

Short research note

When I and me are different: Assimilation and contrast in temporal self-comparisons

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Abstract

In two studies, we show that comparisons with past or possible future selves shape current self-evaluation and that the direction of this influence is determined by one's current comparison focus. In Study 1, participants primed to focus on similarities versus dissimilarities were asked to remember an introverted or extraverted past self and then to evaluate their current level of extraversion. Participants who focused on similarities assimilated current self-evaluations to the past self, whereas those who focused on dissimilarities contrasted current self-evaluations away from the past self. In Study 2, participants imagined a possible future self that differed from their current self in terms of body weight. Participants who imagined a moderate weight change exhibited assimilation to the possible self, whereas those who imagined an extreme weight change exhibited contrast. These studies highlight the important role cognitive factors such as comparison focus play in shaping the consequences of temporal self-comparisons. Copyright © 2009 John Wiley & Sons, Ltd.

People frequently compare themselves to what they were like in the past or what they may be like in the future. When evaluating her academic skills, for example, a college student may note the fact that her grade point average is not as high as it was in high school. Or she might evaluate her current grade point average relative to the one she hopes to attain next semester. Not only do people frequently engage in such temporal self-comparisons, they seem to do so as often – or even more often – than they engage in social comparisons (Wilson & Ross, 2000).

Yet despite the ubiquity of temporal self-comparisons in everyday life, relatively little research has focused on the consequences of these comparisons for self-evaluation. The main exception is work inspired by Wilson and Ross' (2001) temporal self-appraisal theory (Haddock, 2004, 2006; Haynes et al., 2007; Kanten & Teigen, 2008; Ross & Wilson, 2002; Sanna, Chang, Carter, & Small, 2006). According to this theory, people derogate past selves as a way to feel good about the current self. The idea is that by believing they are more attractive, kind or responsible than they used to be, people can maintain an illusion of continuous self-improvement. This is only the case for distant past selves, however, as recent past selves presumably have implications for current self-evaluation. Indeed, as Ross and Wilson (2002) have shown, people actively distance themselves from former failures relative to former successes in order to protect their largely positive views of the current self.

Temporal self-appraisal theory provides a useful framework for understanding the influence of motivational forces on the interplay between current and past selves. But this theory mainly focuses on how the need to maintain positive self-views in the present influences the perception of past selves, rather than how past (or possible future) selves influence current self-perceptions. Moreover, in addition to motivational factors, cognitive processes are key in shaping judgmental

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outcomes. How might we expect cognitive processes to affect the way in which temporal self-comparisons influence current self-views? One clue can be found in research on social comparison.

An abundance of research has shown that social comparisons typically influence self-evaluation in one of two ways: sometimes, judgments of the self are assimilated toward the judgmental standard; at other times, judgments of the self are contrasted away from the standard (see Biernat, 2005; Mussweiler, 2003 for recent overviews). Moreover, one's current comparison focus—whether one is focused on similarities or dissimilarities between the self and standard—seems to be a key factor in determining which of these two judgmental outcomes occurs. The mechanisms underlying this process are outlined in detail in Mussweiler's (2003) Selective Accessibility Model (SAM). Briefly, whether a given comparison leads to assimilation or contrast depends upon the hypothesis an individual tests during the comparison process. In testing the hypothesis that self and standard are similar, he or she selectively activates knowledge indicating self-standard similarity. In testing the hypothesis that self and standard are different, he or she selectively activates knowledge indicating self-standard dissimilarity. This activated knowledge is then used as input for the final judgment, leading to assimilation in the case of similarity testing, and contrast in the case of dissimilarity testing.

Numerous research findings support the predictions of the SAM (see Mussweiler, 2003, 2007, for overviews). In an illustrative study (Mussweiler, 2001), participants were primed to focus on similarities or dissimilarities prior to a social comparison task. More specifically, they were first asked to examine two pictures and to list either similarities or differences between them. They were then asked to compare themselves with a student who was adjusting well or adjusting poorly to life at a new university, and to evaluate their own adjustment to university life. The results showed that the comparison focus primed in the first task carried over to the second task. Participants who initially searched for similarities assimilated their self-evaluations to the standard, judging themselves to be better adjusted to university life when the standard was well adjusted. Participants who initially searched for dissimilarities, on the other hand, contrasted their self-evaluations away from the standard. These participants judged themselves to be better adjusted to university life when the standard was poorly adjusted. Thus, one's comparison focus at the time of judgment critically determined whether the social comparison process resulted in assimilation or contrast.

