

Is regulatory focus related to minimal and maximal standards? Depends on how you ask!

Running head: REGULATORY FOCUS AND MINIMAL/MAXIMAL STANDARDS

Fanny Lalot¹²

Alain Quiamzade¹²

&

Juan Manuel Falomir-Pichastor¹

¹ University of Geneva, Geneva, Switzerland

² Distance Learning University of Switzerland, Brig, Switzerland

Author Note

Correspondence concerning this article should be addressed to Fanny Lalot (email: fanny.lalot@unige.ch; tel: +41223798725), University of Geneva, 40 boulevard du Pont d'Arve, 1205 Geneva, Switzerland.

The authors declare that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Words count: 8483 words (including abstract, main text, and endnotes)

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1002/ejsp.2314

Abstract

Regulatory focus theory suggests that hopes and aspirations (promotion focus) function like maximal goals, whereas duties and responsibilities (prevention focus) function like minimal goals (Brendl & Higgins, 1996). However, past research has not always reliably found such a link between regulatory focus and maximal/minimal goals or standards. In the present research, we hypothesised that this inconsistency can be explained, at least in part, by conceptual differences resulting in the use of different, specific wording. In four studies, we compared wording in terms of the relative magnitude of the goals to wording in terms of their absolute versus gradual perception. Results showed that regulatory focus (manipulated or measured) consistently relates to maximal versus minimal standards framed as goals of different magnitudes, but not to the goals framed according to an absolute/gradual perception. Implication of the results for regulatory focus research is discussed.

Keywords: Regulatory focus; minimal standard; maximal standard; motivation; goals

Is regulatory focus related to minimal and maximal standards? Depends on how you ask!

Regulatory focus theory suggests that hopes, wishes, and aspirations represented in ideals (promotion focus) function like maximal goals that a person wishes to attain, whereas duties, obligations, and responsibilities represented in “ought” (prevention focus) function like minimal goals (Brendl & Higgins, 1996; Higgins, 1997). A minimal goal (MIN) would constitute the threshold between a neutral (“non-negative”) and a negative zone, a minimal standard of conduct that should be attained, whereas a maximal goal (MAX) is an upper reference point. However, past research has failed to consistently show the predicted link between regulatory focus and MIN or MAX goals, or standards (Fritsche, Kessler, Mummendey, & Neumann, 2009; Kessler et al., 2010), which suggests that regulatory focus does not determine such goals. The aim of the present paper is to reconcile seemingly contradictory results by examining whether the way the standards are conceptualised and measured moderates the link between regulatory focus and MAX and MIN standards. As the different conceptualisations usually refer to, respectively, “goals” and “standards”, we will try to respect this nomenclature according to each approach through the paper. It is worth noting, however, that both terms are used interchangeably in the self-regulation literature (see Biernat & Eidelman, 2007).

The Regulatory Focus Theory

Regulatory focus theory (Higgins, 1997) describes two independent motivational systems: A *prevention* focus is related to the individual’s need for security. It implies attention to the absence/presence of negative outcomes and an effort towards the fulfilment of “ought” (obligations and duties). Strategies associated with a *prevention* focus are typically avoidance-based (Crowe & Higgins, 1997; Scholer, Stroessner, & Higgins, 2008). A *promotion* focus is related to nurturance needs. It implies attention to the absence/presence of positive outcomes and effort towards the accomplishment of ideals (hopes and aspirations),

and a preference for approach-based strategies. Individuals have an inclination for one of the two foci (a chronic regulatory focus; e.g. Higgins et al., 2001), but the focus can also be influenced by contextual factors (e.g. Cesario, Grant, & Higgins, 2004; Chernev, 2004).

Regulatory Focus and Standards – The Original Conception

Brendl and Higgins (1996) defined MIN and MAX goals as action goals one sets for oneself (see also Rotter, 1945, for a review of the "level of aspiration" research).

