

# Regulatory Focus in Predictions About Others

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## Abstract

Based on social projection research, four studies investigated whether people rely on their own regulatory focus when making predictions about others. Chronic (Study 1) and induced (Study 2) regulatory focus shaped estimations of others' strategic promotion or prevention inclinations and choices between enriched (fitting promotion) and impoverished options (fitting prevention). Providing indirect process evidence via boundary conditions, participants only relied on their induced regulatory focus in predictions of others' inclinations to seek romantic alternatives to the extent that this did not run counter to stereotypic gender beliefs (Study 3). In addition, participants only relied on their induced regulatory focus in preference predictions concerning promotion and prevention products when they lacked idiosyncratic target knowledge (Study 4). These effects were not mediated by mood, judgment-certainty, perceived task-enjoyment, or task-difficulty. Implications of these findings for social projection research as well as possible interpersonal consequences are delineated.

## Keywords

regulatory focus, projection, egocentrism, social judgment, person perception

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On a daily basis, people are faced with the problem of being asked to offer advice to others, and even sometimes of having to make decisions for them. Occasionally, they may want to predict others' behavior despite having only very limited information. This can lead to some difficulty. For example, should one advise a colleague to spend the summer vacation in an average but safe-bet resort or to go on the more tempting tour including wonderful beaches—but also rather shabby accommodation?

Research has shown that when attempting to make decisions and predictions regarding others, people are generally egocentric and presume them to be like themselves, especially when there is some ambiguity about these targets (Gilovich, 1990; Green & Sedikides, 2001; Krueger, 2000; Lambert & Wedell, 1991). Although the various models addressing egocentrism in social judgment differ in their specific assumptions, they converge in holding that people's general default strategy when inferring what other people may be thinking, feeling, or planning is to generalize by drawing an analogy from themselves (e.g., Alicke, Dunning, & Krueger, 2005; Ames, 2004a, 2004b; Epley, Keysar, Van Boven, & Gilovich, 2004; Krueger, 2000, 2007; Nickerson, 1999; but see Karniol, 2003, for an exception).

Here we argue that people rely on their own motivational orientation in terms of promotion or prevention focus (Higgins, 1997, 1998) when forecasting others' strategic inclinations, choices, behaviors, and preferences. Furthermore, we not only suggest that regulatory focus may

impact predictions of others but also delineate when this should be more likely to occur than not.

## Egocentrism and Social Projection in Social Judgments

In its broadest sense, social projection pertains to people ascribing their characteristics onto others or “a set of processes by which people expect others to be similar to themselves” (Robbins & Krueger, 2005, p. 32). This seems to be the rule rather than the exception, with research on egocentrism and social projection repeatedly showing the self to be a persistent and distorting source in social judgments (Alicke et al., 2005; Krueger, 2000, 2007). A well-known illustration of this tendency is the false-consensus effect, where people use information about themselves when making predictions about the behavior and personality of other people (Marks & Miller, 1987), thus perceiving high consensus (Ross, Greene, & House, 1977) and believing that others resemble them

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(Katz & Allport, 1931; Krueger, 2007). People explicitly reference the self when making social judgments (Dunning & Hayes, 1996) and their assessment of traits (Newman, Duff, & Baumeister, 1997) and trait patterns in others is rooted in self-information (Critcher & Dunning, 2009).

Even when people try to take on others' perspectives, they end up anchoring strongly on themselves, thus projecting to others their own visual perspectives (Keysar, Barr, Balin, & Brauner, 2000) as well as the knowledge about privileged information that they hold (Epley et al., 2004; Nickerson, 1999).

It has therefore long been acknowledged that projection should be considered as pertaining to more than merely the ascription of one's traits to others and as a "process by which persons attribute personality traits, characteristics, or motivations to other persons as a function of their own personality traits, characteristics, or motivations" (Holmes, 1978, p. 677).

### Motivation in Research on Projection

Recently, some steps in addressing motivation in projection research have been taken. Govorun, Fuegen, and Payne (2006) found evidence for *defensive projection* in that a threat to a specific dimension of people's self-concept led them to derogate stereotyped others on this dimension. Furthermore, Maner and colleagues (2005) provided empirical support for *functional projection*: Activated goals (i.e., self-protection and mate-search) led participants to perceive functionally relevant emotional expressions (i.e., anger and sexual arousal) in goal-relevant social targets (see also Lenton, Bryan, Hastie, & Fischer, 2007). Finally, people also project their *goals* (Kawada, Oettingen, Gollwitzer, & Bargh, 2004; Oettingen, Ahn, Gollwitzer, Kappes, & Kawada, 2014). For instance, participants who chronically held a learning goal more strongly than a performance goal believed others to also hold a learning goal more strongly (Kawada et al., 2004; Study 1). Similarly, participants implicitly primed with or explicitly assigned to have the goal to compete perceived others as striving for competitive goals more than control participants (Kawada et al., 2004; Study 2).

The present research extends these lines by investigating a heretofore unaddressed aspect, namely, the projection of motivational, self-regulatory orientations, and in particular regulatory focus (Higgins, 1997). Self-regulation "comprises the volitional and cognitive processes that individuals apply to reach a (subjectively) positive end-state" (Sassenberg & Wolfin, 2008, p. 127). Thus, the novel and unique contribution of the current work is that it considers an important research gap at the intersection of motivation and egocentrism in social judgment by considering projection effects produced by general motivational orientations *beyond* specific goals and pertaining to *how* others are assumed to generally function. Previous lines of research either addressed motivated projection (i.e., *why* one projects; for example, to protect one's self-concept; Govorun et al., 2006) or the

projection of very specific goals (i.e., *what* is projected; for example, one's goal to compete; Kawada et al., 2004). The current research addresses the open question as to whether people are also egocentric concerning their general motivational orientations.

### Regulatory Focus Theory

Regulatory focus theory (Higgins, 1997, 1998; for reviews, see Higgins & Spiegel, 2004; Molden, Lee, & Higgins, 2008) distinguishes between two motivational orientations operating within individuals, a promotion and a prevention focus. These foci orient individuals' attention to different needs (i.e., nurturance/achievement in a promotion focus vs. safety/responsibility in a prevention focus) that imply the pursuit of different goals, relating to ideals and aspirations in a promotion focus and to oughts and duties in a prevention focus. In a promotion focus, people strive to achieve positive outcomes (gains) and attempt to avoid encountering the absence of positive outcomes (non-gains), with success and failure resulting in cheerfulness- and dejection-related emotional experiences, respectively. In a prevention focus, people strive to ensure the absence of negative outcomes (non-losses) and attempt to avoid encountering negative outcomes (losses), with success and failure resulting in quiescence- and agitation-related emotional experiences, respectively (Higgins, 1997; Higgins, Grant, & Shah, 1999; Higgins, Roney, Crowe, & Hymes, 1994; Higgins, Shah, & Friedman, 1997).

