ship, people holding hands, jeans in a washer) best describes it. Participants responded to the inkblots at their own pace without any feedback being provided while responding to them.

After responding to the inkblots, participants received (based on random assignment) noncontingent feedback about their targeted self-aspect (relationship self or student self, identified from Session 1). They were told that this feedback was based on the responses they provided during the visual personality test. In the *positive feedback* condition, participants were told (student feedback in italics, romantic relationship feedback in brackets):

"Based on analyses of your performance on the Visual Personality Task, your responses indicate that you are a superior college student [partner in romantic relationships]. In fact, your responses indicate that you are in the top 10% of college students in terms of having success in college [fulfilling romantic relationships]."

Those in the *negative feedback* condition were told the same, except that "bottom 10%" replaced the words "top 10%" and "inferior" replaced "superior". The feedback was presented for 30 s.

During the third computer task, participants rated the positivity of each of the self-aspects that they produced during the Session 1 self-concept description task. Finally, they completed the PANAS (positive $\alpha = .86$, negative $\alpha = .75$) to assess post-manipulation affect.

Results

Measures and manipulation checks

Mood difference scores for each session were calculated by computing the mean response to the 10 positive mood adjectives and subtracting the mean response to the 10 negative mood adjectives (Renaud & McConnell, 2002). Next, a *mood change score* was computed by subtracting the Session 1 and Session 2 mood difference scores, with larger, positive mood change scores indicating relatively more positive affect at Session 2 (post-feedback) relative to Session 1. Although the mood change score was an outcome variable of interest, it also established the effectiveness of the feedback manipulation. As expected, those in the positive feedback condition reported more positive mood change ($M = 2.00$) than those in the negative feedback condition ($M = -1.87$), $t(58) = 2.11$, $p < .03$.

Also, recall that the experimental feedback was about a particular targeted self-aspect (i.e., student or relationship). As a result, one can assess the effectiveness of the manipulation on changes in positivity toward the targeted self-aspect. Thus, the positivity assigned to the targeted self-aspect at Session 1 was subtracted from the positivity assigned to the targeted self-aspect at Session 2, producing a *targeted self change score* (greater scores indicated that participants felt relatively more positive about the targeted self-aspect following the feedback). As expected, participants evaluated the targeted self-aspect more favorably following positive feedback about it ($M = 0.69$) than after receiving negative feedback about it ($M = -.26$), $t(58) = 2.09$, $p < .05$.

Finally, following previous research (e.g., Linville, 1985, 1987; McConnell et al., 2005; Woolfolk et al., 1995), a self-complexity score was computed for each participant using the H statistic (Scott, 1969), which takes into account the number of self-aspects generated and the degree to which the distribution of attributes across self-aspects are unique:

$$H = \log_2 n - (\sum_i n_i \log_2 n_i) / n,$$

where n is the total number of trait attributes available to the participant (40 in this study) and n_i is the number of attributes that occur within each particular group combination (i) across the self-aspects reported by the participant (for extensive discussion, see Linville, 1987; Rafaeli-Mor et al., 1999; Woolfolk et al., 1995). Larger H scores reflect greater self-complexity (i.e., having more self-aspects comprised of more differentiated attributes). As expected, self-complexity did not vary as a function of feedback condition ($M = 2.75$; $SD = 0.82$), $t(58) = 0.74$, *ns*.

Changes in mood

Having already observed that the experimental feedback altered participants' mood from Session 1 to Session 2, we now turn to whether changes in evaluations of the targeted self-aspect can account for (i.e., mediate) this effect (Baron & Kenny, 1986). As noted previously, valence of feedback (i.e., the independent variable) reliably predicted both the mood change score (i.e., the dependent variable) and the targeted self change score (i.e., the mediator). As Fig. 3 shows, the targeted self change score predicted mood change as well, satisfying the conditions necessary to test for mediation. Thus, we simultaneously regressed the mood change score

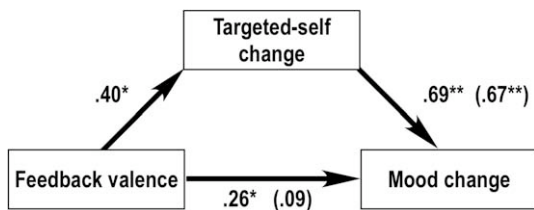


Fig. 3. Evaluations of the targeted self-aspect mediate the relation between feedback valence and mood in Study 2. Coefficients in parentheses are parameter estimates for a regression model containing both effects. ** $p < .01$, * $p < .05$.

on the valence of the self-aspect feedback (coded +1 for positive feedback, -1 for negative feedback) and the targeted self-change score.⁶ This analysis revealed that the targeted self change score continued to predict the mood change score, whereas the valence of feedback did not. Further, a Sobel test indicated that the decrease in variance accounted for by feedback valence in predicting mood change was significant, $z = 2.00$, $p < .05$, indicating mediation. Thus, changes in evaluations of the activated self-aspect can account for how the feedback changed participants' mood, affirming the importance of relevant self-aspect evaluation in affective experiences.

Accounting for the self-complexity spillover effect following feedback about a self-aspect

Because the previous analysis supported the causal role of changes in evaluation of the targeted self-aspect in determining how self-relevant feedback impacts one's mood, we next considered whether the same mediator could account for affective spillover effects (i.e., those lower in self-complexity reporting greater mood swings in line with the valence of self-relevant feedback). First, it was necessary to establish that affective spillover occurred in this study. Thus, a multiple regression analysis was conducted regressing mood change scores on valence of feedback (coded as before), self-complexity (H), and their interaction (a product term). This analyses revealed a main effect of feedback, $\beta = 1.84$, $t = 4.59$, $p < .001$, and the predicted interaction between feedback and self-complexity, $\beta = -1.65$, $t = 4.11$, $p < .001$.