Accordingly, a MIN goal is "the lowest goal whose end state will still produce satisfaction" (p. 104), separating a negatively from a non-negatively valenced region. A MAX goal is an ideal one "hopes to approximate but does not necessarily expect to reach" (ibid.), separating a non-positive from a positive region. For example, a student can set as a MIN goal for himself to pass all his exams with at least the minimum grade, and as a MAX goal to graduate top of his class. Strategies associated with each goal differ. People aiming at their MIN goal use avoidance strategies to avoid *not* fulfilling this goal, whereas people aiming at their MAX goal use approach strategies to tend to get closer and closer to this goal. Moreover, MIN and MAX goals can coexist, as one person can concurrently aim at not falling under a mandatory standard, while also seek to move closer to an ideal standard. Even if both goals exist and are activated at the same time, their relative salience can vary, according to situational factors or individual differences, thus determining the subjective evaluation of intermediate outcomes (i.e. when the MIN but not the MAX goal is achieved). Such a situation is subjectively positive when the MIN goal is the reference point, but non-positive when the MAX goal is.

Brendl and Higgins (1996) suggested that the individual's regulatory focus is a factor influencing the salience of the goals. Accordingly, a prevention focus would increase the salience of a MIN goal, whereas a promotion focus would increase the salience of a MAX goal. This association makes sense given the shared characteristics between goals and foci in terms of privileged strategies (approach versus avoidance) and outcomes (positive versus

negative) that are made more salient. A study by Higgins, Roney, Crowe, and Hymes (1994) supports this assumption by showing that when asked to select “strategies for friendship,” prevention-oriented participants selected more strategies for avoiding being a poor friend (i.e. a MIN goal) than promotion-oriented participants, who in turn selected more strategies for approaching being a good friend (i.e. a MAX goal). The authors concluded that regulatory focus is related to the MIN-MAX goals.

Regulatory Focus and Standards – An Alternative Conception

Other research (Barth, Jugert, Wutzler, & Fritsche, 2015; Berthold, Mummendey, Kessler, Luecke, & Schubert, 2012; Fritsche et al., 2009; Kessler et al., 2010) investigated the impact of MIN/MAX standards on several intra- or intergroup outcomes such as reaction to norm violations, evaluation of deviants, collective action, and outgroup attitudes. This research explicitly draws from Brendl and Higgins’s conception but has also moved away from it, notably by stating that “minimal and maximal goals might refer to either the attainment of positive outcomes or the prevention of negative outcomes and should be independent of absolute magnitude of a standard” (Fritsche et al., 2009, p. 3). In fact, it highlights variations in the way both standards are evaluated as their main difference. Specifically, a MIN standard is evaluated in an absolute, dichotomous fashion: the standard is either reached or not reached, respected or not respected. It is “a cut-off point leading to an either-or evaluation” (Kessler et al., 2010; p. 1215). By contrast, the MAX standard is evaluated gradually, depending on the distance to the standard. Therefore, if one perceives a norm as a MIN standard, one will want to punish a deviant violating this norm more severely than if the norm was perceived as a MAX standard (Fritsche et al., 2009; Kessler et al., 2010). Of particular relevance to our point here is that those studies did not find the adherence to the MIN/MAX standards to be consistently related to regulatory focus. Specifically, Fritsche et al. (2009) found a moderate correlation between the MIN/MAX standard and the

chronic prevention (promotion) focus when the latter was measured with the General Regulatory Focus Measure (Lockwood, Jordan, & Kunda, 2002), but no relation with the Regulatory Focus Questionnaire (Higgins et al., 2001), nor the reaction-time based Self Guide Strength Measure (Higgins, Shah, & Friedman, 1997). They concluded that “MIN/MAX and regulatory focus are not only conceptually but also empirically independent” (Fritsche et al., 2009, p. 19). Moreover, Kessler et al. (2010; Study 4) manipulated both the regulatory focus and the standards orientation and found that the outcomes of the MIN/MAX orientation were independent from the focus manipulation.

Regulatory Focus and Standards – Conceptual and Methodological Differences

Past research examining the link between regulatory focus and MIN/MAX standards revealed inconsistent findings. Several factors could potentially explain this inconsistency, such as differences in paradigm, sample, cultural context, or methodology. In the present research, we propose that the inconsistency can be explained, at least in part, by differences in the conceptualisation of the standards. In other words, different conceptions of MAX and MIN standards yield different results. To conceptualise this Brendl and Higgins (1996) relied on the notions of obligation/ideal goal, positive/negative zones, and the lower/higher magnitude of the goal. However, research showing inconsistent findings (Fritsche et al., 2009; Kessler et al., 2010) measured adherence to the standards by emphasising their absolute/gradual distinction (for instance, MIN standard: “Rules are there not to be broken”, MAX standard: “The purpose of rules is to provide direction”; Fritsche et al., 2009).