These motivational orientations have important consequences for strategies used in judgment and decision making as well as for information processing. For example, promotion-focused individuals are more likely to engage in risky, rather eager strategies and to be overly inclusive when evaluating possibilities to ensure "hits" (i.e., not missing opportunities; avoiding errors of omission) as they seek to maximize the potential for gains at the cost of encountering losses. In contrast, prevention-focused individuals engage in vigilant, rather conservative strategies and tend to be overly exclusive (i.e., ensuring correct rejections; avoiding errors of commission) as they seek to follow rules and maintain security from losses at the cost of missing gains (Crowe & Higgins, 1997; Förster, Higgins, & Bianco, 2003; Förster, Higgins, & Idson, 1998; Higgins et al., 2001; cf. also Friedman & Förster, 2001; Sassenberg, Jonas, Shah, & Brazy, 2007).

To illustrate some further consequences, promotion-focused individuals are more strongly motivated by incentives framed as gains/non-gains than prevention-focused individuals, with the opposite being true for incentives framed as non-losses/losses (Shah, Higgins, & Friedman, 1998). And whereas promotion-focused individuals are more easily persuaded by gain-framed messages than prevention-focused individuals, the opposite is true for loss-framed messages (Lee & Aaker, 2004). These—and other findings—highlight the principle of regulatory fit (Higgins, 2000, 2005), stating that the overall hedonic intensity of

behaviors, events, and objects is a function of the phenomenological fit between a specific behavior, event, and object and individuals' regulatory focus. The experience of fit takes place when the manner of people's engagement in an activity sustains (rather than disrupts) their goal orientation or interests regarding the activity (Higgins, 2005). Fit influences judgment and decision making, attitudes, behavior, and task performance, and received much attention in research on persuasion and consumer decision making (Aaker & Lee, 2006; Cesario, Higgins, & Scholer, 2008).

The current work builds on the ideas and methodologies applied in research on regulatory focus to investigate whether individuals rely on their own regulatory focus when making predictions of others. To our knowledge, this proposition has not been tested so far. The research also sought to investigate boundary conditions by targeting the role of stereotypic and idiosyncratic knowledge concerning prediction targets.

## The Present Research

The primary goal of the present research is to show that people rely on their motivational orientations in terms of regulatory focus when making predictions about others. Four studies tested this novel hypothesis. The first measured chronic regulatory focus and observed whether differences in relative regulatory focus strength would lead participants to predict others to demonstrate strategic promotion versus prevention inclinations (Faddegon, Scheepers, & Ellemers, 2008; Sassenberg et al., 2007). The second study manipulated regulatory focus and participants predicted others' choices concerning enriched (fitting promotion) versus impoverished options (fitting prevention; Zhang & Mittal, 2007). Two further studies addressed the assumed projection process by means of boundary conditions. We expected participants to rely on their regulatory focus only to the extent that this did not contradict stereotypic beliefs or that they lacked idiosyncratic target information (Ames, 2004a, 2004b; Bottom & Paese, 1997). In Study 3, stereotypic beliefs concerned women's and men's attention to romantic alternatives (Finkel, Molden, Johnson, & Eastwick, 2009). In Study 4, participants predicted preferences of their friends or people-known-from-sight regarding products differing in their appeal to promotion- versus prevention-focused individuals (Wang & Lee, 2006).

By including chronic differences in regulatory focus and targeting boundary conditions, the current studies show that the effects reported here go beyond the mere activation of cognitive concepts. Furthermore, they examined whether the effects can be explained by other factors, namely, mood, task-enjoyment, and judgment-certainty or task-difficulty.

Importantly, the above general hypothesis might be qualified by findings suggesting stronger effects for promotion compared with prevention focus. Polman (2012) showed that people making choices for themselves are rather prevention focused, whereas people making choices for others are rather

promotion focused. This suggests a fit (Higgins, 2000, 2005) between promotion focus/other decision making and prevention focus/self decision making. In the current studies, people make predictions concerning others' decisions or preferences. Consequently, task requirements fit promotion focus more so than prevention focus, for which participants may experience incongruence. For example, incongruence between primed and chronic regulatory focus creates interference, requires the deployment of additional cognitive resources, and inhibits highly accessible responses (Lisjak, Molden, & Lee, 2012). Interestingly, social comparison research showing that priming promotion results in self-other assimilation whereas priming prevention results in self-other contrast also supports this conjecture (Fayant, Muller, Nurra, Alexopoulos, & Palluel-Germain, 2011; Förster, Liberman, & Kuschel, 2008). Consequently, when priming regulatory focus, we predicted an interaction between regulatory focus and object framing, but we also expected that the canonical interaction would be attenuated by promotion having a potential advantage over prevention.

## Study 1: Chronic Regulatory Focus and Regulatory Inclinations

An initial study tested the proposed relation between people's regulatory focus and their predictions of others' strategic regulatory inclinations. We predicted that participants with a stronger chronic promotion (vs. prevention) focus would expect others to demonstrate more promotion inclinations. Conversely, we predicted that participants with a stronger chronic prevention (vs. promotion) focus would expect others to demonstrate more prevention inclinations.

### Method

**Participants and design.** Fifty-seven students ( $M_{\text{age}} = 18.91$ ,  $SD = 1.04$ ; 49 females) participated for course credit and filled in our questionnaires. We aimed at recruiting 50 participants and stopped recruitment once this number was reached by enough participants (i.e., 57) signing up. To keep the two questionnaires separate, we included an unrelated study between the assessment of participants' chronic regulatory focus measure (first questionnaire) and the measurement of their predictions of an unknown student's regulatory inclinations (second questionnaire).

**Procedure and materials.** A first questionnaire assessed participants' chronic regulatory focus with the Regulatory Focus Questionnaire (RFQ; Higgins et al., 2001). Participants rated how often (1 = *never/seldom*, 5 = *very often*) each item measuring a promotion (six items;  $M = 3.77$ ,  $SD = 0.56$ ;  $\alpha = .69$ ; for example, "How often have you accomplished things that got you psyched to try even harder?") and a prevention focus (five items;  $M = 3.55$ ,  $SD = 0.78$ ;  $\alpha = .85$ ; for example, "Not being careful enough has gotten me into trouble at times,"

reverse-scored) was true. The foci were not correlated,  $r(57) = .08, p > .56$ . Following previous research (Faddegon et al., 2008; Higgins et al., 2001; Righetti, Finkenauer, & Rusbult, 2011; Sassenberg et al., 2007), and because our hypothesis pertained to a relative difference between promotion and prevention focus, we computed a *promotion dominance score* by subtracting the prevention from the promotion score.

