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FlashReport

Moving forward is not only a metaphor: Approach and avoidance lead to self-evaluative assimilation and contrast

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ABSTRACT

Could it be that walking toward (vs. away) someone else changes your self-evaluation in the direction of what this person is? We answer positively and argue that approach movements lead to self-evaluative assimilation (a higher self-evaluation with a high vs. a low standard), while avoidance movements lead to self-evaluative contrast (a lower self-evaluation with a high vs. a low standard). Hence, we predict that approach/avoidance moderates the impact of comparison information on self-evaluation. To test this idea, participants were either primed with approach or avoidance before processing comparison information (Study 1) or physically had to walk toward or away from this information (Studies 2 and 3). Results on self-evaluated adjustment (Studies 1 and 2) and self-evaluated attractiveness measures (Study 3) confirmed our predictions. These studies suggest ways to behave to self-evaluate positively when hearing about others.

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When you feel smarter after comparing with Sherlock Holmes than after comparing with Homer Simpson, you are experiencing an assimilation effect. Conversely, when you feel dumber after comparing with Sherlock Holmes than after comparing with Homer Simpson, you are experiencing a contrast effect. Here, we suggest that a critical variable for predicting assimilation and contrast is whether you literally approach or avoid information about these two comparison targets.

The social comparison literature shows that assimilation and contrast depend on several factors (Stapel & Suls, 2007). For instance, thinking we are similar versus dissimilar with the comparison target leads respectively to assimilation and contrast (Mussweiler, 2003), the same is true when thinking in terms of social self-construal (i.e., “us”) versus personal self-construal (i.e., “I”; Marx, Stapel, & Muller, 2005; Stapel & Koomen, 2001), and feeling we can versus cannot attain the standards set by a role model (Lockwood & Kunda, 1997). Interestingly, all these variables are related to approach/avoidance experiences. Indeed, we often approach similar people (Newcomb, 1961), we more easily approach members of our groups (members of the “us”; Paladino & Castelli, 2008), and finally, feeling that a role model is attainable can be equated with the feeling that we can approach his/her achievements. We believe this regularity is not a coincidence as approach/avoidance can be experiential information (Schwarz & Clore, 2007) and research has shown that experiential information can moderate the impact of comparison information.

Hence, Häfner and Schubert (2009) suggested that what one experiences while processing comparison information (i.e., experiential information) moderates its impact on self-evaluation. Accordingly, they showed that experiencing easiness when processing comparison information (by being presented the fluent picture of an attractive or unattractive comparison target) favors assimilation, whereas experiencing difficulty in processing (by being presented a non-fluent picture) favors contrast effects. The problem with such a nice illustration is the recurrent problem with comparison information: it is often imposed by the context (Gilbert, Giesler, & Morris, 1995) and one cannot choose the most self-protective information (e.g., a fluent picture of an attractive target or a non-fluent picture of an unattractive target). But if one cannot control features of the comparison information (e.g., its fluency), one can control more easily *what she/he is doing* while processing the target—namely, moving toward or away from this information—, which would be another type of experiential information.

To understand why moving toward (approaching) versus away (avoiding) might be relevant experiential information in the social comparison context, it is fruitful to go back to the very definition of assimilation and contrast. Formally, assimilation happens when self-values move toward the standard (the comparison target's value), while contrast happens when self-values move away from the standard (Suls & Wheeler, 2007). It might seem obvious that this definition refers to self-values, not the physical-self, but the embodied cognition literature suggests that the frontier between concepts (here self-values) and the physical world (here the physical-self) is not so clear-cut (Barsalou, 2008). Hence, feeling (i.e., experiencing) that the physical-self is moving toward or away from the comparison

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information might represent experiential information that translates into self-values. Somewhat in line with this contention, although in a different domain, Kawakami, Steele, Cifa, Phills, and Dovidio (2008) showed that information (math related concepts) processed while performing approach (vs. avoidance) arm movements was later associated with the self-concept—as measured with a me/not me Implicit Association Test (Greenwald & Farnham, 2000). This suggests that approach/avoidance might be another type of experiential information.

In sum, if, as we suggest, approach/avoidance is a relevant type of experiential information, then processing comparison information while experiencing approach should induce a movement of self-values toward the standard value, whereas experiencing avoidance should induce a movement of self-values away from the standard value. Accordingly, approach should induce a higher self-evaluation with a high versus a low standard (assimilation), while the reverse should be true with avoidance (contrast). We therefore predict that approach versus avoidance will moderate the impact of comparison information on self-evaluation. We test this prediction using the same self-evaluation measures, but different approach/avoidance inductions in Study 1 and Study 2, and using the same induction, but different self-evaluation measures in Study 2 and 3.