Overview of the Present Studies

In the present paper, our aim is to compare the wording issued from different research to investigate whether the link between MIN/MAX standards and the regulatory focus depends on the way standards are conceptualised and measured. With respect to previous literature, we expect the regulatory focus to be related to the MIN/MAX standards when

those are assessed in agreement with Brendl and Higgins's original conception (obligation versus ideal), but not when assessed according to the alternative conception (absolute versus gradual evaluation; Fritsche et al., 2009; Kessler et al., 2010). In Studies 1, 2a and 2b, we measured standards with items directly drawn from the literature and compared their relation with regulatory focus. In Study 3, we additionally controlled for a potential confounding factor related to the self- versus others-focus of the items. To ensure both higher validity and investigation of causality, two studies adopted a correlational approach (Studies 1 and 3) while two others experimentally manipulated regulatory focus (Studies 2a and 2b).

Given that the studies were conducted online, selective dropout can be an issue. We calculated the attrition rate for each study (see Zhou & Fishbach, 2016). Attrition rates were of 19% (Study 1), 24% (Study 2a), 44% (Study 2b), and 41% (Study 3). These results fit within the average range of dropout rate for online social psychology studies (Zhou & Fishbach, 2016). In Studies 2a and 2b, which involved the more demanding tasks, dropout was comparable across experimental conditions (16% and 11% for prevention and promotion in Study 2a, respectively, $b = .22$, $ES = .31$, $p = .47$; 40%, 48% and 45% for prevention, control, and promotion condition in Study 2b, $b = -.09$, $ES = .13$, $p = .51$).

As our hypothesis involves null hypothesis testing, we include both frequentist and Bayesian analyses. The Bayes factor (BF) compares the probability of the data under one model to that under another, and provides evidence in favour of either the null hypothesis (BF_0) or the alternative hypothesis (BF_1 ; Dienes, 2014; van de Schoot & Depaoli, 2014). BFs smaller than 1, between 1 and 3, between 3 and 10, between 10 and 30, and bigger than 30 designate "no evidence", "anecdotal", "moderate", "strong" and "very strong evidence," respectively, for either the null or the alternative hypothesis (Jeffreys, 1961; Wagenmakers, Wetzels, Borsboom, & van der Maas, 2011). BF_1 is the inverse of BF_0 (i.e., $BF_1 = 1 / BF_0$). An asset of BF is that it can indicate whether a null effect is either due to a lack of power or,

indeed, due to the absence of an effect. Through the paper, we indicate each BF next to its equivalent frequentist analysis.

Study 1

Study 1 adopted a correlational design and aimed at directly comparing both conceptualisations of the standards. We measured participants' chronic regulatory focus, and their adhesion to MIN and MAX standards as worded in the original and the alternative conceptions. Ecology was chosen as a framework and cover story for the study. Thus, standards were measured relative to pro-environmental goals.

Method

Participants and procedures. Students from a Swiss university were contacted by email and accepted to participate in an online study about "Ecology and Personality." Power analyses (conducted with G*Power3; see Faul, Erdfelder, Lang, & Buchner, 2007) suggested a sample size of a minimum of 120 participants to ensure a power = .80 for a small-to-medium effect ($\rho = .25$) in a two-tail correlational design. The sample included 142 participants (59 males and 83 females) aged 18 to 55 ($M = 25.46$, $SD = 6.55$) from across the University faculties. Participants first completed a regulatory focus scale, then answered questions regarding the standards and finally indicated demographics. All participants (in this study as the following ones) gave written consent to participate in the research.

Regulatory focus. Participants' chronic regulatory focus was assessed with the 10-item Composite Regulatory Focus Scale (5-point scale; Haws, Dholakia, & Bearden, 2010). Promotion (e.g. "When I see an opportunity for something I like, I get excited right away", $M = 4.07$, $SD = .66$, $\alpha = .63$) and prevention (e.g. "I worry about making mistakes", $M = 3.42$, $SD = .92$, $\alpha = .69$) sub-scores were computed by aggregating the corresponding items. The two sub-scales were independent, $r(140) = .07$, $p = .39$, $BF_0 = 6.57$ (BF indicates moderate evidence in favour of the null hypothesis).