Subsequently, participants completed unrelated tasks of a different study for approximately 30 min. Then, and allegedly as part of a third study on impression formation, they were asked to make several predictions concerning another university student with a gender-neutral name. Specifically, they filled in a questionnaire measuring on 7-point scales (1 = *does not at all apply* to 7 = *fully applies*) to what extent they expected this student to pursue and endorse five promotion ( $\alpha = .63$ ) and prevention ( $\alpha = .75$ ) strategies and mottos (taken from Faddegon et al., 2008; Sassenberg et al., 2007; van Stekelenburg, 2006): being guided in life by wishes and duties, running risks and acting with caution, generally thinking about success and security, mostly thinking about what he or she would like to do and have to do, and endorsing the mottos “Nothing ventured, nothing gained” and “An ounce of prevention is worth a pound of cure.” We computed a *promotion strategy index* for the prediction measure by subtracting the prevention scores from the promotion scores for each of the five item-pairs and then averaging across differences (as done by Sassenberg et al., 2007).<sup>1</sup> In addition, we assessed ease of imagining the student (1 = *difficult* to 7 = *easy*), because differences in regulatory focus can impact creative thinking (Friedman & Förster, 2001). We did not measure any variables not mentioned here or in Note 1.

## Results and Discussion

Ease of imagination was not correlated with the promotion dominance score,  $r(57) = -.14, p > .30$ , nor with the promotion strategy index,  $r(57) = -.21, p > .12$ . We regressed promotion strategy index scores on participants' promotion dominance score and found a significant positive relationship,  $B = 0.42, SE = 0.17, t(56) = 2.45, p = .017, 95\%$  confidence interval [CI] = [0.076, 0.756].<sup>2</sup>

This study provides initial evidence that the more promotion-focused (rather than prevention-focused) people are, the more they also expect others to endorse promotion strategies. Conversely, the more prevention-focused (rather than promotion-focused) people are, the more they expect others to endorse prevention strategies. The next study sought to provide causal evidence by manipulating rather than measuring regulatory focus.

## Study 2: Choice Between Enriched Versus Impoverished Options

This study examined the effect of one's activated regulatory focus on expecting others to choose options in line with one's activated focus, and more precisely to choose enriched

options under promotion focus and impoverished options under prevention focus (Zhang & Mittal, 2007). An enriched option is marked by extreme (very high and very low) attribute values, whereas an impoverished option is marked by values clustered around the average. Differences in regulatory focus affect the relative weight decision makers put on positive and negative attributes of such options (Zhang & Mittal, 2007). With a promotion focus (concerned with positive outcomes being present), more weight is given to positive attributes. Conversely, with a prevention focus (concerned with negative outcomes being absent), more weight is given to negative attributes. As a matter of fact, under promotion focus people evaluated impoverished options as less desirable than enriched options (the pattern non-significantly reversed under prevention focus; Zhang & Mittal, 2007; Study 3). Study 2 intended to show that people rely on their activated regulatory focus in making such predictions for others. We predicted a focus-by-option interaction. However, in light of Zhang and Mittal's (2007) findings and because the structural fit between promotion/other decision making (vs. prevention/self decision making; Polman, 2012) and between promotion/social assimilation (vs. prevention/social contrast; Fayant et al., 2011; Förster et al., 2008) likely results in promotion having a potential advantage over prevention, we expected the canonical interaction to be attenuated.

## Method

**Participants and design.** A research intern with the instruction to assess approximately 25 to 30 participants per condition recruited 52 students on campus or in the University library. They were paid 1€ for participation and randomly assigned to the promotion or prevention focus condition. One student (prevention condition) was not considered because other students distracted him during the priming and questionnaire completion and two participants (promotion and prevention condition) were removed following outlier analysis procedures (Cohen, Cohen, West, & Aiken, 2003: Cook's  $D$  values, studentized residuals and graphical index plot examinations). The final sample comprised 49 students ( $M_{age} = 22.61, SD_{age} = 3.03$ ; 34 females).

**Procedure and materials.** Participants completed a well-established regulatory focus manipulation: The maze task (Friedman & Förster, 2001). It involves drawing a path through a labyrinth for a mouse within 2 min. In the *promotion focus* condition, participants led the mouse to a piece of cheese. In the *prevention focus* condition, they led the mouse, depicted at the start, to a mouse hole, depicted at its end, saving it from a bird of prey.

Upon completion or when time was up, participants filled in a questionnaire of an ostensibly unrelated “vacation” study. This involved predicting how another student would choose between two alternative holiday locations (“A” and “B”); the student's name again was gender neutral. Participants were

presented an Attributes  $\times$  Location options table comprising a total of six attributes (e.g., quality of restaurants, cleanliness of beaches), with attribute values ranging from 0 (poor) to 100 (high). This table and the attributes was directly taken from Zhang and Mittal (2007). Both options were of average quality (i.e., attribute average = 50). However, they differed in their attribute quality variance (range enriched = 28-71; impoverished = 47-53). Order of rating the two options was counterbalanced. Participants indicated for each option to what extent the student would think that it was “a good choice” (1 = *not at all* to 5 = *certainly*).<sup>3</sup>

We also assessed participants' mood by asking how they felt (1 = *sad, bad, discontent, and tense* to 7 = *happy, well, content, and relaxed*, respectively;  $\alpha = .81$ ) and their task-evaluation by asking to what extent they thought the task was enjoyable, tedious (reversed), pleasant, and annoying (reversed) (1 = *not at all* to 7 = *very much*;  $\alpha = .74$ ). To ensure that the possible vigilance and uncertainty manifested by prevention-focused participants would not account for possible effects, we assessed to what extent participants felt confident and certain about their judgment and deemed it correct and precise (1 = *not at all* to 7 = *completely*; judgment-certainty:  $\alpha = .91$ ). They also rated their perceived task-difficulty (1 = *not at all difficult* to 7 = *very difficult*). We did not run any conditions or measure any variables not mentioned here or in Note 3.