To ensure that this interaction did indeed reveal a pattern consistent with affect spillover, zero-order correlations between self-complexity and mood change scores were computed separately for the negative and positive feedback conditions. As expected, those lower in self-complexity reported relatively more negative affect following negative feedback, $r = .44$, $p < .02$. And also as anticipated, those lower in self-complexity reported relatively greater positive affect following positive feedback, $r = -.51$, $p < .01$. Thus, affective spillover effects were observed in both valence conditions, with those lower in self-complexity showing stronger mood shifts in a direction consistent with the valence of the self-relevant feedback they received.

Having replicated affective spillover effects in both the negative and positive feedback conditions, we next examined whether changes in the evaluation of the targeted self-aspect could account

⁶ In all multiple regression analyses reported, interaction terms were orthogonal to their constituent variables either because of their coding or through centering (Aiken & West, 1991). Also, although some predictor variables were correlated to each other, analyses of variance inflation factors (VIFs) revealed no evidence that multicollinearity might provide interpretation concerns (VIFs < 2.0) because they were far below values that might indicate interpretation issues (i.e., VIFs > 10; see Neter, Kutner, Nachtsheim, & Wasserman, 1996). Also, it is important to note that an index of changes in evaluations of the nontargeted self-aspects could not serve as a mediator in this analysis because it did not meet the criteria for mediation (i.e., it was unrelated to the independent variable), which serves to underscore the value of considering changes in evaluations of the targeted self-aspect in understanding the impact of self-relevant feedback.

for these effects. Thus, two separate mediational analyses (one for each feedback condition) were conducted. As the top panel of Fig. 4 reveals for the negative feedback condition, simple regressions showed that self-complexity (the independent variable) predicted both mood change score (the dependent variable) and the targeted self change score (the mediator), and the latter predicted mood change as well. Next, to evaluate the mediational role of changed evaluations of the targeted self-aspect, the mood change score was simultaneously regressed on self-complexity and on the targeted self change score. As Fig. 4 indicates, although the targeted self change score continued to predict mood change, self-complexity no longer predicted mood change. A Sobel test indicated that the reduction in variance accounted for between self-complexity and mood change was significant, $z = 2.06$, $p < .04$, indicating mediation by evaluations of the activated self-aspect in explaining the affective spillover effect.

The bottom panel of Fig. 4 presents the mediational analysis for participants in the positive feedback condition. Once again, simple regressions revealed that self-complexity (the independent variable) predicted both mood change score (the dependent variable) and the targeted self change score (the mediator), which also predicted mood change. To test the mediational role of changes in evaluations of the targeted self-aspect on affective spillover, the mood change score was simultaneously regressed on self-complexity and on the targeted self change score. And as Fig. 4 reveals, although the targeted self change score continued to predict mood change, the relation between self-complexity and mood change was no longer reliable (and this reduction in variance accounted for was significant, $z = 2.63$, $p < .01$). Once again, these findings provide clear evidence for mediation, supporting the prediction that changes in appraisals of the targeted self-aspect can account for the affective spillover effect.

The implications of self-aspect feedback for evaluations of other self-aspects

In addition to self-aspect feedback impacting one's mood and one's evaluation of the targeted self-aspect, evaluations of nontargeted self-aspects should also be influenced by the feedback in proportion to the number of attributes they share with the targeted self-aspect. That is, feedback about a self-aspect should implicate the attributes associated with it (Study 1), and to the extent those

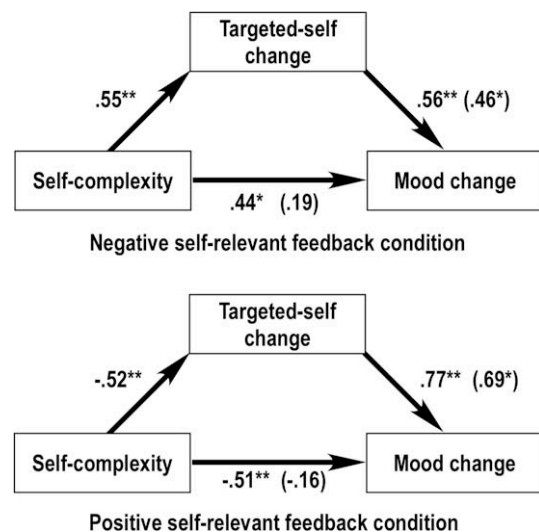


Fig. 4. Mediational analyses for negative (top panel) and positive (bottom panel) self-aspect feedback conditions in Study 2 for self-complexity spillover effects. Coefficients in parentheses are parameter estimates for a regression model containing both effects. ** $p < .01$, * $p < .05$.

attributes are also associated with other self-aspects, evaluations of those other self-aspects should be impacted as well.

To assess this prediction, we first calculated a *nontargeted self difference score*, which reflects the mean change (Session 2 - Session 1) in evaluations of the nontargeted self-aspects. Larger values indicated a relatively more positive evaluation of the average nontargeted self-aspect following the experimental feedback, relative to Session 1. Next, we computed a *proportion of attribute overlap* score, which was the mean proportion of attributes nontargeted self-aspects shared with the targeted self-aspect for each participant. Larger scores indicated that the average nontargeted self-aspect shared a greater proportion of its attributes with the targeted self-aspect. With respect to this prediction, we anticipated an interaction between the valence of feedback and the proportion of attribute overlap in predicting the nontargeted self difference score. Specifically, the strongest shifts in evaluations of the nontargeted self-aspects should occur for those with greater attribute overlap, with the direction of those shifts being determined by the valence of the experimental feedback provided about the targeted self-aspect.