Minimal and maximal standards. First, four questions assessed the standards as defined by Brendl and Higgins (1996). Specifically, two items assessed the MAX standard: “When you are making efforts towards ecology, to what extent would you say that (1) you have in mind a very high goal, the ideal you hope you approach someday; (2) you try to always do better, step by step”; and two items assessed the MIN standard: “(3) you have in mind a more moderate goal that you try to achieve at any cost; (4) you are concerned that you don’t fall below a certain level, a form of environmental ‘legal minimum’.” Participants answered on 5-point scales (1 = not at all like me, 5 = just like me). Items were averaged into single scores of MAX and MIN standards (descriptive statistics are reported in Table 1). These scores were positively correlated, $r(140) = .49, p < .001, BF_1 > 1000$, which fits the notion of an increasing magnitude between the two goals: for approaching the MAX goal, one must first reach the MIN goal.

Second, six questions assessed the standards following the alternative conception. The wording was directly inspired by Kessler et al. (2010). Three environment-related topics were used (energy preservation, waste recycling and non-pollution). For each topic, participants rated items assessing their adhesion to (1) a dichotomous and absolute conceptualisation of the topic (MIN standard, e.g. “The principle of [energy preservation] must be respected as a matter of principle and in every case”) and (2) a gradual and relative conceptualisation (MAX standard, e.g. “The principle of [energy preservation] should generally be respected, but exceptions can be allowed if the implications are not too important”). Again, participants answered utilising 5-point scales (1 = strongly disagree, 5 = strongly agree). We computed single scores of MAX and MIN standard by aggregating the corresponding items (three items for each standard; see Table 1). Scores correlated negatively, $r(140) = -.35, p < .001, BF_1 = 860$, which suggests that people adhere either to a gradual or to an absolute evaluation of the principle.

As it appears that the items of the two conceptualisations have never been compared to each other in the literature, we computed an exploratory factorial analysis on all items (Principal axes factoring, Oblimin rotation; following recommendations of Fabrigar, Wegener, MacCallum, & Strahan, 1999). The analysis revealed four factors accounting for 73% of variance. Items of the original conception loaded on factors 1 and 2 (MAX on factor 1 and MIN on factor 2). One of the MIN items also loaded on a much lesser extent (.22) on factor 1.¹ Items of the alternative conception loaded on factors 3 and 4 (MIN on factor 3 and MAX on factor 4; loadings are reported in the Appendix A). Hence, what these two conceptualisations call minimal (maximal) standard seem to represent fundamentally different constructs. In this study as in the following, we were interested in the specific links between each (independently conceived) focus and the corresponding standard, and thus ran analyses on each standard measures separately.

Results

Correlations between promotion and prevention scores and adherence to MIN and MAX standards were computed using JASP[®] (JASP Team, 2016; see Table 2). In accordance with the alternative conception of the standards (Fritsche et al., 2009; Kessler et al., 2010), no correlation was found between participants' chronic prevention or promotion scores and MIN/MAX standards when those were conceptualised strictly in terms of absolute vs. gradual perception. BF_0 ranged from 4.5 to 9.5, providing moderate evidence in favour of the null hypothesis and suggesting that the concepts are indeed independent from one another.

However, when framed following Brendl and Higgins's original conceptualisation, the standards were significantly correlated to the regulatory focus. Specifically, the stronger the participants' prevention focus, the more they identified with the MIN standard. Similarly, the stronger the participants' promotion focus, the more they identified with the MAX standard. BF_1 (= 9.2 and 4.2, respectively) provided substantial to strong evidence for these

links. Moreover, prevention focus was unrelated to adhesion to the MAX standard, and promotion focus was unrelated to adhesion to the MIN standard, as shown by BF_0 of anecdotal to moderate magnitude ($BF_s = 4.6$ and 2.2 , respectively).

Additionally, we regressed the original conception's MIN and MAX scores on both promotion and prevention scores.ⁱⁱ MIN score (overall model: $F(2,139) = 6.40$, $p = .002$, $R^2_{adj} = .07$) was significantly predicted by prevention score, $b = .27$ [.12, .42], $t(139) = 3.51$, $p = .001$, $\eta^2_p = .08$, $BF_1 = 41$, and marginally by the promotion score, $b = .14$ [-.01, .29], $t(139) = 1.79$, $p = .075$, $\eta^2_p = .05$, $BF_1 = 0.7$. MAX score (overall model: $F(2,139) = 4.67$, $p = .011$, $R^2_{adj} = .05$), on the other hand, was significantly predicted by the promotion score, $b = .21$, 95% CI [.06, .36], $t(139) = 2.79$, $p = .006$, $\eta^2_p = .08$, $BF_1 = 5.7$, but not by the prevention score, $b = .10$ [-.05, .25], $t(139) = 1.28$, $p = .20$, $\eta^2_p = .02$, $BF_1 = 0.51$.