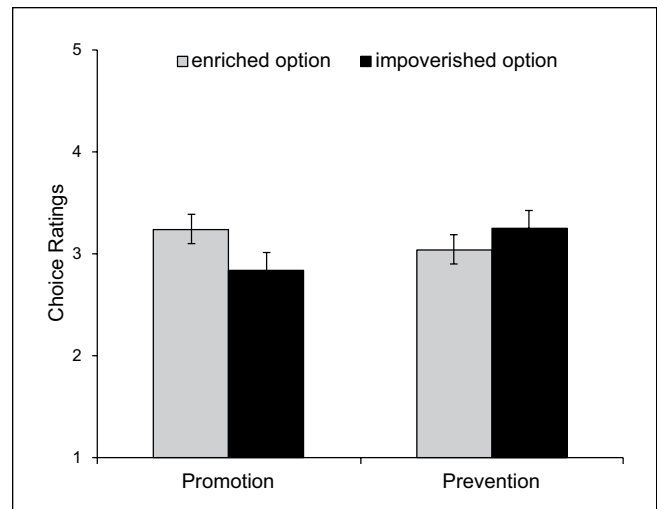
## Results

**Main analyses.** A mixed ANOVA including regulatory focus, presentation order (both between-subjects), and options (within-subject) revealed a marginal order-by-options interaction,  $F(1, 45) = 3.34, p = .074, \eta_p^2 = .07$ , indicating that participants tended to rate whatever option was presented first as a better choice. More importantly, the predicted focus-by-option interaction was significant,  $F(1, 45) = 4.64, p = .037, \eta_p^2 = .09$  (see Figure 1); other  $F$ s < 1. As expected, promotion-focused participants expected the student would think of the enriched option as a better choice ( $M = 3.24, SD = 0.72$ ) than the impoverished option ( $M = 2.84, SD = 0.75$ ),  $t(24) = 2.19, p = .038, d = 0.54, 95\% CI = [0.023, 0.777]$ , whereas prevention-focused participants did not differ in their predictions ( $M_{enriched} = 3.04, SD_{enriched} = 0.69$  vs.  $M_{impoverished} = 3.25, SD_{impoverished} = 0.85$ ),  $t(23) < 1$ .

**Further analyses.** Participants' mood, task-evaluation, judgment-certainty, or perceived task-difficulty was not impacted by regulatory focus, presentation order, or their interaction,  $F$ s < 1.25,  $p$ s > .26.

## Discussion

Interestingly, focusing on people's predictions about *others'* choices between enriched and impoverished options, we observed exactly the same pattern of results as Zhang and



**Figure 1.** Participants' predictions of the social target's choice concerning enriched and impoverished options as a function of their regulatory focus in Study 2.

Note. Error bars represent standard errors.

Mittal (2007) for people's *own* choices, with simple effects emerging for promotion but not prevention focus. Thus, we structurally replicated their findings, with promotion focus leading to a predicted choice of enriched rather than impoverished options and prevention focus not entailing predicted choice differences. As outlined above, further factors that might have mitigated prevention focus effects are the fit between promotion/assimilation (vs. prevention/contrast; Fayant et al., 2011; Förster et al., 2008) and the fact that decision making for others is rather promotion focused (vs. prevention focused; Polman, 2012).

Clearly, the current results cannot be attributed to mood, task-evaluation, judgment-certainty, and task-difficulty. Moreover, they provide causal evidence for differences in regulatory orientation impacting predictions of other people's choices. Overall, they strengthen the notion that people draw upon their own regulatory focus in making judgments about others. However, an important question concerns when people rely on their motivational orientations in predictions about others and when they do not. The boundary conditions examined in the next two studies provide indirect process evidence and show that mere concept activation cannot solely explain the above effects.

## Study 3: Attention to Romantic Alternatives

Previous research established an association of differences in regulatory focus and evaluations of romantic alternatives. Individuals with a strong chronic promotion (vs. prevention) focus show a greater tendency to attend to, positively evaluate, and actively pursue potential alternative partners (Finkel et al., 2009). Building upon this work, we hypothesize that

people primed with regulatory focus will also show this tendency when making predictions about others. However, the extent to which people will rely on their regulatory focus when making such predictions should be moderated by whether or not this contradicts stereotypic gender beliefs. This is because it has been found that, when salient stereotypic information is available, people rely on this information more strongly than on themselves in predicting other's behaviors (Ames, 2004a, 2004b; Bottom & Paese, 1997).

Stereotypic gender perceptions of males and females concerning "romantic alternatives" differ. Men perceive their extra-dyadic sexual behavior as rather common, exhibiting a false-consensus effect—thus estimating that most other men also engage in extra-dyadic sexual behavior. Conversely, women with frequent extra-dyadic sexual encounters perceive themselves as rather unique—estimating that rather few other women engage in this behavior (van den Eijnden, Buunk, & Bosveld, 2000). In addition, women self-stereotype more strongly than men (Cadinu & Galdi, 2012; Latrofa, Vaes, Cadinu, & Carnaghi, 2010) and activating the concept of sexuality (e.g., via sex primes) renders perceptions and social behavior more attuned to gender stereotypes (e.g., women being submissive vs. men being assertive; Hundhammer & Mussweiler, 2012). Also, women are believed to be more caring and concerned with others than men, whereas men are believed to be more dominant and assertive than women (Berger & Krahe, 2013; Deaux & Lewis, 1984). Overall, this "strongly suggests that, on average, the gender stereotype of female communion is revealed in more partner-centered sexual behavior. The gender stereotype of male agency, on the other hand, is revealed in more agentic sexual behavior" (Hundhammer & Mussweiler, 2012, p. 178).

Against this background, we predicted that men, but not women, primed with promotion rather than prevention focus would more likely expect same-sex others would pay attention to romantic alternatives (i.e., a focus-by-gender interaction). Because of women's stronger self-stereotyping and in accordance with the female gender self-stereotype, we expected women to predict that the target would show relatively little attention to romantic alternatives, regardless of regulatory focus (i.e., a main effect of gender).

## Method

**Participants and design.** A research intern with the instruction to recruit approximately each 25 to 30 female and male participants recruited 65 students on campus or in the University library. They were paid 1€ for participation and randomly assigned to the promotion or prevention focus condition. One participant (prevention condition) who had a friend tell him what answers to give was not considered. The final sample comprised 64 students ( $M_{age} = 20.38$ ,  $SD_{age} = 2.07$ ; 32 females, 32 males).

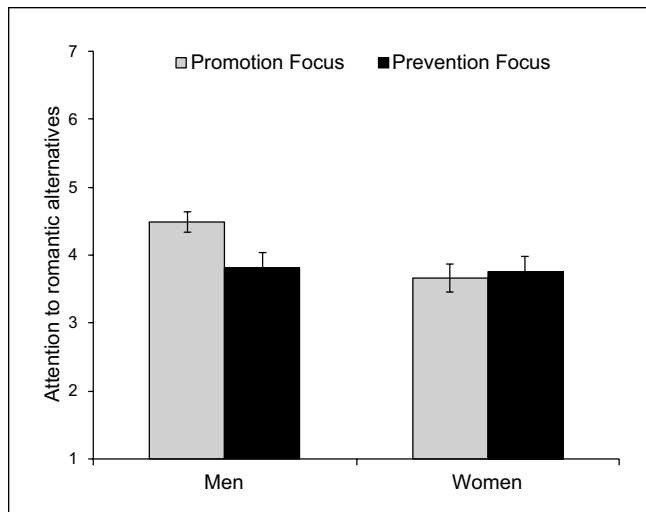
**Procedure and materials.** We used a different manipulation of regulatory focus than in Study 2. Participants in the *promotion focus* condition were asked to write about their hopes and aspirations and how they had changed since childhood. Participants in the *prevention focus* condition wrote about their current duties and obligations and how they had changed since childhood (Higgins et al., 1994).