Thus, we simultaneously regressed the nontargeted self difference score on the valence of the feedback, the proportion of attribute overlap, and their interaction. The only unique predictor was the interaction term, $\beta = 0.49$, $t = 2.15$, $p < .04$. To understand this interaction, we plotted the nonstandardized regression weights with the nontargeted self difference score on the y-axis, the proportion of attribute overlap ($\pm 1SD$ from the M) on the x-axis, and lines depicting those in the negative and positive feedback conditions. As Fig. 5 reveals, changes in evaluations of the nontargeted self-aspects were more reflective of the valence of the experimental feedback when nontargeted self-aspects shared a greater proportion of attributes with the targeted self-aspects. Thus, feedback about a particular self-aspect affected evaluations of the other self-aspects more strongly (and in line with the valence of the information) when those nontargeted self-aspects shared a greater proportion of attributes with the targeted self-aspect.

Discussion

The current study provides several significant contributions to our understanding of the self. First, we saw that how self-relevant

feedback affected one's mood was determined by how that information impacted evaluations of the currently activated (or targeted) self-aspect. Also, we observed that the evaluation of the targeted self-aspect could account for the affective spillover finding fundamental to the self-complexity literature. Not only does this work provide a process account for how affective spillover occurs, this study provides an important moderator for the self-complexity literature by showing how not everyone lower in self-complexity will reveal spillover effects. That is, spillover is less likely when feedback has little impact in changing targeted self-aspect evaluations, even for people lower in self-complexity (who, based on the existent literature, would be expected to show strong spillover effects in all cases). Overall, the current work indicates that feedback activates a relevant self-aspect (Study 1) and that subsequent changes in general affect can be determined by how evaluations of that self-aspect are impacted (Study 2), reaffirming that general affective outcomes are determined at a relatively local level in the self (i.e., by evaluations of activated self-aspects).

Moreover, the current work also demonstrated that feedback about a self-aspect not only changes evaluations of that context-dependent self, but it can alter evaluations of other self-aspects that are also associated with attributes of the targeted self-aspect. Specifically, we observed that feedback about the targeted self-aspect impacts other self-aspects via their associations with common attributes. On the other hand, it was clear that self-relevant feedback did not change evaluations of self-aspects across the board, but only those associated with larger proportions of common attributes.

Study 3: implications of feedback about an attribute

Although Study 2 explored how feedback about a self-aspect impacts one's general affective state, sometimes people receive information about their attributes instead of their self-aspects. Once again, we expected that general affect should be determined at the local level, by evaluations of one's currently activated self-aspects. Thus, all things being equal, feedback about an attribute should have stronger effects on mood when the attribute is associated with more self-aspects but have negligible consequences for mood when the attribute is associated with relatively few self-aspects. In our final study, we explored the hypothesis that attribute feedback would have a greater impact on affect when the attribute is associated with a greater number of self-aspects. If true, we would expect to observe an interaction between the valence of feedback about an attribute and the number of self-aspects associated with it. Moreover, if affective spillover is observed in the current study (i.e., those lower in self-complexity reveal stronger mood changes following attribute feedback), we could examine if the number of self-aspects associated with the attribute could account for the effect.

Method

Participants

A sample of 59 undergraduates from the Session 1 prescreening returned weeks later in exchange for additional research credit (age $M = 18.98$, $SD = 0.99$; 34 women). To be recruited for Session 2, participants during the Session 1 self-concept description task had to describe at least one of their self-aspects as possessing a targeted trait attribute, either "intelligent" ($n = 30$) or "outgoing" ($n = 29$).⁷

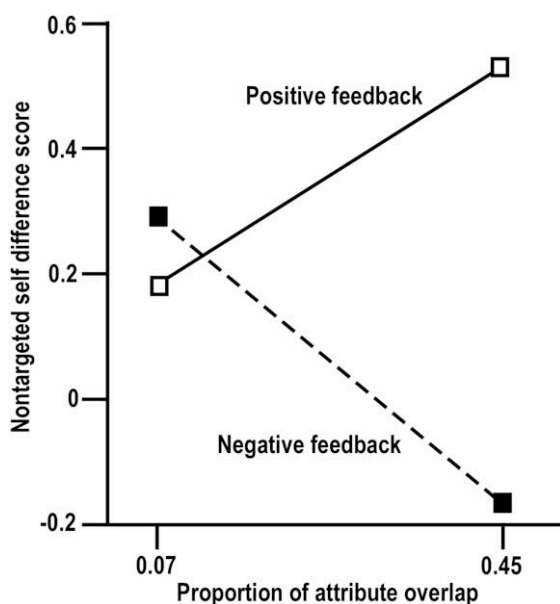


Fig. 5. Two-way interaction of valence of feedback and mean proportion of attribute overlap with the targeted self-aspect in predicting nontargeted self difference scores in Study 2.

⁷ We selected these two targeted trait attributes because participants in our subject population reported that being "intelligent" and "outgoing" were desirable qualities and because they provided generalizability for our work (i.e., an intellectual trait and a social trait). Analyses indicated that type of targeted trait attribute (e.g., intelligent vs. outgoing) did not qualify any of the results to be reported, thus we collapsed across target trait type in our analyses.

Procedure

Upon arriving for Session 2, participants were asked to complete a three-part computer task. As in Study 2, they completed “the visual personality test,” evaluating 24 ambiguous inkblots. Next, they were randomly assigned to receive noncontingent feedback about the *targeted* trait attribute (intelligent or outgoing; if the participant used both traits in their self-concept description task, they were randomly assigned to either the intelligent or outgoing condition), which was presented on the monitor for 30 s. In the *positive feedback* condition, they were told that (with the intelligent feedback in italics and the outgoing feedback in brackets):

“Based on analyses of your performance on the Visual Personality Task, your responses indicate that you are a very *intelligent* [outgoing] college student. In fact, your responses indicate that you are in the top 10% of college students in terms of *intelligence* [outgoingness]”.