Discussion

Results from Study 1 showed that when the wording emphasised the gradual vs. absolute perception, standards were independent from the focus. However, when the wording highlighted the distinction between a higher and ideal vs. a lower but mandatory goal, standards and focus were correlated. Moreover, when framed relatively to the original conception (Brendl & Higgins, 1996), MIN and MAX standards correlated positively. This is consistent with the idea of (a) a coexistence and (b) a hierarchical magnitude of the goals implied by the theory, and suggests that to aim at the MAX goal, one must first reach the MIN goal. Despite the positive correlation, each standard was specifically correlated with the expected specific focus. However, when measured relatively to the alternative conception (Fritsche et al., 2009; Kessler et al., 2010), MIN and MAX standards were negatively correlated, indicating that participants adhered either to an absolute or to a gradual perception of the goal.

Study 2a

In Studies 2a and 2b we experimentally manipulated regulatory focus. The two studies were similar to each other except for the way regulatory focus was induced. Specifically, Study 2a adopted the “current ideals and ought” manipulation (Freitas & Higgins, 2002) while Study 2b used a scrambled sentences task (Falomir-Pichastor & Gabarrot, 2011). Consistent with the findings of Study 1 and previous literature, we expected regulatory focus to predict the adherence to MIN and MAX standards when those were measured following Brendl and Higgins’s original conception, but not when following the alternative conception.

Method

Participants and procedures. Students from a Swiss university were contacted by email and accepted to participate in an online study about “Visualisation and personality.” Power analysis based on the effect size observed in Study 1 ($f = .25$; power = .80, repeated-measure ANOVA with one between- and one within-subject measure) suggested N around 84. We recruited 81 participants. Five were detected as deviant (Studentized deleted residual $> |2.5|$; see Judd, McClelland, & Ryan, 2009) and were excluded from following analyses. As a consequence, the final sample size ($N = 76$) was slightly under the suggested sample size. It included 18 males and 58 females aged 18 to 39 ($M = 23.55$, $SD = 5.31$) from across the University faculties. Participants were randomly assigned to one of the regulatory focus conditions, i.e. prevention versus promotion. After the experimental induction, they answered questions about the standards and indicated their demographics.

Regulatory focus. Regulatory focus was induced following the “current ideals or ought procedure” described by Freitas and Higgins (2002; see also Guo & Spina, 2015). Specifically, depending on the experimental promotion (vs. prevention) condition, participants read: “We will now ask you to perform a visualisation task. Please think about something you ideally would like to do (you think you ought to do). In other words, please think about the hopes or aspirations (duties or obligations) that you currently have. Please

spend at least 2 to 3 minutes to think about these hopes or aspirations (duties or obligations) as this is very important for the study.” They then reported on one or two of such hopes (duties). The questionnaire was configured so that it was not possible to continue to the next page before at least 45 seconds had elapsed. Participants spent an average of 167 seconds ($SD = 159$) on the task.

Minimal and maximal standards. The same items as in Study 1 were used to assess MIN and MAX standards. The topic of Ecology was again used as a framework for the study. Participants answered all items on 7-point scales. Consistent with Study 1, correlation analyses revealed a negative link between the MIN and MAX standards measures emphasising their absolute/gradual perception (i.e., the alternative conception), but a positive link between the measures emphasising the ideal/mandatory and upper/lower distinction (i.e., Brendl and Higgins’s original conception; see descriptive data in Table 1).

Results

Original conception’s standards. A repeated-measure ANOVA was conducted with type of standard (minimal versus maximal) as the within-subject factor, and regulatory focus (-1 = prevention, +1 = promotion) as between-subject predictor. The analysis revealed a significant within-subject standard \times focus interaction, $F(1,74) = 4.10, p = .046, \eta^2_p = .05$ (see Figure 1). Decompositions showed that adherence to the MIN standard increased following the induction of a prevention focus ($M = 4.92, SD = 1.33$) as compared to promotion ($M = 4.23, SD = 1.48$), $b = -.35 [-.67, -.03], t(74) = -2.15, p = .034$. However, adherence to the MAX standard was independent from the focus induction, $b = -.05 [-.38, .28], t(74) = -.30, p = .76$ (promotion: $M = 4.57, SD = 1.30$; prevention: $M = 4.67, SD = 1.54$).