Next, participants were introduced to a supposedly unrelated study and read a short scenario describing a student protagonist (with a gender-neutral name, but referred to as "she"/"he" for female/male participants) in an 11-month relationship. The text made it clear that the protagonist felt ambivalent concerning the relationship. For example, the text stated that "If one were to ask her/him about her/his feelings for her/his partner, s/he would say that s/he really likes him/her, even if s/he does not feel fully in love" and "They see each other twice a week, that is enough for her/him. They do not have long-term projects, like moving in with each other or marrying, but they have planned some short-term projects, like going for a week on vacation together."

A pre-test ( $n = 20$ , 12 females) in which students rated the extent to which the protagonist (gender-neutral name) was involved in and committed to the relationship (1 = *not at all* to 7 = *fully*) showed that this scenario conveyed the desired relationship-ambiguity, with ratings not differing from the scale midpoint (4),  $M = 4.20$ ,  $SD = 1.36$ ,  $t(19) = 0.66$ ,  $p = .52$  (results did not differ by gender). A further pre-test ( $n = 51$ , 25 females; one outlier removed according to Cohen et al., 2003) presenting the scenario and asking participants to what extent the protagonist (gender-neutral name) would have the intention to start an extra-dyadic affair (1 = *not at all* to 9 = *definitely*) if the protagonist was male or a female (order was counterbalanced) revealed a main effect of gender,  $F(1, 49) = 4.80$ ,  $p = .033$ ,  $\eta_p^2 = .09$ : Participants thought a male ( $M = 4.61$ ,  $SD = 1.73$ ) compared with a female protagonist ( $M = 4.10$ ,  $SD = 1.83$ ) would have stronger intentions. This was qualified by a protagonist-by-gender interaction,  $F(1, 49) = 7.15$ ,  $p = .010$ ,  $\eta_p^2 = .13$ . In line with the stereotypic gender perceptions reviewed above, for *same-sex* protagonists women assumed weaker intentions ( $M = 3.36$ ,  $SD = 1.68$ ) than men ( $M = 4.69$ ,  $SD = 1.74$ ),  $t(50) = -2.78$ ,  $p = .008$ ,  $d = 0.78$ , 95% CI =  $[-2.295, -0.370]$ . For *different-sex* protagonists women ( $M = 4.52$ ,  $SD = 1.76$ ) and men ( $M = 4.81$ ,  $SD = 1.70$ ) did not differ,  $t < 1$ .

Participants in the main study rated to what extent the protagonist would pay attention to romantic alternatives (1 = *never* to 7 = *always*) with a six-item measure by Miller (1997; for example, "S/he flirts with people of the opposite sex without mentioning her/his partner";  $\alpha = .62$ ) previously used in regulatory focus research (Finkel et al., 2009).

Using the same items and scales as in Study 2, we assessed participants' mood ( $\alpha = .84$ ), task-evaluation ( $\alpha = .80$ ), judgment-certainty ( $\alpha = .83$ ), and perceived task-difficulty (one item). Participants also reported their relationship commitment



**Figure 2.** Participants' predictions of the social target's attention to romantic alternatives as a function of their regulatory focus and gender in Study 3.

Note. Error bars represent standard errors.

(1 = *not at all* to 7 = *very much*) concerning their current or last relationship: "I am/was committed to my current/last relationship; I consider/ed my partner a soul mate";  $r_{\text{current}}(31) = .75$ ,  $r_{\text{past}}(31) = .73$ ,  $ps < .001$ . We did not run additional conditions or measure additional variables not mentioned here.

## Results

**Main analyses.** An ANOVA including regulatory focus and gender on participants' predictions of the protagonist's attraction to romantic alternatives revealed a main effect of gender,  $F(1, 60) = 5.88$ ,  $p = .018$ ,  $\eta_p^2 = .09$ . In line with the gender stereotype, women ( $M = 3.71$ ,  $SD = 0.83$ ) thought the same-sex protagonist would pay less attention to alternatives than men did ( $M = 4.15$ ,  $SD = 0.66$ ). Importantly, this was qualified by a significant focus-by-gender interaction,  $F(1, 60) = 4.57$ ,  $p = .037$ ,  $\eta_p^2 = .07$  (see Figure 2). Results remained significant when controlling for relationship commitment,  $F(1, 58) = 4.43$ ,  $p = .040$ ,  $\eta_p^2 = .07$ . As predicted, promotion-focused men predicted the same-sex protagonist to more likely be attracted to romantic alternatives and to pursue them ( $M = 4.48$ ,  $SD = 0.61$ ) than prevention-focused men ( $M = 3.81$ ,  $SD = 0.55$ ),  $F(1, 60) = 6.83$ ,  $p = .011$ ,  $\eta_p^2 = .10$ , 95% CI = [0.156, 1.177]. Predictions of women did not differ ( $M_{\text{promotion}} = 3.66$ ,  $SD_{\text{promotion}} = 0.81$ ;  $M_{\text{prevention}} = 3.76$ ,  $SD_{\text{prevention}} = 0.87$ ),  $F < 1$ . Alternatively, under promotion focus men but not women expected stronger intentions,  $F(1, 60) = 10.41$ ,  $p = .002$ ,  $\eta_p^2 = .15$ , 95% CI = [0.313, 1.333]. In contrast, under prevention focus men and women did not differ from each other,  $F < 1$  (for means see above).

**Further analyses.** Several ANOVAs including regulatory focus and gender on mood, judgment-certainty, task-evaluation, and

perceived task-difficulty revealed no interactions,  $F_s < 1.50$ ,  $ps > .22$ . Also, no significant main effects emerged, though three out of eight were marginal,  $3.01 < F_s < 3.65$ ,  $.06 < ps < .09$ , the other five  $F_s > 1.5$ ,  $ps > .22$ . When simultaneously controlling for *all* variables with marginal effects (i.e., judgment-certainty, task-evaluation, task-difficulty), the focus-by-gender interaction remained significant,  $F(1, 56) = 4.27$ ,  $p = .044$ ,  $\eta_p^2 = .07$  (one participant skipped the page with the control variables). In short, our findings cannot be accounted for by these variables.