Those in the *negative feedback* condition were told the same, except that “top 10%” was replaced with “bottom 10%” and the word “are” (in the first sentence of the feedback presented) was replaced with “are not.” Finally, they completed the PANAS before being thanked and debriefed.

Results

Manipulation checks

As in Study 2, a *mood change score* was computed by subtracting the Session 1 mood difference score from the Session 2 mood difference score (positive mood adjectives $\alpha = .89$, negative mood adjectives $\alpha = .76$). Thus, larger, positive mood change scores indicated participants reporting relatively more positive affect following attribute feedback in comparison to Session 1. Confirming the effectiveness of the experimental feedback manipulation, mood change scores were more positive in the positive feedback condition ($M = 2.45$) than in the negative feedback condition ($M = -3.40$), $t(57) = 3.24$, $p < .01$. Also, as expected with random assignment, self-complexity (computed using the H statistic described in Study 2) did not vary as a function of feedback condition ($M = 2.19$; $SD = 0.80$), $t(57) = 0.84$, *ns*.

Changes in mood

Having demonstrated that the feedback manipulation was effective in changing mood, we next focused on our central hypothesis: this effect should be especially strong when the targeted attribute is associated with relatively more self-aspects. Thus, we calculated a *proportion of self-aspects* measure for each participant, with larger values indicating that a greater proportion of one's self-aspects were associated with the targeted trait attribute ($M = 0.44$; $SD = 0.23$). To test the prediction, we simultaneously regressed participants' mood change scores on valence of feedback (coded +1 for positive feedback, -1 for negative feedback), proportion of self-aspects, and their interaction product term. This analyses revealed a main effect of feedback, $\beta = -.69$, $t = 3.14$, $p < .01$, and more important, the predicted interaction, $\beta = 1.21$, $t = 5.53$, $p < .001$. To explore this outcome, we plotted the nonstandardized regression weights with the mood change score on the y-axis, the proportion of self-aspects associated with the targeted trait attribute ($\pm 1SD$ from the M) on the x-axis, and lines depicting those in the negative and positive feedback conditions. Fig. 6 reveals that the nature of the interaction was consistent with predictions. Specifically, self-relevant feedback had the strongest impact on changing mood (in a direction consistent with its valence) when a greater proportion of self-aspects were associated with the targeted trait.

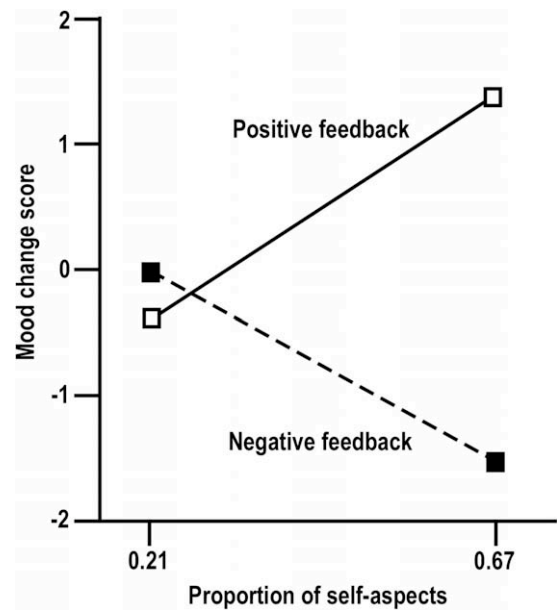


Fig. 6. Two-way interaction of valence of feedback and proportion of self-aspects associated with the targeted trait attribute in predicting mean change in mood in Study 3.

Accounting for the self-complexity spillover effect following feedback about an attribute

Finally, we examined whether the current findings might shed light on the self-complexity affective spillover effect. First, we explored whether the spillover effect was observed in the current study by simultaneously regressing mood change scores on valence of feedback (coded as before), self-complexity (H), and their interaction. This analysis revealed a main effect of feedback, $\beta = 1.40$, $t = 4.16$, $p < .001$, and the predicted interaction, $\beta = -1.07$, $t = 3.20$, $p < .01$. To examine this interaction in detail, zero-order correlations between self-complexity and mood change scores were computed separately for the negative and positive feedback conditions. As expected, those lower in self-complexity reported more negative affect following negative feedback, $r = .36$, $p < .05$. Also as anticipated, those lower in self-complexity reported greater positive affect following positive feedback, $r = -.43$, $p < .02$. Thus, we replicated the affective spillover effect in both valence conditions using self-relevant feedback about an attribute instead of a self-aspect (Study 2).

Next, we explored whether the proportion of self-aspects associated with the targeted trait attribute could account for this effect. Thus, we conducted two different mediational analyses (one for the negative feedback condition, the other for the positive feedback condition). For each, we examined whether the measure of proportion of self-aspects could mediate the relation between self-complexity (the independent variable) and mood change score (the dependent measure). As the top panel of Fig. 7 reveals for negative feedback, simple regressions found that the conditions necessary to test for mediation were met. Next, the mood change score was simultaneously regressed on self-complexity and on the proportion of self-aspects score. As Fig. 7 reveals, mood change was still reliably predicted by the proportion of self-aspects but not by self-complexity, and the reduction in variance accounted for by self-complexity was significant, $z = 2.03$, $p < .04$. Thus, strong evidence for mediation by the proportion of self-aspects associated with the targeted attribute was observed.