A Bayesian independent samples t -test was also conducted on the MIN/MAX standards’ score, with regulatory focus (-1 = prevention, +1 = promotion) as the independent variable, using JASP. For the original conception score, the analysis was one-sided according

to our hypothesis (promotion > prevention). Lacking detailed literature to determine a specific prior, we used the default prior set by the software, i.e. Cauchy prior width = .707 (Rouder & Morey, 2012). The analysis yielded $BF_1 = 2.65$, which represents anecdotal evidence in favour of H1. Specifically, the effect of focus on the MIN score was represented by $BF_1 = 3.34$, i.e. moderate evidence for H1, while its effect on the MAX score was characterised by $BF_0 = 3.32$, i.e. moderate evidence for the null hypothesis.

Alternative conception's standards. A similar repeated-measure ANOVA was conducted on the alternative conception's items. The analysis revealed a within-subject main effect of the type of standard, $F(1,74) = 18.64, p < .001, \eta^2_p = .20$, so that adherence to the MIN standard was higher in general ($M = 5.23, SD = 1.34$) than adherence to the MAX standard ($M = 3.97, SD = 1.70$). However, the focus by standards interaction was not significant, $F(1,74) = .33, p = .57, \eta^2_p = .004$: focus had no effect of the adherence to the standards.

To help reach a conclusion about non-significant results, a Bayesian independent samples *t*-test was also conducted on the standards' score. For the alternative conception's score, the analysis was two-sided. Again, we used the default prior, Cauchy prior width = .707. The analysis yielded $BF_0 = 3.64$, which represents moderate evidence for the null hypothesis. More specifically, BF_0 for the effect of regulatory focus on MIN and MAX scores were = 4.16 and 2.76, respectively.

Study 2b

The current ideals or ought procedure (Freitas & Higgins, 2002) used in Study 2a can be criticised for focusing primarily on the type of goal (ideal versus obligation) and not on other core components of regulatory focus, such as the salience of gains versus losses. To resolve this potential limitation, Study 2b used another regulatory focus induction, namely a scrambled sentence task (see Falomir-Pichastor & Gabarrot, 2011, Study 2). Moreover,

replicating our results with a different manipulation of the same underlying construct would strengthen our conclusions. Finally, to better understand inter-focus differences, we included a control condition with no focus manipulation.

Method

Participants and procedure. Participants were students from a Swiss university who accepted to complete an online questionnaire. Power analyses based on the average effect size of Studies 1 and 2a ($f = .24$; repeated-measure ANOVA with three groups and two measurements, power = .80) indicated a minimal sample size of 123. A total of 197 participants initially completed the study; eleven were detected as deviant values (Studentized deleted residual $> |2.5|$) and were excluded from following analyses. The retained sample ($N = 186$) included 36 males and 147 females (3 undisclosed) of 17-53 years of age ($M = 22.7$, $SD = 4.89$) from different faculties. Participants were randomly assigned to one experimental condition (promotion versus prevention versus control condition).

Regulatory focus induction. The induction was drawn from Falomir-Pichastor and Gabarrot (2011, Study 2) and consisted of a scrambled sentences task that was presented as a separate test of participants' grammatical and verbal abilities. Literature found it to successfully activate specific focus-related emotions. Participants were asked to compose 15 sentences from series of disordered words with all words but one, the "intruder" (see Bargh & Chartrand, 2000). In the promotion condition, 13 of the sentences were related to components of gains and achievement (e.g. to win, to aspire, to triumph, to pursue, to succeed, to accomplish, to obtain one's desires). In the prevention condition, the 13 sentences were related to losses and failures (e.g. to prevent, to harm, to avoid trouble, to be defeated, to make mistakes, failure, rejection). The remaining two sentences were unrelated to the foci. Participants in the control condition did not do any sentences task.

Minimal and maximal standards. Standards were measured with the same items as in previous studies, with the exception that items of the alternative conception were reduced to four items instead of six. Specifically, we focused on the themes of waste recycling and energy preservation, and both MIN and MAX standards were assessed relative to these two themes. As in previous studies, MIN and MAX standards of the original (alternative) conception correlated positively (negatively; see descriptive data in Table 1).