## Discussion

The current results extend previous research to predictions of others, demonstrating that promotion focus entails larger attention to, more positive evaluations, and more vigorous pursuit of romantic alternatives (Finkel et al., 2009). As predicted, this pattern emerged only for men. Women's predictions did not differ by regulatory focus. Instead—and in line with gender stereotypes—they predicted women to seek romantic alternatives to a lesser extent than men (cf. Hundhammer & Mussweiler, 2012). Also, although men and women differed in their assumed intent under promotion focus, they did not under prevention focus. As differences in regulatory focus may influence expectancies about one's partner, they have important implications for research investigating regulatory focus effects in intimate relationships (Molden, Lucas, Finkel, Kumashiro, & Rusbult, 2009).

Corroborating the robustness and generalizability of Study 2, the same effects emerged again but with a different regulatory focus manipulation and in a different prediction domain. Also, simple effects were stronger under promotion compared with prevention focus. More importantly, by identifying stereotypic information as a boundary condition, the current results show that our previous effects cannot easily be explained by mere concept activation.

## Study 4: Product Preferences

Whereas promotion focus is associated with positive outcome sensitivity, prevention focus is associated with negative outcome sensitivity (Higgins, 1997). In turn, consumers are interested in different product features depending on their focus (i.e., safety-oriented under prevention and comfort-oriented under promotion focus) and evaluate focus compatible products more positively (Werth & Förster, 2007). This also applies to the *same* product conveying different claims: A toothpaste advertised with promotion claims is evaluated more positively than when advertised with prevention claims under a promotion focus, whereas the reverse holds under a prevention focus (Wang & Lee, 2006; see Lee & Aaker, 2004, for regulatory fit effects in product appraisals). In other words, products have different instrumental values depending on the regulatory goal pursued (for investment decisions, see Florack & Hartmann, 2007). However, consumers only rely on their regulatory focus in product

preferences to the extent that they are not strongly involved with the choice (i.e., only under low involvement; Wang & Lee, 2006).

Schul and Vinokur (2000) called for research investigating whether social projection differs “as a function of the level of acquaintance and the amount of knowledge the observer has about the target” (p. 999). We content that similar to Wang and Lee’s (2006) findings people may rely on their own regulatory focus differently depending on *who* they make preference predictions for. People have more idiosyncratic information available when making predictions about a friend than when making predictions about an acquaintance. As a matter of fact, in close relationships people use particularistic (not egocentric) information when judging others’ preferences (Hoch, 1987), whereas they are most egocentric when encountering ambiguity (Gilovich, 1990; Green & Sedikides, 2001; Krueger, 2000; Lambert & Wedell, 1991).

We thus predicted that only participants making predictions for loose acquaintances, but not participants making predictions for friends, would demonstrate the regulatory fit effect on toothpaste preferences (Wang & Lee, 2006). Importantly, for the reasons outlined above, simple effects should again be attenuated for prevention compared with promotion focus (cf. Fayant et al., 2011; Förster et al., 2008; Polman, 2012).

## Method

**Participants and design.** On Amazon’s Mechanical Turk ([www.mturk.com](http://www.mturk.com); see Buhrmester, Kwang, & Gosling, 2011), 96 English native speaking U.S. resident participants took part online for US\$0.25. We aimed at recruiting approximately double the number of participants of Wang and Lee (2006, Study 1; see below; 51 participants). We did not consider participants who (a) failed an attentiveness check based on recommendations by Oppenheimer, Meyvis, and Davidenko (2009;  $n = 1$ ); (b) failed to follow priming instructions (e.g., writing about the weather;  $n = 2$ ); (c) failed to follow target instructions (e.g., writing “home” in response to the person-known-from-sight instructions; see below;  $n = 3$ ); or (d) indicated having guessed the aim of the study ( $n = 2$ ); three outliers were removed (all in the promotion/friend condition; Cohen et al., 2003). The final sample comprised 85 participants ( $M_{\text{age}} = 35.86$ ,  $SD_{\text{age}} = 12.69$ ; 46 females, 38 males, 1 transgender/intersex).

Participants were randomly assigned to conditions in a 2 (target: friend vs. person-known-from-sight)  $\times$  2 (focus: promotion vs. prevention)  $\times$  2 (product: promotion-framed vs. prevention-framed) mixed design, with the first two factors varying between and the last factor varying within participants.

**Procedure and materials.** Regulatory focus (*promotion* vs. *prevention*) focus was manipulated similarly to Study 3

(Freitas & Higgins, 2002; Higgins et al., 1994). The promotion (prevention) instructions read:

Please think of something you ideally would like (ought) to do . . . think about hopes or aspirations (duties or obligations) that you currently have. Please write about these hopes and aspirations (duties and obligations) below and also what you are doing to attain them.

Participants were asked to provide at least four sentences.

Next, in an ostensibly unrelated consumer interests study, participants were instructed to either think of a good *friend* or a *person known from sight*. They reported either their friend’s initials or where they normally see the loose acquaintance.

Subsequently, participants read two toothpaste descriptions (see Wang & Lee, 2006; cf. Lee & Aaker, 2004; Werth & Förster, 2007). One toothpaste description had three promotion claims (it whitens one’s teeth, freshens one’s breath, strengthens one’s tooth enamel), whereas the other had three prevention claims (it reduces risks of gingivitis, diminishes cavities, fights plaque buildup).

Participants indicated how much the target would like each of the products and would think they were good products (1 = *very much dislike/bad product* to 7 = *very much like/good product*); promotion-framed toothpaste  $r(85) = 0.79$ ,  $p < .001$ ; prevention-framed toothpaste  $r(85) = 0.71$ ,  $p < .001$ . We did not run any conditions or measure any variables not mentioned here.