Study 1

In this first study, we used a well-validated social comparison procedure adapted from Mussweiler (2001). Participants received information about a comparison target who was either a successful person (a high standard) or an unsuccessful one (a low standard), and later performed self-evaluations on related dimensions. Importantly, before being presented with comparison information, participants performed the approach/avoidance procedural priming procedure developed by Friedman and Förster (2005).

Method

Participants

One hundred forty-one participants (92 female, $M_{\text{age}} = 27.02$, $SD_{\text{age}} = 5.03$) were recruited to perform several (allegedly) unrelated online studies. All the participants were randomly assigned to the conditions of a 2 (approach vs. avoidance) by 2 (high vs. low standard) between-participants design.

Procedure

Participants first completed a maze by performing arm-hand movements with their computer mouse. As shown in Fig. 1, participants helped a cartoon mouse to find its way—from the middle to the exit of the maze—toward a piece of cheese lying at the maze's exit (approach) or away from an owl hanging over the maze (avoidance; Friedman & Förster, 2005). In a second allegedly unrelated study on city adaptation (modeled after Mussweiler, 2001), participants then read about a same sex comparison target—Alex. Alex was described as adjusting either very well (high standard) or poorly (low standard) to her/his new city and professional activities. She/he developed lots of (high standard) or few (low standard) social activities and new friendships in the new city. Then, participants compared themselves with Alex and estimated, through an open-ended format, how often they went out with their colleagues per month and how many colleagues they spent time with outside of work. We later computed self-evaluated adjustment by z-transforming these two self-evaluative judgments and averaging them (Mussweiler, 2001).¹

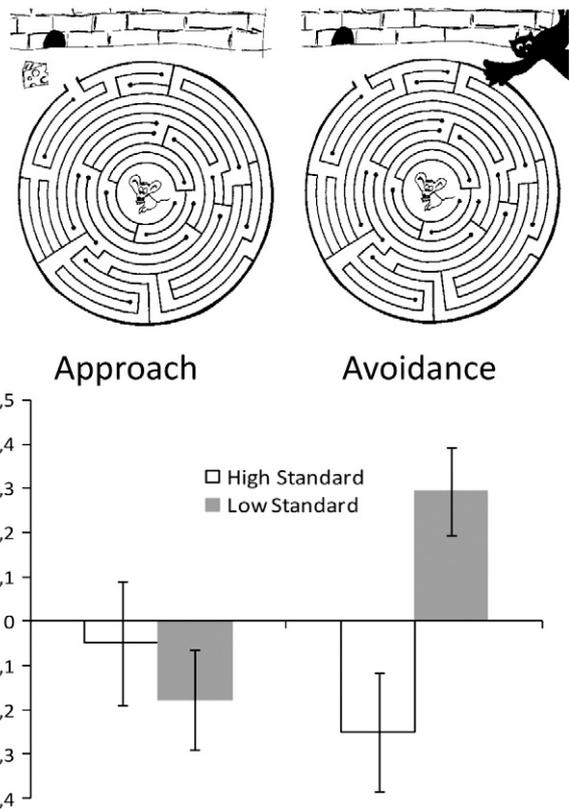


Fig. 1. The top panel presents the experimental setting (Study 1). The bottom panel presents the corresponding mean self-evaluated adjustments (z-scores) as a function of approach and avoidance, and standard (high vs. low). Error bars indicate standard errors of the means.

Results and discussion

We conducted a 2 (approach vs. avoidance) by 2 (high vs. low standard) between-participants ANOVA on self-evaluated adjustment. As can be seen in Fig. 1, and as predicted, priming approach/avoidance moderated the impact of comparison on self-evaluation, $F(1, 137) = 6.00$, $p = .02$, $d = 0.42$ (all other $ps > .12$). In the approach condition, participants' self-evaluation moved (although not significantly so, $t[137] = 0.65$, $p = .51$, $d = 0.11$) toward the target value (assimilation). Conversely, in the avoidance condition participants' self-evaluation moved away from the target value (contrast), which resulted in a lower self-evaluation when comparing with a high versus low standard, $t(137) = 2.84$, $p = .005$, $d = 0.48$.