Similarly, a mediational analysis was conducted for participants in the positive feedback condition (bottom panel of Fig. 7). Simple regressions indicated that the conditions for testing for mediation

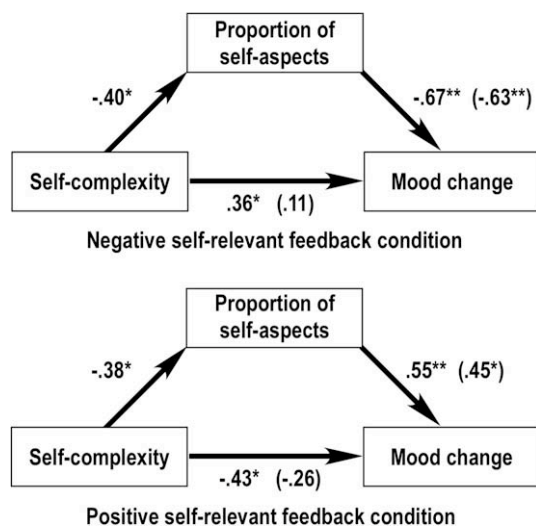


Fig. 7. Mediation analyses for negative (top panel) and positive (bottom panel) attribute feedback conditions in Study 3 for self-complexity spillover effects. Coefficients in parentheses are parameter estimates for a regression model containing both effects. $^{**}p < .01$, $^*p < .05$.

were met. Thus, the mood change score was simultaneously regressed on self-complexity and on the proportion of self-aspects measure. Although the proportion of self-aspects continued to predict mood change, the once-significant relation between self-complexity and mood change was no longer reliable. A Sobel test found the reduction in explained variance was marginally significant, $z = 1.66$, $p < .10$. This provides evidence for partial mediation by the proportion of self-aspects score when feedback about the attribute was negative because its inclusion in the regression equation rendered the link between self-complexity and mood change non-significant while the mediator still predicted a significant amount of variance in the outcome variable. Overall, when considering the negative and positive feedback conditions together, there appears to be compelling evidence that the degree to which the targeted trait attribute was associated with one's self-aspects can provide a reasonable account for how those lower in self-complexity experienced greater affective changes following attribute feedback.

Discussion

Study 3 once again affirmed the importance of one's self-aspects in the experience of affect. Specifically, feedback about a personally-relevant attribute had an impact on one's mood, especially when the attribute was associated with a greater proportion of one's self-aspects. This finding supports our position that general affect can be explained by considering self-concept structure at the level of self-aspects. In addition, the proportion of self-aspects associated with the critical trait attribute also accounted for self-complexity spillover effects. Specifically, those lower in self-complexity reported stronger mood swings in line with the valence of self-relevant feedback, and the number of self-aspects associated with the targeted attribute could explain this effect. Study 3 provided further insights into how affective spillover effects occur. Although H attempts to capture both the number of self-aspects and the degree of attribute overlap among them for the entire self-concept (cf., *Rafaeli-Mor et al., 1999*), the calculation of proportion of self-aspects featuring the critical self-aspect provides a more precise and more local index of this mechanism (i.e., number self-aspects implicated by self-relevant feedback) by which those lower in self-complexity reveal greater mood swings. And as in Study 2, the current findings indicate that spillover effects will

be greatly diminished even for people lower in self-complexity when self-relevant feedback implicates a relatively smaller proportion of one's self-aspects.

General discussion

The current work explored the prediction that one's self-concept is comprised of a number of context-dependent self-aspects, each of which is associated with attributes reflecting one's personal qualities in those contexts. One assumption of our model of self-structure that focuses on the importance of self-aspects, also echoed elsewhere (e.g., *Higgins, 1987; Markus & Nurius, 1986*), is that social context activates a subset of self-knowledge, which in turn serves to guide behavior. Study 1 activated a self-aspect through priming and found that only idiosyncratic self-relevant knowledge associated with that self-aspect increased in accessibility, providing evidence that people possess context-dependent, multiple selves and that only specific subsets of relevant self-knowledge are active at any given time.

Another important question that we addressed is how affect reflects the evaluation of accessible self-aspects. We found that self-relevant feedback activates relevant self-aspects (Study 1) and its influence on general affect is determined in part by how that information impacts appraisals of self-aspects. The findings of Study 2 indicate that feedback about one's self-aspects changed one's mood because it altered evaluations of the currently activated (or targeted) self-aspect. For example, receiving very positive feedback about one's student self-aspect improved overall mood to the extent that it elevated one's appraisal of that self-aspect. In Study 3, when participants received feedback about an attribute, the self-relevant information had a greater impact on mood when the attribute was associated with relatively more self-aspects (and thus could have a greater impact on overall affect). To summarize, understanding the impact of self-relevant feedback (either about self-aspects or about attributes) requires considering its implications for evaluations of one's activated multiple selves.

The notion that one's self-concept has implications for the experience of affect is clearly not new. Indeed, research ranging from self-regulation (e.g., *Carver & Scheier, 1998; Higgins, 1997*) to self-complexity (e.g., *Linville, 1985; Renaud & McConnell, 2002*) examines such outcomes. However, self-regulation research focuses on how affect is experienced with respect to one's goal selves (e.g., ought selves, feared selves), but here we consider a much larger, participant-derived array of self-aspect types. In addition, we specify a mechanism (i.e., evaluations of activated self-aspects) that accounts for how self-relevant feedback impacts affect. Indeed, recent work in our lab (*Brown & McConnell, in press*) has demonstrated that people lower in self-complexity in self-regulation situations rely on their affect more strongly (relative to those greater in self-complexity), and accordingly they either increase their practice efforts following failure in tasks where they believe practice will improve performance or reduce self-awareness following failure in tasks where they believe that practice will not be beneficial.