To the extent that the processes underlying assimilation and contrast are similar across different types of comparisons, we should expect temporal self-comparisons to behave much like social comparisons. That is, when individuals are in a similarity focus, they should assimilate their current self-views to the relevant past or possible future self under consideration. But when in a dissimilarity focus, they should contrast their current self-views away from this past or possible future self. Thus, we expect the influence of temporal self-comparisons on the current self-concept to depend on one's current comparison focus.

Is there any evidence to support this claim? As mentioned earlier, few investigations have examined the role of cognitive processes in determining how temporal self-comparisons influence self-perception. However, two recent investigations did in fact examine the influence of past selves on perceptions of the current self (Broemer, Grabowski, Gebauer, Ermel, & Diehl, 2008; Gebauer, Broemer, Haddock, & von Hecker, 2008). Building upon Schwarz & Bless' (1992, 2007) inclusion/exclusion model, these researchers hypothesized that recent past selves are included in the current self-representation, leading to assimilation, whereas distant past selves are excluded from the current self-representation, leading to contrast. Thus, for example, thinking of a recent past self that was high in self-esteem would lead one to see the current self as relatively high in self-esteem, but thinking of a distant past that was high in self-esteem would lead one to see the current self as relatively low in self-esteem. To test this reasoning, Broemer et al. (2008) manipulated the subjective temporal distance between the present and a past self and showed that people assimilated the current self to past selves they perceived to be recent, but contrasted the current self away from past selves they perceived to be distant.

Although compatible with these results, the present perspective differs from theirs in important ways. First, whereas this previous research was concerned with how the subjective temporal distance to past selves determines their influence on the current self-concept (Broemer et al., 2008) and how chronic differences in mood moderate this influence (Gebauer et al., 2008), we are interested in how the comparison mechanisms of similarity versus dissimilarity testing shape the outcome of temporal self-comparisons. According to the SAM (Mussweiler, 2003), a focus on similarities typically leads people to assimilate the judgmental target to an accessible standard, whereas a focus on differences typically leads people to contrast the judgmental target away from an accessible standard. Thus, in the present research, first we manipulate comparison focus using two different paradigms—procedural priming and standard extremity—that have been shown to produce a focus on similarities versus differences in past research (Mussweiler, 2001; Mussweiler & Damisch, 2008; Mussweiler, Rüter, & Epstude, 2004a, 2004b). Second, whereas the previous research focused specifically on past selves,

we show that comparisons with both past and possible future selves affect current self-views, and do so in the same way. Thus, we provide evidence for a consistent influence of temporal self-comparisons on judgments of the current self, regardless of whether one is considering real selves or hypothetical future ones. In this way, our research expands upon that of Broemer et al. (2008), but suggests a different way in which temporal self-comparisons shape the current self-concept.

In the current research, we describe two studies that provide evidence for our hypothesis that the comparison mechanisms of similarity and dissimilarity testing play a key role in temporal self-comparison. We predicted that merely thinking about a past or possible future self would shift participants' current self-views and that the direction of this shift would be determined by their current comparison focus. In Study 1, we used a procedural priming task to induce a focus on similarities or differences in our participants and asked them to consider a past self. In Study 2, we asked participants to imagine a possible future self and manipulated comparison focus by manipulating the extremity of the possible self under consideration. In both studies, we predicted that participants focused on similarities between themselves and the past/possible future self would show assimilation, whereas participants focused on differences would show contrast.

STUDY 1

In Study 1, participants were asked to consider a recent past self whose behavior was relevant to the trait of extraversion. Some participants were asked to remember an extraverted past self whereas others were asked to remember an introverted past self. In analogy to social comparison studies that examine how the mere presentation of a singular piece of information about a social comparison standard influences self-evaluations (e.g., Gilbert et al., 1995), we examine how imagining a singular episode of the self in the past influences evaluations of the present self. Prior to thinking about this past self, however, participants were induced to focus on similarities or differences via a procedural priming task. We predicted that participants primed to search for similarities would assimilate to their past self, judging their current self to be more extraverted after considering an extraverted past self than an introverted one. However, we expected participants primed to search for dissimilarities to show contrast, judging their current self to be less extraverted after considering an extraverted past self than an introverted one.