This first study illustrates that experiencing approach/avoidance moderates the self-evaluative impact of comparison information. This presupposes, however, that participants primed with approach/avoidance *before* processing comparison information would still have the corresponding experience while processing this information. Yet a more direct test of our approach/avoidance hypothesis be to have our participants literally move forward (approaching) or backward (avoiding) *while* being presented with comparison information.

Study 2

To test more directly our approach/avoidance hypothesis, participants now performed approach versus avoidance movements while processing comparison information. Because classical manipulations of approach/avoidance movements are sometimes ambiguous (Seibt, Neumann, Nussinson, & Strack, 2008; van Dantzig, Zeelenberg, & Pecher, 2009), we adapted Koch, Holland, Hengstler, and van Knippenberg's (2009) body locomotion procedure and had our participants move themselves toward or away from comparison

¹ In Study 1, responses were log-transformed because of heteroscedasticity issues.

information. Unlike Koch et al. (2009), who had their participants walk a few steps (forward or backward) before completing a set of Stroop items, our induction allowed each comparison information to be displayed while participants were moving toward or away from comparison information. Consequently, our participants experienced approach and avoidance during the acquisition of information.

Method

Participants

Sixty-eight female students ($M_{age} = 20.38$, $SD_{age} = 3.58$) received extra course credits for participating in what was presented as a cognitive psychology study dealing with the impact of locomotion on cognitive processes. All the participants were randomly assigned to the conditions of a 2 (approach vs. avoidance) by 2 (high vs. low standard) between-participants design.

Procedure

Participants stood on a central platform in front of a 70×90 cm screen and first performed a bogus span task, which used on the same procedure that participants would undertake for comparison task. We used this first task because it fits with the cover-story and because we wanted our participants to practice the procedure necessary to receive each information while walking forward or backward. For this procedure, participants had to walk two steps toward (approach) or away from (avoidance) the screen to receive each comparison information sentence (or each list of numbers in the bogus span task). These sentences were displayed 700 ms after participants left the central platform. By doing so, participants were moving toward (or away from) the screen when sentences were displayed and thus experienced approach or avoidance movements while acquiring comparison information. Participants were instructed to go back to the central platform when the displayed sentence disappeared (sentence display durations varied depending on sentence length). Five comparison sentences described a second year student (Alex) and her/his adjustment to a new city and college. The remainder of the procedure was the same as Study 1, except that Alex's adjustment concerned a new city and a new college instead of adjustment to a new city and a new job. Accordingly, as a self-evaluated adjustment, participants now assessed how often they went to college per month and how many friends they had in their city.

Results and discussion

We conducted a 2 (approach vs. avoidance) by 2 (high vs. low standard) between-participants ANOVA on self-evaluated adjustment. As can be seen in Fig. 2, and as predicted, body locomotion moderated the impact of comparison on self-evaluation, $F(1, 64) = 4.16$, $p = .04$, $d = 0.50$ (all other $ps > .21$). Hence, for participants who approached the screen, their self-evaluation moved toward the target value (assimilation), $t(64) = 2.44$, $p = .01$, $d = 0.60$. Conversely, for participants who moved away from the screen had their self-evaluation moved (although not significantly so, $t[64] = 0.53$, $p = .59$, $d = 0.13$) away from the target value (contrast).

Study 2 replicates Study 1 by showing that approach/avoidance moderates the self-evaluative impact of comparison information. In contrast with Study 1, where we manipulated approach/avoidance with a priming procedure before presenting comparison information, participants in Study 2 literally moved toward or away from the screen that displayed comparison information.