Turning more specifically to the self-complexity literature, the current work provides a mechanism for how those lower in self-complexity reveal affective spillover (i.e., stronger mood swings following self-relevant feedback). These studies demonstrate how feedback either about a self-aspect (Study 2) or about an attribute (Study 3) influences one's mood by documenting how *self-aspects* play a pivotal role in the affective spillover effect. That is, when feedback either changes appraisals of activated self-aspects (Study 2) or implicates a larger proportion of one's self-aspects (Study 3), the consequences of self-relevant feedback for those lower in self-complexity are considerable.

Interestingly, the current work supports a somewhat different explanation of affective spillover effects. Whereas past self-complexity work has suggested that having fewer selves and having greater attribute overlap both contribute to stronger affective responses to life events (Linville, 1985; cf., Rafaeli-Mor et al., 1999), the current work proposes that the critical determinant of affect is “local” (i.e., evaluations of one’s activated self-aspects). This perspective provides useful insights for self-complexity research. Specifically, the focus in the current work on self-aspects explores a critical factor involved in the experience of affect (i.e., appraisals of activated self-aspects) and suggests new insights for how those lower in self-complexity experience stronger affective responses. More broadly, rather than attempting to predict these outcomes at a global level (e.g., using *H*, which attempts to take into account the complexity of the entire self-concept), we argue that the key to these effects resides at a more local (i.e., self-aspect) level. We should note that there are probably situations where top-down, global feedback operates without self-aspects playing a central role (e.g., being told “you are an awful person”). In such cases, overall self-concept structure should still matter greatly (i.e., those lower in self-complexity will show greater spillover) and changes in affect may not depend on self-aspect evaluations. Finally, the current work shows that not *all* low self-complex people will reveal affective spillover. In particular, for those receiving feedback about self-aspects that do not alter appraisals of those self-aspects (Study 2) or for those receiving feedback about particular attributes associated with few self-aspects (Study 3), affective spillover will be relatively unlikely even for people lower in self-complexity. Thus, considering people’s self-concept structure provides an important, and heretofore unconsidered, qualifying condition for affective spillover by establishing conditions when people lower in self-complexity are unlikely to reveal affective spillover effects (cf., Linville, 1985).

In addition to shedding light on the mechanisms underlying self-complexity spillover effects, the current work also demonstrated a novel outcome. That is, it showed that feedback about one self-aspect can have evaluative implications for *other* self-aspects that share relatively more attributes. Although different contexts might lead to the activation of distinct self-aspects, the current work suggests that seemingly unrelated self-aspects can have evaluative implications for each other when sharing associations with common attributes.

The current findings suggest that self-concept representation will have important implications in determining behavior and information processing that results from one’s general affective states. As noted previously, it is well established that people in positive moods often engage in less elaborative thinking such as using stereotypes more (e.g., Bodenhausen et al., 1994), relying on heuristics more (e.g., Ruder & Bless, 2003), and showing less elaborative processing of persuasive messages (e.g., Bless, Bohner, Schwarz, & Strack, 1990) than do people in sad moods. More broadly, affect can influence creativity (e.g., Gasper, 2003) and memory (e.g., Bower & Forgas, 2001). It seems likely that self-concept representation will play an important role in these processes too. Indeed, future work should explore how self-concept representation moderates the many important effects of affect on social information processing and behavior.

Of course, the current work only represents a starting point. For example, we made certain initial assumptions about self-aspects and their attributes, taking an “all things being equal” approach to features such as their accessibility, centrality, and certainty (among others). Yet, it is well understood that these variables have important implications for behaviors and self-perceptions (see Baumeister, 1998). Moreover, different types of relational self-aspects may reveal qualitatively distinctive features as well (Sedikides & Brewer, 2001). At present, a consideration of these issues

awaits future work, but the current findings indicate that the framework for self-concept representation advanced here provides a useful starting point for subsequent research.

In sum, the current study explored several important implications of self-concept representation. In addition to providing strong support for the nature of self-concept organization that acknowledges the importance of self-aspects, the findings highlight the critical nature of evaluations of one’s activated self-aspects in understanding the consequences of self-relevant feedback. Adopting this framework for the self-concept and its structure can explain how such feedback is experienced, how feedback about one self-aspect affects appraisals of other self-aspects, and how those lower in self-complexity reveal stronger affective responses to life events. With respect to the self-complexity literature, this work offers insights for both the structure of how the self is represented in memory and the processes that unfold from that organization. Because of the importance of the self in affect and the central role of affect in directing one’s behavior, understanding self-concept representation and its implications is extremely important. The current work provides insights about the underlying mechanisms responsible for the important consequences of self-concept representation, and it emphasizes the value in recognizing that a number of phenomena linked to the self may operate at a more local, rather than global, level.