Method

Participants

Participants were 90 University of Cologne students recruited via email to participate in an Internet-based study in exchange for a chance to win a 100 Euro gift voucher.¹ Participants were recruited in one of two data collection efforts: One E-mail was sent out to former research participants who wished to participate in future studies and a second one was sent out a few weeks later to several university E-mail listservs. Four participants were excluded because they reported having difficulty selecting an appropriate memory for the past self-writing task, leaving a final sample of 86 participants.

Materials and Procedure

The study was described as an investigation of “visual perception and memory” and took about 15 minutes to complete. Upon clicking a link in the recruitment E-mail, participants were directed to a Web site where they could complete the study. The study consisted of three main parts: A procedural priming task, a past self-writing task, and a self-evaluation task. Because we did not want procedural priming to influence, which memory participants chose for the past self-writing task, we asked them to select the memory prior to procedural priming. Thus, depending on condition, participants were first asked to think of a time in the past year when they behaved in either an introverted or an extraverted manner. They were told that if they could think of multiple instances of this behavior, they should choose only one at this time. They were

¹In order to be included in the sample, participants had to be native German speakers to complete the entire study in one sitting and to report that they had not participated in any prior studies using a similar procedural priming task.

then asked to think of a codeword that would remind them of which memory they selected when they were asked to write about it later in the experiment. After providing this codeword, participants began the procedural priming task.

The procedural priming task was described as a test of “visual perception,” and was intended to induce a focus on similarities versus differences (Mussweiler & Crusius, 2008). Participants were presented with three pairs of pictures: two drawings of a river scene, two city skyline photos, and two photos of an underwater scene. In the similarity focus condition, participants were asked to list three similarities for each of the pairs. In the difference focus condition, they were asked to list three differences for each of the pairs. Thus, similarity focus participants listed a total of nine similarities across three picture pairs whereas difference focus participants listed a total of nine differences across three picture pairs. Previous research has shown that this task induces a tendency to focus on similarities or differences that carries over to subsequent judgments (Mussweiler, 2001).

After the priming task, participants moved on to the past self-writing task. They were presented with the codeword they chose earlier in the experiment and were asked to write a paragraph or two about the associated memory. In particular, they were asked to describe where they were at the time, who else was present, how they behaved, and what they were thinking and feeling. This was intended to ensure that participants spent some time reflecting on their past self prior to the self-evaluation task.

After writing about their past self in some detail, participants completed the self-evaluation task, which included the main dependent measures. Participants were first asked to rate their own extraversion versus introversion on a 7-point scale anchored at 1 (“very introverted”) and 7 (“very extraverted”). They then completed the German version of the Big Five Inventory extraversion subscale (BFI; Lang, Lüdtke, & Asendorpf, 2001; John & Srivastava, 1999). The BFI extraversion subscale asks participants to indicate their agreement with eight statements beginning with, “I see myself as someone who. . .” and ending with completions such as, “is outgoing, sociable” and “is sometimes shy, inhibited.” These ratings are made on a 5-point scale anchored at 1 (“disagree strongly”) and 5 (“agree strongly”).

Finally, participants were asked to provide some demographic information and to submit their E-mail addresses for inclusion in the lottery for the 100 Euro gift voucher. After the completion of the study, one E-mail address was randomly selected from those provided and the owner was contacted and awarded a 100 Euro gift voucher for a popular online retailer.

Results and Discussion

We combined participants’ overall rating of extraversion and their responses to the BFI extraversion subscale into a single score with higher values indicating higher levels of self-perceived extraversion. To do so, we *z*-transformed all judgments (after reverse-scoring three BFI items) and calculated the mean. The resulting score reflects participants’ ratings of their own extraversion in units of the pertinent standard deviation.