## Results

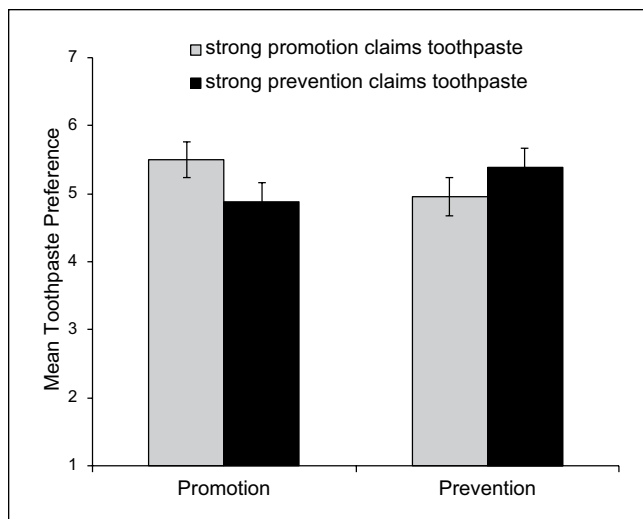
Participants’ predictions of toothpaste preferences were analyzed with a 2 (target: friend vs. person-known-from-sight)  $\times$  2 (focus: promotion vs. prevention)  $\times$  2 (product: promotion-framed vs. prevention-framed) mixed-model ANOVA, with product as within-subject factor. This yielded a marginal focus-by-product interaction,  $F(1, 81) = 3.13$ ,  $p = .081$ ,  $\eta_p^2 = .04$ , which was qualified by a marginal target-by-focus-by-product interaction,  $F(1, 81) = 2.81$ ,  $p = .098$ ,  $\eta_p^2 = .03$  (see Table 1); other  $F$ s  $< 1$ , other  $p$ s  $> .55$ . Importantly, decomposing this interaction by prediction target the expected focus-by-product interaction was significant in the person-known-from-sight condition,  $F(1, 38) = 7.17$ ,  $p = .011$ ,  $\eta_p^2 = .16$  (see Figure 3), but not in the friend condition,  $F < 1$ . Furthermore, promotion-focused participants predicted the person-known-from-sight to prefer the promotion-claims ( $M = 5.50$ ,  $SD = 1.08$ ) over the prevention-claims toothpaste ( $M = 4.88$ ,  $SD = 1.18$ ),  $F(1, 38) = 4.29$ ,  $p = .045$ ,  $\eta_p^2 = .10$ , 95% CI = [0.141, 1.221]. This pattern reversed for prevention-focused participants, who tended to expect the acquaintance to prefer the prevention-claims ( $M = 5.39$ ,  $SD = 1.31$ ) over the promotion-claims toothpaste ( $M = 4.96$ ,  $SD = 1.35$ ),  $F(1, 38) = 2.88$ ,  $p = .098$ .



**Table 1.** Participants' Toothpaste Preference Predictions as a Function of Prediction Target and Regulatory Focus (Study 4).

	Friend		Person known-from-sight	
	Promotion focus	Prevention focus	Promotion focus	Prevention focus
Toothpaste with promotion claims	5.10 (1.55)	4.95 (1.29)	5.50 (1.08)	4.96 (1.35)
Toothpaste with prevention claims	5.17 (1.46)	5.05 (1.14)	4.88 (1.18)	5.39 (1.31)

Note. Standard deviations are given in parentheses.



**Figure 3.** Participants' predictions of known-from-sight targets' preferences for toothpastes differing in terms of promotion and prevention claims as a function of their regulatory focus in Study 4.

Note. Error bars represent standard errors.

## Discussion

Promotion-focused participants predicting toothpaste preference of loose acquaintances thought they would prefer the promotion- to the prevention-claims toothpaste and this reversed for prevention-focused participants. In other words, participants relied on their activated regulatory focus in predicting preferences of loose acquaintances. Contrary, regulatory focus did not impact preference predictions of friends. Thus, this study nicely shows that idiosyncratic target information comes as a second boundary condition. Moreover, the current findings generalize the previous results to the domain of product preferences, with possible important implications for consumer decisions when making purchases for others (e.g., gifts; Chowdhury, Ratneshwar, & Desai, 2009).

To be sure, the three-way interaction was only marginal and, as in Study 2, results were stronger for promotion compared with prevention focus. Interestingly, Wang and Lee (2006; Study 1) also reported no significant differences for prevention focus and toothpaste evaluations in the critical condition (i.e., a low rather than a high involvement

condition; for the latter, no differences were expected). The current results thus constitute a conceptual replication of Wang and Lee. Leaving this consideration aside, and as outlined before, we expected weaker prevention focus effects in light of previous research (Fayant et al., 2011; Förster et al., 2008; Polman, 2012).

## General Discussion

The current research tested the hypothesis that people rely on their regulatory focus when making predictions about others. Investigating this hypothesis across different domains (strategic inclinations, choices, attention to romantic alternatives, product preferences) and both measuring (Study 1) and manipulating regulatory focus (Studies 2, 3, and 4), we found strong support for our claim. Participants' regulatory focus predicted their estimations of others' strategic promotion versus prevention inclinations and impacted on their predictions of a target's choice when faced with enriched (fitting promotion) versus impoverished options (fitting prevention; Studies 1 and 2). Two further studies incorporated individual differences of the prediction target and provided indirect process evidence, corroborating the social projection account, by showing that stereotypic and idiosyncratic target knowledge constitutes boundary conditions. First, participants did not rely on their regulatory focus when doing so would have implied running counter to stereotypic beliefs. Specifically, only men, but not women, expected a same-sex target in an ambiguous relationship to more likely seek romantic alternatives when they themselves were in a promotion as opposed to a prevention focus (Study 3). Second, participants did not rely on their regulatory focus in their preference predictions concerning promotion- or prevention-claims products when they possessed idiosyncratic social target information: Regulatory focus only influenced participants' predictions of an acquaintance but not of their friend (Study 4).

Beyond demonstrating boundary conditions, these last studies also suggest that effects cannot simply be explained by mere concept activation. An alternative account assuming that the activated foci were merely more available and consequently used in the judgments (Higgins, Rholes, & Jones, 1977) cannot account for the absence of effects in the presence of stereotypic or idiosyncratic target knowledge. Across studies, alternative explanations in terms of mood, task-enjoyment, judgment-certainty, and perceived task-difficulty

were also explored. These variables did not account for the above results. Overall, the current studies thus provide first, convergent evidence for people's reliance on their regulatory focus in their predictions of others. As such, these findings advance our understanding of the interface between motivational orientations, social projection, and person perception.

### Limitations

We acknowledge that although the predicted interactions always proved significant, simple effects emerged for participants primed with promotion but not prevention focus. Interestingly, these consistent findings bear a striking resemblance to self-judgments results. As a matter of fact, promotion-focused participants rated enriched options as more attractive than impoverished options, whereas prevention-focused participants did not prefer one over the other (Zhang & Mittal, 2007; Study 3). Also, whereas promotion-focused participants preferred a promotion-claims compared with a prevention-claims toothpaste, prevention-focused participants were indifferent (Wang & Lee, 2006; Study 1). There are three further possible explanations why the above effects were stronger for promotion focus. These accounts need not be mutually exclusive and might inform future research. Specifically, this advantage of promotion over prevention informs us about why exploring motivational orientations increases our understanding of social projection.

First, we expected that obtaining a canonical interaction with similarly strong effects for both foci might be difficult. People making choices for themselves are less risky, focus on negative aspects, and, in turn, are prevention focused, whereas people making choices for others are more risky, focus on positive aspects, and, in turn, are promotion-focused (Polman, 2012). Making judgments about others thus constitutes a situation of regulatory fit for promotion-focused participants (Higgins, 2000, 2005). Conversely, prevention-focused participants may have experienced some degree of incongruence between their focus and the task at hand. Such incongruence entails behavioral and cognitive costs and, noteworthy in the current context, an inhibition of highly accessible responses (Lisjak et al., 2012). Overall, this may have undermined participants' reliance on prevention focus. Second, people experiencing regulatory fit rely more strongly on heuristics in their judgment (Aaker & Lee, 2006; Briley & Aaker, 2006; Cesario et al., 2008; Wang & Lee, 2006). At the same time, social projection is a heuristic process (e.g., Ames, 2004a, 2004b; Krueger, 2000, 2007; Schul & Vinokur, 2000). Therefore, to the extent that participants primed with prevention experienced incongruence, this should have reduced their reliance on heuristic processing—and thus on social projection. Finally, participants assimilate to social targets under promotion but contrast from them under prevention (Fayant et al., 2011; Förster et al., 2008).