Acknowledgments

This work supported by NIMH Grants MH60645 and MH068279, NSF Grant BCS 0601148, and the Lewis Endowed Professorship. Portions of this research were presented at the 19th and 20th annual Duck Conference on Social Cognition, Buck Island, NC. We thank Michelle Bey, Vicky DeSensi, Chris Jones, Kristal Reis, and Minya Smith for their assistance in conducting these experiments.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage Publications.
- Allport, G. W. (1955). *Becoming: Basic considerations for a psychology of personality*. New Haven, CT: Yale University Press.
- Bargh, J. A., & Chartrand, T. L. (1999). The unbearable automaticity of being. *American Psychologist*, *54*, 462–479.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.
- Baumeister, R. F. (1998). The self. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., Vol. 1, pp. 680–740). New York: McGraw-Hill.
- Bem, D. J. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review*, *74*, 183–200.
- Bless, H., Bohner, G., Schwarz, N., & Strack, F. (1990). Mood and persuasion: A cognitive response analysis. *Personality and Social Psychology Bulletin*, *16*, 331–345.
- Bodenhausen, G. V., Kramer, G. P., & Süsner, K. (1994). Happiness and stereotypic thinking in social judgment. *Journal of Personality and Social Psychology*, *66*, 621–632.
- Bodenhausen, G. V., & Macrae, C. N. (1998). Stereotype activation and inhibition. In R. S. Wyer (Ed.), *Stereotype activation and inhibition: Advances in social cognition* (Vol. 11, pp. 1–52). Mahwah, NJ: Erlbaum.
- Bower, G. H., & Forgas, J. P. (2001). Mood and social memory. In J. P. Forgas (Ed.), *Handbook of affect and social cognition* (pp. 95–120). Mahwah, NJ: Erlbaum.
- Brewer, M. B., & Gardner, W. (1996). Who is this we? Levels of collective identity and self representations. *Journal of Personality and Social Psychology*, *71*, 83–93.
- Brown, J. D. (1998). *The self*. New York: McGraw-Hill.
- Brown, C. M., & McConnell, A. R. (in press). Effort or escape: Self-concept structure determines self-regulatory behavior. *Self and Identity*.
- Brown, C. M., Young, S. G., & McConnell, A. R. (2009). Seeing close others as we see ourselves: One’s own self-complexity is reflected in perceptions of meaningful others. *Journal of Experimental Social Psychology*, *45*, 515–523.
- Brown, C. M., & McConnell, A. R. (2009). When chronic isn’t chronic: The moderating role of active self-aspects. *Personality and Social Psychology Bulletin*, *35*, 3–15.
- Bruner, J. S. (1957). On perceptual readiness. *Psychological Review*, *64*, 123–152.
- Cantor, N., & Kihlstrom, J. F. (1987). *Personality and social intelligence*. Englewood Cliffs, NJ: Prentice-Hall.