Inspection of the means displayed in Figure 1 reveals that, as predicted, participants’ self-perceptions were jointly influenced by the content of the memory they were asked to describe and the induced comparison focus. Indeed, participants who were procedurally primed to look for differences judged themselves to be more extraverted after writing about a past introverted self ($M = .08$) than a past extraverted self ($M = -.42$) whereas participants who were primed to look for similarities tended to see themselves as more extraverted after writing about a past extraverted self ($M = .20$) than a past introverted self ($M = -.01$). This pattern produced a significant interaction in a 2 (memory: extraversion vs. introversion) \times 2 (procedural priming: similarities vs. differences) \times 2 (recruitment wave: first vs. second) analysis of variance (ANOVA), $F(1, 78) = 5.89, p < .05, \eta_p^2 = .07$. No other effects were significant. These results provide initial support for the hypothesis that, as is the case with social comparisons, temporal self-comparisons can lead to either assimilation or contrast depending on a person’s current comparison focus. Individuals assimilate their current self-views to the past self when they are focused on similarities, but contrast their current self-views away from the past self when they are focused on differences.

STUDY 2

In Study 2, we aimed to replicate and extend the results of Study 1 to show that comparisons with possible future selves yield a pattern of self-evaluation similar to that produced by comparisons with past selves. Although possible future selves

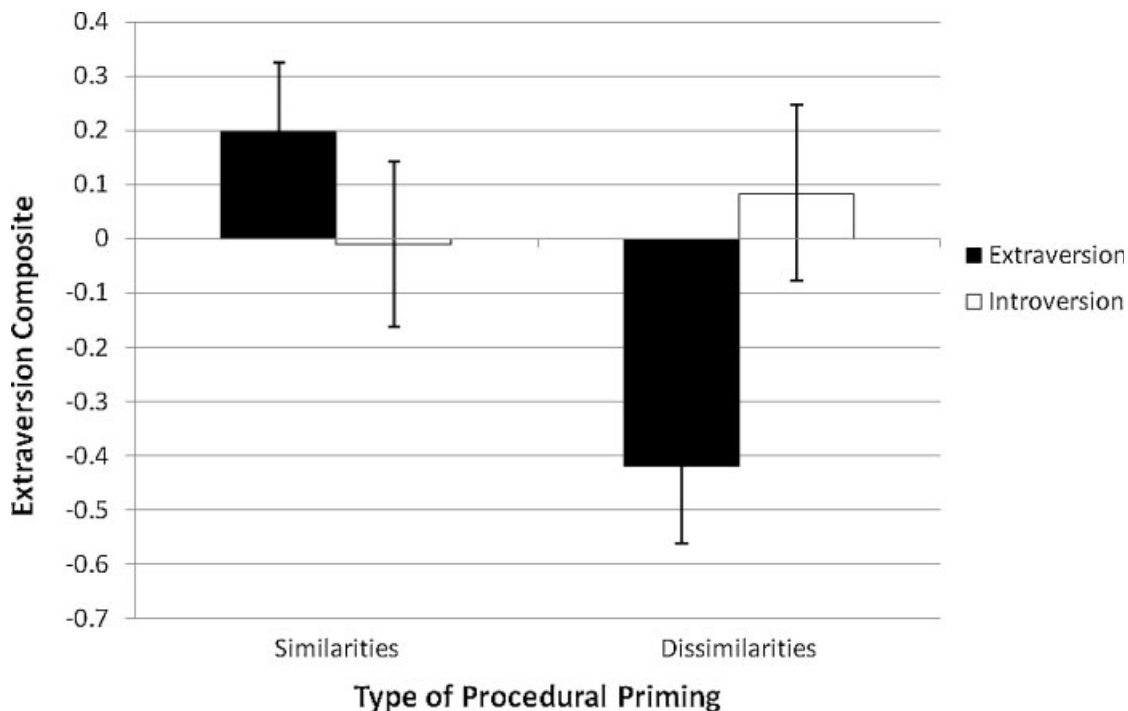


Figure 1. Mean extraversion scores for participants remembering an extraverted versus an introverted past self, by procedural priming condition. Error bars represent ± 1 standard error

may differ from past selves in important ways—for example, whereas past selves are based on memories of actual experiences and thus are relatively constrained by the facts, possible future selves are constructed around hypothetical future experiences and thus may be more susceptible to motivational influences—the mechanism underlying comparisons with past and possible future selves should not differ. Thus, we predicted that people would show assimilation to future possible selves when in a similarity focus but contrast away from possible future selves when in a dissimilarity focus.