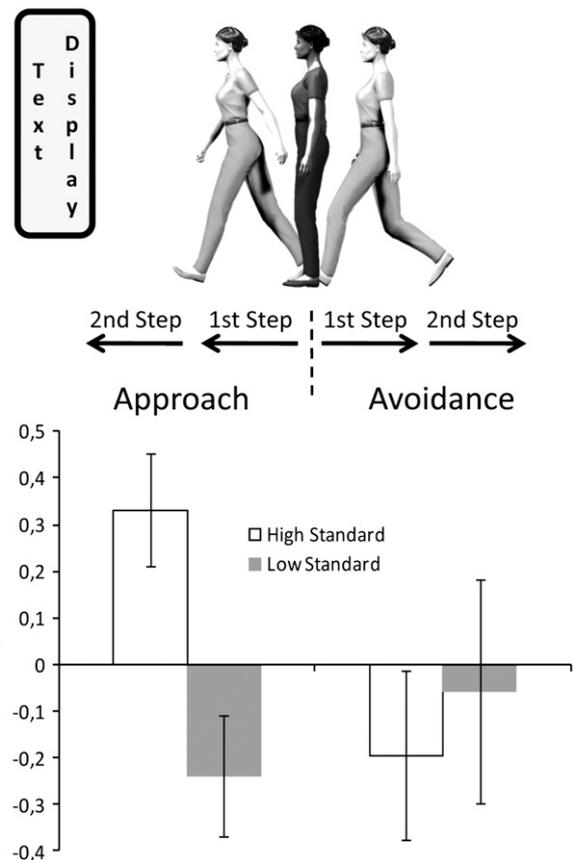


Fig. 2. The top panel presents the experimental setting (Study 2). The bottom panel presents the corresponding mean self-evaluated adjustments (z-scores) as a function of approach and avoidance, and standard (high vs. low). Error bars indicate standard errors of the means.

Study 3

After changing the approach/avoidance induction from Study 1 to Study 2, we now wanted to keep the same body locomotion induction, but extend our results by using totally different comparison information and self-evaluation measure. To do this, we adapted Häfner and Schubert's (2010) procedure by exposing our participants to pictures of moderately attractive or unattractive comparison targets and later asking participants to evaluate their own attractiveness. For purposes of exploration, we also included a baseline condition in which participants were neither asked to move nor received any comparison information.

Method

Participants

One hundred seventy-four students (109 female; $M_{age} = 21.48$, $SD_{age} = 3.31$) were paid 10€ for their participation. They were randomly assigned to one of the conditions of a 2 (approach vs. avoidance) by 2 (high vs. low standard) between-participants design plus a baseline condition.

Procedure

The procedure was similar to Study 2 except that we changed the nature of comparison information and the self-evaluation measure. Instead of written comparison information, participants were now presented with three pictures of people who were the same gender as the participants. They were asked to look at the pictures carefully for a

later recognition task. These comparison targets were either attractive (high standard) or unattractive (low standard).² Again, participants had to walk two steps toward or away from the screen to get each new comparison information (i.e., each picture). Then, amongst demographic questions, participants rated how beautiful and how intelligent they felt (1 = *not at all* to 10 = *very much*). We also measured self-evaluated intelligence to control for a general self-positivity bias.

Results and discussion

We conducted a 2 (approach vs. avoidance) by 2 (high vs. low standard) between-participants ANCOVA on self-evaluated attractiveness with self-evaluated intelligence as a covariate.³ This analysis first revealed a positive relationship between self-evaluated attractiveness (i.e., attractiveness) and self-evaluated intelligence, $F(1, 130) = 86.49, p < .01, d = 1.63$.⁴ More critically, as can be seen in Fig. 3, body locomotion moderated the impact of comparison on self-evaluation, $F(1, 130) = 4.53, p = .03, d = 0.37$ (all other $ps < .53$). Hence, for participants approaching the screen, their self-evaluation moved toward the target value (assimilation), $t(130) = 1.94, p = .05, d = 0.34$. Conversely, for participants moving away from the screen, their self-evaluation moved (although not significantly so, $t[130] = 1.05, p = .29, d = 0.18$) away from the target value (contrast).

This study replicates the results of the first two studies while using the same approach/avoidance induction from Study 2, but with three major differences. First, we used pictures of three comparison targets, instead of sentences about one comparison target. Second, we used self-evaluated attractiveness, instead of self-adjustment to a city. Third, we used a direct measure of self-evaluation (from “I feel not at all attractive” to “I feel very much attractive”), instead of a more indirect measure of self-evaluation (e.g., “I have 30 friends”). Despite these major differences, this study nicely replicates the other two, which enables to extend and to generalize our previous results.

General discussion

As predicted, experiencing approach/avoidance while processing comparison information moderates its effect on self-evaluation. To the best of our knowledge, these are the first studies to show that approach/avoidance, both *via* priming (Study 1) and body locomotion (Studies 2 and 3), moderates the effect of comparison information on self-evaluation. Moreover, this was shown with both self-evaluated adjustment (Studies 1 and 2) and self-evaluated attractiveness (Study 3).