- Carver, C. S., & Scheier, M. F. (Eds.). (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Donahue, E. M., Robins, R. W., Roberts, B. W., & John, O. P. (1993). The divided self: Concurrent and longitudinal effects of psychological adjustment and social roles on self-concept differentiation. *Journal of Personality and Social Psychology*, 64, 834–846.
- Forgas, J. P., & Williams, K. D. (Eds.). (2002). *The social self: Cognitive, interpersonal, and intergroup perspectives*. New York: Psychology Press.
- Gasper, K. (2003). When necessity is the mother of invention: Mood and problem solving. *Journal of Experimental Social Psychology*, 39, 248–262.
- Greenwald, A. G. (1980). The totalitarian ego: Fabrication and revision of personal history. *American Psychologist*, 35, 603–618.
- Greenwald, A. G., & Banaji, M. R. (1989). The self as a memory system: Powerful, but ordinary. *Journal of Personality and Social Psychology*, 57, 41–54.
- Hasher, L., & Zacks, R. T. (1988). Working memory, comprehension, and aging: A review and a new view. In G. H. Bower (Ed.), *The psychology of learning and motivation: Advances in research and theory* (Vol. 22, pp. 193–225). San Diego, CA: Academic Press.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94, 319–340.
- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, 52, 1280–1300.
- Higgins, E. T., King, G. A., & Mavin, G. H. (1982). Individual construct accessibility and subjective impressions and recall. *Journal of Personality and Social Psychology*, 43, 35–47.
- Hinkley, K., & Andersen, S. M. (1996). The working self-concept in transference: Significant-other activation and self-change. *Journal of Personality and Social Psychology*, 71, 1279–1295.
- Hugenberg, K., & Bodenhausen, G. V. (2004). Category membership moderates the inhibition of social identities. *Journal of Experimental Social Psychology*, 40, 233–238.
- James, W. (1890). *The principles of psychology*. New York: Henry Holt.
- Kashima, Y., Gurumurthy, A. K., Ouschan, L., Chong, T., & Mattingley, J. (2007). Connectionism and self: James, Mead, and the stream of enculturated consciousness. *Psychological Inquiry*, 18, 73–96.
- Keltner, D., Ellsworth, P. C., & Edwards, K. (1993). Beyond simple pessimism: Effects of sadness and anger on social perception. *Journal of Personality and Social Psychology*, 64, 740–752.
- Kihlstrom, J. F., & Klein, S. B. (1994). The self as a knowledge structure. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (2nd ed., Vol. 1, pp. 153–208). Hillsdale, NJ: Erlbaum.
- Klein, S. B., Loftus, J., Traflet, J. G., & Fuhrman, R. W. (1992). Use of exemplars and abstractions in trait judgments: A model of trait knowledge about the self and others. *Journal of Personality and Social Psychology*, 63, 739–753.
- Klein, S. B., Sherman, J. W., & Loftus, J. (1996). The role of episodic and semantic memory in the development of trait self-knowledge. *Social Cognition*, 14, 277–291.
- Linville, P. W. (1985). Self-complexity and affective extremity: Don't put all of your eggs in one cognitive basket. *Social Cognition*, 3, 94–120.
- Linville, P. W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology*, 52, 663–676.
- Linville, P. W., & Carlston, D. E. (1994). Social cognition perspective on self. In P. G. Devine, D. L. Hamilton, & T. M. Ostrom (Eds.), *Social cognition: Contributions to classic issues in social psychology* (pp. 143–193). New York: Springer-Verlag.
- Markus, H. R., & Nurius, P. (1986). Possible selves. *American Psychologist*, 41, 954–969.
- McAdams, D. P. (1999). Personal narratives and the life story. In L. Pervin & O. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 478–500). New York: Guilford.
- McConnell, A. R. (2009). The multiple self-aspects framework: Self-concept representation and its implications, submitted for publication.
- McConnell, A. R., Strain, L. M., Brown, C. M., & Rydell, R. J. (in press). The simple life: On the benefits of low self-complexity. *Personality and Social Psychology Bulletin*.
- McConnell, A. R., Renaud, J. M., Dean, K. K., Green, S. P., Lamoreaux, M. J., Hall, C. E., et al. (2005). Whose self is it anyway? Self-aspect control moderates the relation between self-complexity and well-being. *Journal of Experimental Social Psychology*, 41, 1–18.
- McConnell, A. R., Rydell, R. J., & Leibold, J. M. (2002). Expectations of consistency about the self: Consequences for self-concept formation. *Journal of Experimental Social Psychology*, 38, 569–585.
- McConnell, A. R., & Strain, L. M. (2007). Content and structure of the self. In C. Sedikides & S. Spencer (Eds.), *The self in social psychology* (pp. 51–73). New York: Psychology Press.
- Mead, G. H. (1934). *Mind, self and society*. Chicago: University of Chicago Press.
- Mendoza-Denton, R., Ayduk, O., Mischel, W., Shoda, Y., & Testa, A. (2001). Person \times situation interactionism in self-encoding (I am... when...): Implications for affect regulation and social information processing. *Journal of Personality and Social Psychology*, 80, 533–544.
- Mischel, W., & Morf, C. C. (2003). The self as a psycho-social dynamic processing system: A meta-perspective on a century of the self in psychology. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 15–43). New York: Guilford.
- Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*, 102, 246–268.
- Mischel, W., & Shoda, Y. (1998). Reconciling processing dynamics and personality dispositions. *Annual Review of Psychology*, 49, 229–258.
- Neisser, U. (1991). Two perceptually given aspects of the self and their development. *Developmental Review*, 11, 197–209.
- Neter, J., Kutner, M. H., Nachtsheim, C. J., & Wasserman, W. (1996). *Applied linear statistical models* (4th ed.). Chicago: Irwin.
- Niedenthal, P. M., Barsalou, L. W., Winkielman, P., Krauth-Gruber, S., & Ric, F. (2005). Embodiment in attitudes, social perception, and emotion. *Personality and Social Psychology Review*, 9, 184–211.
- Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84, 231–259.
- Pittinsky, T. L., Shih, M., & Ambady, N. (1999). Identity adaptiveness: Affect across multiple identities. *Journal of Social Issues*, 55, 503–518.
- Rafaeli-Mor, E., Gotlib, I. H., & Revelle, W. (1999). The meaning and measurement of self-complexity. *Personality and Individual Differences*, 27, 341–356.
- Rafaeli-Mor, E., & Steinberg, J. (2002). Self-complexity and well-being: A review and research synthesis. *Personality and Social Psychology Review*, 6, 31–58.
- Renaud, J. M., & McConnell, A. R. (2002). Organization of the self-concept and the suppression of self-relevant thoughts. *Journal of Experimental Social Psychology*, 38, 79–86.
- Roberts, B. W., & Donahue, E. M. (1994). One personality, multiple selves: Integrating personality and social roles. *Journal of Personality*, 62, 199–218.
- Rogers, C. R. (1951). *Client-centered therapy*. New York: Houghton-Mifflin.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Ruder, M., & Bless, H. (2003). Mood and the reliance on the ease of retrieval heuristic. *Journal of Personality and Social Psychology*, 85, 20–32.
- Salovey, P., Detweiler, J. B., Steward, W. T., & Bedell, B. T. (2001). Affect and health-relevant cognition. In J. P. Forgas (Ed.), *Handbook of affect and social cognition* (pp. 344–368). Mahwah, NJ: Erlbaum.
- Schleicher, D. J., & McConnell, A. R. (2005). The complexity of self-complexity: An associated systems theory approach. *Social Cognition*, 23, 387–416.
- Schwarz, N., & Clore, G. L. (1996). Feelings and phenomenal experiences. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 433–465). New York: Guilford.
- Scott, W. A. (1969). Structure of natural cognitions. *Journal of Personality and Social Psychology*, 12, 261–278.
- Sedikides, C., & Brewer, M. B. (Eds.). (2001). *Individual self, relational self, collective self*. Philadelphia, PA: Psychology Press.
- Shallice, T. (1972). Dual functions of consciousness. *Psychological Review*, 79, 383–393.
- Showers, C. (1992). Compartmentalization of positive and negative self-knowledge: Keeping bad apples out of the bunch. *Journal of Personality and Social Psychology*, 62, 1036–1049.
- Shweder, R. A., Goodnow, J., Hatano, G., LeVine, R. A., Markus, H., & Miller, P. (1998). The cultural psychology of development: One mind, many mentalities. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Theoretical models of human development* (5th ed., Vol. 1, pp. 865–937). Hoboken, NJ: Wiley and Sons.
- Smith, E. R., Coats, S., & Walling, D. (1999). Overlapping mental representations of self, in-group, and partner: Further response time evidence and a connectionist model. *Personality and Social Psychology Bulletin*, 25, 873–882.
- Smith, E. R., & Queller, S. (2004). Mental representations. In M. B. Brewer & M. Hewstone (Eds.), *Social cognition* (pp. 5–27). Malden, MA: Blackwell.
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, 96, 506–520.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063–1070.
- Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review*, 107, 101–126.
- Woolfolk, R. L., Novalany, J., Gara, M. A., Allen, L. A., & Polino, M. (1995). Self-complexity, self-evaluation, and depression: An examination of form and content within the self-schema. *Journal of Personality and Social Psychology*, 68, 1108–1120.