To test this hypothesis, we asked participants to imagine a possible self that differed from their current self in terms of body weight. Instead of procedurally inducing a focus on similarities versus dissimilarities, however, we manipulated comparison focus by manipulating the extremity of the possible future self. Previous research has shown that people tend to assimilate their judgments to moderate standards of a trait or category (which prompt a focus on similarities) but contrast their judgments away from extreme standards (which prompt a focus on dissimilarities) (Mussweiler, Rüter, & Epstude, 2004a, 2004b). Thus, we asked participants to imagine a possible self that was moderately or extremely different from their current self in terms of body weight. We then asked them to evaluate their current body weight. We predicted that participants would assimilate their current self-views to a moderately different possible self, judging the current self to be heavier when imagining a heavier possible self than when imagining a lighter one. But we expected them to contrast their current self-views away from an extremely different possible self, judging the current self to be lighter when imagining a heavier possible self than when imaging a lighter one.

Method

Participants

Participants were 199 students from the University of Cologne who took part in a mass testing session conducted in their psychology lecture course. Sixteen participants were excluded because they failed to follow directions or to complete all of the measures. Two outliers with body mass index (BMI) scores more than $3SD$ from the sample mean were also excluded. Thus, the final sample was composed of 181 participants (146 female).

Materials and Procedure

Participants completed a packet of materials containing a number of short, unrelated studies. The present study appeared last in this packet. Participants were asked to imagine a possible future self that was different from their current self in terms of body weight. We manipulated both the direction and the extent of the weight change. Half of the participants were asked to imagine a heavier version of themselves in the future whereas the other half of the participants were asked to imagine a lighter version of themselves. Orthogonally, half of the participants were asked to imagine a moderate weight change of 2 kg whereas the other half of the participants were asked to imagine an extreme weight change of 15 kg. Participants thus imagined a possible future self that was 2 versus 15 kg lighter or heavier than their current self and kept this image in mind for 1 minute before proceeding.

After imagining a specific future possible self, participants were asked to evaluate their current self. These evaluations consisted of one objective measure and two subjective measures of participants' current weight. The objective measure asked participants to estimate their current weight in kilograms. The first subjective measure asked participants to rate themselves on a 9-point scale anchored at 1 ("very thin") and 9 ("very fat"). The second subjective measure asked participants to rate their satisfaction with their current weight on a 9-point scale anchored at 1 ("very unsatisfied") and 9 ("very satisfied"). Finally, participants reported their height in centimeters.

Results and Discussion

Recall our prediction that participants would assimilate judgments of their current self to moderately different possible selves but contrast judgments of their current self away from extremely different possible selves. To test this prediction, we calculated each participant's estimated BMI from their estimates of their current weight and their height.² We then combined participants' estimated BMI and their subjective self-evaluations into a single score with higher values indicating greater perceptions of heaviness. To do so, we *z*-transformed all three measures (after reverse scoring the satisfaction measure) and calculated the mean. The resulting score reflects participants' judgments of their current body weight in units of the pertinent standard deviation.

An inspection of the means displayed in Figure 2 reveals that, as predicted, participants' self-evaluations were jointly influenced by the direction and the extremity of the future self-image they were asked to construct. Indeed, participants in the moderate weight change condition assimilated their current self-evaluations to their possible selves, judging themselves to be heavier when they imagined a heavier possible self ($M = .26$) than when they imagined a lighter possible self ($M = -.15$), whereas participants in the extreme weight change condition judged themselves as heavier when they imagined a lighter possible self ($M = .26$) than when they imagined a heavier possible self ($M = .04$). This pattern produced a significant interaction in a 2 (direction: heavier vs. lighter) \times 2 (change: moderate vs. extreme) \times 2 (gender) ANOVA, $F(1, 173) = 4.76, p < .05, \eta_p^2 = .03$. This analysis also revealed a main effect of gender, indicating that male participants judged themselves to be heavier than did female participants, $M_s = .25$ and $-.05$ for males and females, respectively, $F(1, 173) = 4.38, p < .05, \eta_p^2 = .03$. No other effects approached significance.