Together with the current work, these three lines of research suggest that a promising avenue for future research would be to investigate whether people more likely engage

in social projection under promotion compared with prevention focus. To our knowledge, this intriguing conjecture has not been tested (but see Righetti et al., 2011, for a study on promotion—but not prevention—orientation predicting perceived self-other similarity).

We also need to acknowledge the limitation of the indirect process evidence. While the two boundary conditions investigated in Studies 3 and 4 (i.e., stereotypic and idiosyncratic target knowledge) provide indirect evidence for the underlying projection process, more convincing evidence would be obtained by manipulating the mediator directly, following the approach recommended by Spencer, Zanna, and Fong (2005), or by manipulating conceptually related moderators such as self versus other focus (Igou, 2008).<sup>4</sup> Future work should test whether the effect can be replicated using these complementary approaches.

Also, the boundary conditions addressed in the current work are by no means exhaustive. For example, people rely on the self more strongly in judgments of ingroup compared with outgroup members (Clement & Krueger, 2002; Robbins & Krueger, 2005). Likewise, they show increased projection to the extent that they perceive self-other similarity (Ames, 2004a, 2004b; Ames, Weber, & Zou, 2011). Thus, target group-membership and initial similarity information at the inter-individual level can be assumed to constitute further boundary conditions. Furthermore, internal or external factors increasing peoples' sense of distinctiveness should result in them being less inclined to rely on their regulatory focus in judging others (e.g., a need for uniqueness: Ames & Iyengar, 2005; a competitive context: Toma, Yzerbyt, & Corneille, 2010).

### Implications and Future Directions

The current work extends the literature on regulatory fit effect at the individual level to predictions of social targets (for groups, see Sassenberg et al., 2007; cf. Sassenberg & Woltin, 2008, 2009). More importantly, earlier work applying motivational constructs to social projection focused on reasons underlying projection, such as defensive (Govorun et al., 2006) and functional processes (Maner et al., 2005), or on goals themselves (Kawada et al., 2004; Oettingen et al., 2014). The unique and conceptual contribution of the current findings is that they show projection effects produced by general motivational orientations. This is an important contribution, as it shows the broad applicability of projection effects beyond specific goals ("what" is being projected; for example, a learning vs. a performance goal; Oettingen et al., 2014) and specific motivations ("why" one is projecting; for example, to protect one's self-esteem; Govorun et al., 2006). Investigating regulatory focus adds to the existing work by considering egocentric tendencies in the projection of the "how" in goal pursuit (e.g., eager vs. vigilant strategies; stronger weighing of positive vs. negative information), with implications across a variety of situations and circumstances.

This later point may entail important social consequences. Investment decisions differ in their attractiveness according to regulatory focus (Florack & Hartmann, 2007). As portfolios differ in risk variance and return, the above results suggest that depending on their regulatory focus people may perceive investment consultants as differentially capable and competent as a function of whether they suggest enriched or impoverished portfolios (see Study 2), with consequences for interpersonal trust. The current results might also hold important implications for research on empathy. Positive events yield cheerfulness-related responses (e.g., happiness) for promotion and quiescence-related responses (e.g., calmness) for prevention focus. Conversely, negative events yield dejection-related responses (e.g., sadness) for promotion and agitation-related responses (e.g., tenseness) for prevention focus (Crowe & Higgins, 1997; Higgins et al., 1997). The current findings suggest that people would assume others to experience promotion-related versus prevention-related emotions in response to events as they themselves would. Consequently, they should perceive others' emotional reactions as more adequate under conditions of fit (e.g., self = promotion, other = dejected), leading to increased empathy, respectively, as less adequate under misfit (e.g., self = promotion, other = agitated), leading to increased distress (cf. Houston, 1990). As empathy had been linked to the provision of help (Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983), reduced provision of help (Oettingen et al., 2014) and potentially conflict may result from inadequate reliance on one's regulatory focus in responding to others' emotional needs.

Finally, extending our findings to other motivational orientation set forth in the literature, such as locomotion versus assessment orientation (Kruglanski et al., 2000) and action versus state orientation (Kuhl, 1985), remains an important issue for future research.

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### Notes

1. We also assessed predictions concerning promotion and prevention (a) emotions following positive (e.g., happy vs. relieved) and negative situations (e.g., sad vs. tense) and (b) interpretations (e.g., "doing things the right way" means "doing them

well" vs. "not doing them badly"). However, data were skewed and internal consistencies unacceptable (emotions:  $\alpha_{\text{promotion}} = .45$ ,  $\alpha_{\text{prevention}} = .51$ ; interpretations:  $\alpha_{\text{promotion}} = .14$ ;  $\alpha_{\text{prevention}} = .45$ ), presumably because items pertained to different situations. Emotions and interpretations were thus not considered.

2. Regressing participants' promotion dominance score separately on the foci revealed positive relation to promotion focus,  $B = 0.49$ ,  $SE = 0.28$ ,  $t(56) = 1.74$ ,  $p = .087$ , and a negative relation to prevention focus,  $B = -0.38$ ,  $SE = 0.20$ ,  $t(56) = -1.86$ ,  $p = .068$ .
3. A single-item measure is justified when the construct to be measured is singular in raters' minds (Bergkvist & Rossiter, 2007; cf. Teixeira, Demoulin, & Yzerbyt, 2011). To illustrate, two items—included for exploratory reasons—measured to what extent the target would consider each option "attractive" and "appealing" (similar 5-point scales). For the impoverished option (attribute values clustered around the average), choice correlated with attractiveness,  $r(49) = .46$ , and appeal,  $r(48) = .48$ ; appeal and attractiveness also correlated,  $r(48) = .65$  (all  $ps < .01$ ). Contrary, for the enriched option (attribute values including attractive/appealing and unattractive/unappealing aspects), choice did not correlated with attractiveness,  $r(49) = -.03$ , or appeal,  $r(48) = .17$ ; nor were appeal and attractiveness correlated,  $r(48) = .22$ , ( $.14 < ps < .86$ ). (One participant did not fill in all items.)
4. We thank an anonymous reviewer for pointing this out.

### Supplemental Material

The online supplemental material is available at <http://pspb.sagepub.com/supplemental>.

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