Although, the same (cross over) mean pattern was found consistently within our three studies, the two simple effects testing assimilation and contrast were not significant within the same study. Therefore, to strengthen our conclusion, we conducted a meta-analysis using the “adding z-method” (see Rosenthal, 1978). This analysis confirmed that in the approach conditions, self-evaluation moved significantly toward the target value (assimilation), $z = 2.87, p = .004$, while in the avoidance conditions, self-evaluation moved significantly away from the target value (contrast), $z = 2.52, p = .01$.⁵

² A pretest revealed that attractive targets from both sexes were rated as more beautiful than the unattractive ones (all $F[1, 37] > 101$, all $ps < .01$). Moreover, attractive and unattractive targets differed significantly from the middle of the scale (all $F[1, 37] > 5$, all $ps < .03$).

³ The mean of the baseline condition ($M = 5.71; SD = 1.21$) did not differ significantly from the four experimental conditions and felt close to the average of these conditions. It will not be discussed further.

⁴ Self-evaluated intelligence did not differ across conditions (all $ps > .21$).

⁵ Following Rosenthal (1978), we also used two other methods (“adding logs” and “adding probabilities”), which led to the same conclusions (all $ps < .03$). Note that to be more conservative and in contrast with Rosenthal’s suggestion, we conducted only two-tailed tests.

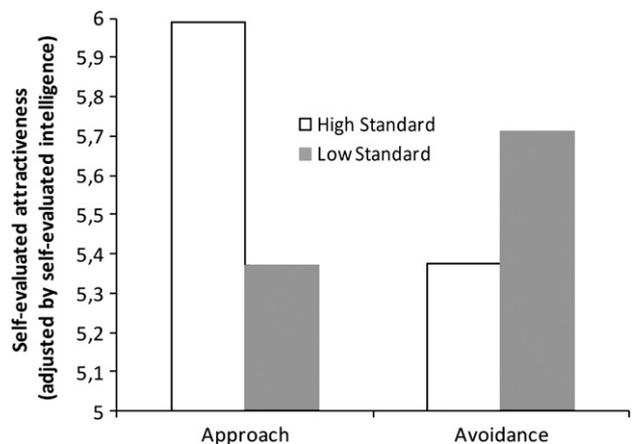


Fig. 3. Mean self-evaluated attractiveness (adjusted by self-evaluated intelligence) as a function of approach and avoidance, and standard (high vs. low). As these are adjusted means, no error bars are presented (Study 3).

These studies show that approach and avoidance lead to self-evaluative assimilation and contrast. This suggests that experiencing approach and avoidance is relevant experiential information, which gives the impression that one is moving toward (leading to assimilation) or away from the target (leading to contrast). Hence, as it is true in other domains, it might be no coincidence that we use metaphors such as *moving forward* (Lakoff & Johnson, 1980; Sherman & Hoffmann, 2007). Here, we showed that sometimes truly physical experiences can influence the direction of comparison effect on self-evaluation.

We have proposed that approach/avoidance might be used as a type of experiential information indicating that the self is moving toward or away from the comparison target. It is still possible, however, that this link is more indirect. Indeed, the global/local processing style model suggests that approach induces a global/inclusive processing—which might favor assimilation—while avoidance induces a local/exclusive processing—which might favor contrast (Förster, Liberman, & Kuschel, 2008). Future work could test for such mediation through global/local processing.

Although, we showed that approach/avoidance moderates the self-evaluative impact of comparison information, some loose ends remain. First, Mussweiler, Rüter, and Epstude (2004a, b) have shown that contrast effects are more likely than assimilation when the standard is extremely high or low. Not having manipulated the extremity of the comparison standard, we do not know whether the moderation effect of approach/avoidance holds whatever the extremity of the standard. Second, we only relied on social comparison standards. Based on our theoretical reasoning, however, similar results should be found with other kinds of goals or standards (e.g., ideal self; Higgins, 1987).

These studies also raise a question related to the cognitive impact of comparison information. Indeed, comparing with superior others often threatens self-evaluation (Tesser, 1988), which distracts attention from the task at hand (Muller, Atzeni, & Butera, 2004; Muller & Butera, 2007). The current work highlights that experiencing approach versus avoidance should respectively decrease versus increase the distracting effect of such comparison with superior others.

The literature taught us that, to feel better about ourselves, we often avoid information about Sherlock Holmes of all kinds, while favoring information about Homer Simpsons (Wills, 1981). The current studies suggest that to feel good about ourselves, we’d better (literally) run after the former, while running away from the latter.

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