These results are noteworthy for two reasons. First, they replicate the findings of Study 1 using a different content domain and a different manipulation of similarity versus dissimilarity focus. This provides convergent support for the hypothesis that temporal self-comparisons can produce either assimilation or contrast depending on one's current comparison focus. Second, they demonstrate that this phenomenon occurs not only for real past selves but also for hypothetical future selves. Thus, the effect of temporal self-comparisons on self-evaluation is consistent regardless of the time frame under consideration.

It is also important to note that the effects of differences in the extremity of imagined possible self that we manipulated in Study 2 maybe coproduced by associated differences on related dimensions. For example, participants may have assumed that an extreme possible self is temporally further removed from the present than a moderate possible self. In light of the fact, that temporal distance has been shown to contribute to the emergence of assimilation and contrast (Broemer

²We expected our possible selves manipulation to affect participants' estimates of their current weight, but not their reported height. Confirming this expectation, a 2 (direction: heavier vs. lighter) \times 2 (change: moderate vs. extreme) \times 2 (gender) ANOVA on reported height yielded only a main effect of gender, $F(1, 173) = 117.39, p < .0005, \eta_p^2 = .40$. Not surprisingly, male participants ($M = 182.0$ cm) reported being taller than female participants ($M = 168.6$ cm). No other effects approached significance.

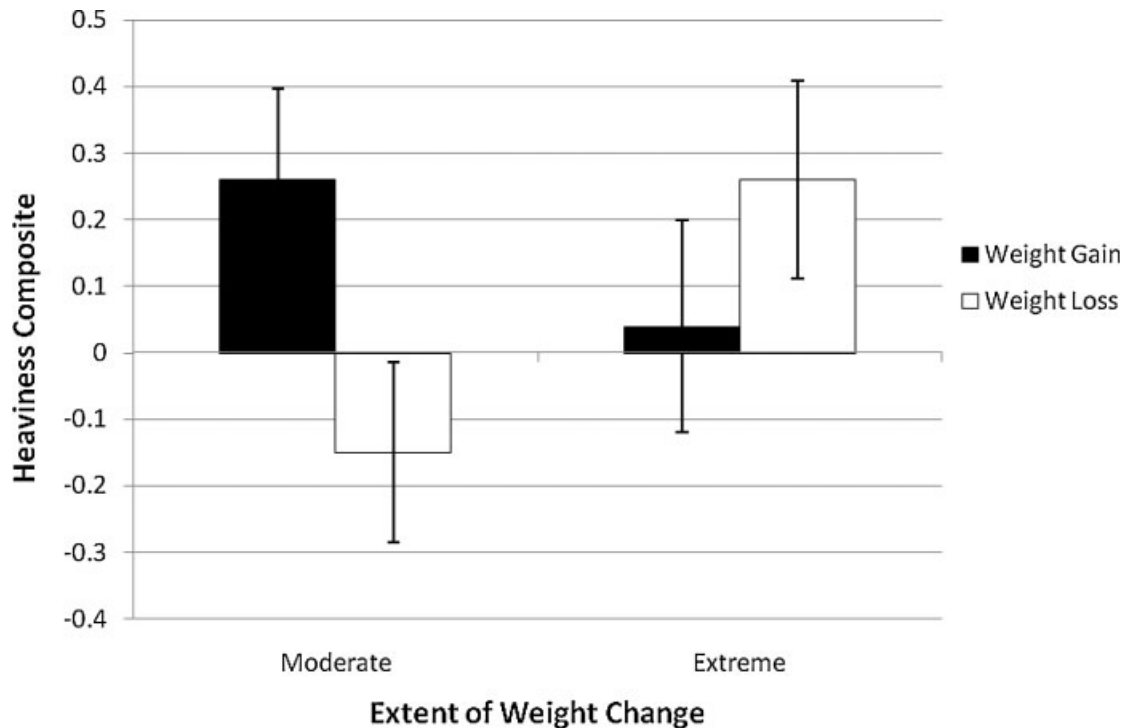


Figure 2. Mean heaviness scores for participants imagining weight gain versus weight loss, by extremity of weight change. Error bars represent ± 1 standard error

et al., 2008), manipulated differences in extremity and potentially associated differences in temporal distance may have worked hand in hand to produce the obtained pattern of results. Importantly, Study 2 merely used extremity as a vehicle to manipulate whether judges focus on similarities or differences during temporal comparison. Past research has clearly shown that standard extremity yields these differential foci (Mussweiler et al., 2004b). Whether these differentially evoked foci are further strengthened by potentially associated differences in temporal proximity is thus extraneous to the primary purpose of Study 2.

GENERAL DISCUSSION

In two studies, we found that comparisons with past or possible future selves shape current self-evaluation. Importantly, the direction of this influence depends upon one's current comparison focus. When people are focused on similarities between their current and past/possible future selves, assimilation occurs. But when people are focused on differences, contrast occurs. A comparison focus on similarities versus differences may carry over from prior tasks (as in Study 1) or may be prompted by the extremity of the past or future self under consideration (as in Study 2).

The studies reported here raise a number of interesting questions for future research. For example, when will people focus on similarities versus dissimilarities when comparing with past or future selves? A likely answer has to do with peoples' implicit theories about stability versus change in the self over time. According to Ross (1989), people typically assume continuity in the self over time and hence they tend to see past and current selves as similar. However, for some domains they may hold theories of change that suggest past and current selves are quite different. For example, an elderly individual who has seen his health deteriorate with age would likely contrast current self-evaluations away from his 20-year-old self when making health-related judgments. Implicit theories do vary not only across traits but also across individuals. In their work on motivation and scholastic performance, Dweck and colleagues (Dweck, 1999; Dweck, Chiu,

& Hong, 1995) have identified two types of students: “entity theorists” and “incremental theorists.” Entity theorists believe that intellectual ability is innate, and hence unchangeable, whereas incremental theorists believe ability can be increased through effort. From the present perspective, incremental theorists should be more likely to contrast the current self away from earlier poor performances whereas entity theorists should be more likely to show assimilation. In sum, whether one exhibits assimilation or contrast when thinking about past/future selves is likely to depend on an individual’s implicit theory of stability versus change for the domain in question.

Another interesting question has to do with which particular past/future self an individual selects for comparison. When evaluating her current academic skills relative to her past skills, for example, with which past self should a university student compare? Should she compare with her high school self or herself in the first year of college? There are even more possibilities in the case of future selves as there are fewer factual constraints when constructing future selves than when reconstructing past ones. To the extent that temporal self-comparisons behave like social comparisons, we can expect people to compare with past and future selves that are similar to the current self on the dimension of interest (Festinger, 1954). However, this process may also be influenced by motivational goals, leading individuals to select for comparison past selves or future selves that allow them to feel they are continually improving (Wilson & Ross, 2001). Future research could explore how cognitive and motivational factors interact to determine with which past and future selves people choose to compare.

The current research adds to a growing literature demonstrating the importance of comparison processes for a variety of judgments and behaviors (Corcoran, Hundhammer, & Mussweiler, 2008; Corneille, Yzerbyt, Pleyers, & Mussweiler, 2009; Epstude & Mussweiler, 2009; Haddock, Macrae, & Fleck, 2002; Mussweiler & Crusius, 2008; Mussweiler & Damisch, 2008; Mussweiler & Epstude, 2009). For example, recent research shows that concept priming (e.g., priming the trait aggressiveness) can lead to either assimilation or contrast in subsequent judgments of a target person because trait priming prompts the spontaneous activation of—and comparison with—trait-consistent standards (Mussweiler & Damisch, 2008). The present research contributes to this literature by showing that in the realm of self-evaluation, similarity versus dissimilarity testing plays an important role not only in social comparisons but also in temporal self-comparisons.

At a more general level, the present research suggests that social and temporal comparisons may share a common cognitive architecture. How people see themselves depends not only on how they compare with others but also on how they compare with past or possible future versions of themselves. As is true for social comparisons, the consequences of such temporal self-comparisons appear to depend on whether people focus on similarities or differences at the time of judgment. How comparing me to a past or future I influences self-perception thus critically depends on whether I and me are similar or different.

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