Results

Repeated-measure ANOVAs were conducted with type of standard (minimal versus maximal) as the within-subject factor, and regulatory focus coded according to the hypothesis (-1 = prevention, 0 = control condition, +1 = promotion) as well as the orthogonal contrast (-1 = prevention, 2 = control condition, -1 = promotion) as between-subject predictor, on both conceptions' scores. For the original conception standards, the standard \times focus interaction was significant, $F(1,183) = 5.75, p = .017, \eta^2_p = .03, BF_1 = 3.20$. The standard \times orthogonal contrast was not significant, $F(1,183) = 0.25, p = .62, \eta^2_p < .001, BF_0 = 4.01$. Consistent with Study 2a, adherence to the MIN standard was sensitive to the focus manipulation, $F(2,183) = 3.64, p = .028, \eta^2_p = .04, BF_1 = 5.73$: adherence to the MIN standard was significantly higher in prevention ($M = 5.12, SD = 1.16$) than in promotion ($M = 4.48, SD = 1.53$); Bonferroni post-hoc comparison $p = .026$. The control condition ($M = 4.69, SD = 1.34$) fell in between but was not significantly different from the other conditions (comparison with prevention: $p = .19$; with promotion: $p = .64$). Adherence to the MAX standard, on the other hand, was not a function of the focus, $F(2,183) = 0.03, p = .97, \eta^2_p < .001, BF_0 = 4.02$ (see Figure 1).

For the alternative conception, there was a within-subject main effect of the standard showing that adherence to MIN standard was higher in general than adherence to the MAX, $F(1,183) = 39.9, p < .001, \eta^2_p = .18, BF_1 > 1000$. However, and as expected, the standard \times

focus interaction was not significant, $F(1,183) = 0.41, p = .52, \eta^2_p = .002, BF_0 = 3.44$, nor was the standard \times orthogonal contrast, $F(1,183) < .001, p = .98, \eta^2_p < .001, BF_0 = 4.17$.

Discussion

Studies 2a and 2b investigated whether a contextually induced regulatory focus can predict participants' inclination towards MIN/MAX standards as measured according to the two different conceptions. Results of both studies showed that a prevention focus oriented participants towards a MIN standard, but only when the standard was framed according to Brendl and Higgins (1996). Promotion focus, however, did not impact adherence to the MAX standards and was comparable to the control condition without focus induction. Moreover, when the standards were framed according to the alternative conception (Fritsche et al., 2009; Kessler et al., 2010), they were independent from the focus. The use of Bayesian statistics strengthened these findings by ensuring that null effects were indeed evidence for the null hypothesis and not an indicator of lack of power.

Study 3

Results of the three studies support previous findings reported in the literature that regulatory focus can be or not be associated to standards depending on the way the latter are conceptualised. Whereas standards framed in terms of the relative magnitude of the goals were related to regulatory focus, standards framed in terms of their absolute versus gradual perception were not. However, another dimension systematically covariates with the two investigated conceptualisations, that is, the person of focus. In accordance with the initial theorisation of Brendl and Higgins (1996), items of the original conception assessed standards related to the self, but those of the alternative conception assessed them in relation to others, the people in general. Because regulatory focus represents first a *personal* motivation orientation, it could be more congruent with personal than with general goals; thus, the appearance/disappearance of the focus-standards relation could simply be explained

by variations in the implication of the self in the wording. This limitation led us to conduct an additional study, in which we examined whether a difference in terms of the self- versus others-focus may account for the observed findings.

We created two versions (self versus others in general) of each item for each of the two (original and alternative) conceptualisations, and tested whether this factor moderates the impact of the regulatory focus on adherence to the standards. We again measured participants' chronic promotion and prevention foci but used a different measure than Study 1; i.e., the General Regulatory Focus Measure (GRFM; Lockwood et al., 2002). The GRFM has been previously used by Fritsche et al. (2009) and was found to correlate moderately with the standards framed according to the alternative conceptualisation. It is thus a relevant scale to compare the relationship of the regulatory focus with both conceptualisations of standards.

Method

Participants and procedure. As in previous studies, students from a Swiss university were contacted by email and accepted to participate in an online study about "Ecology and Personality." Power analysis based on the average effect size of all three previous studies ($f = .22$; power = .80, repeated-measure ANOVA with 2×2 groups and two measurements) indicated a minimum sample size of 164. Initially, 187 participants completed the study but two were detected as deviant values (Studentized deleted residual $> |2.5|$; see Judd et al., 2009) and were excluded from the following analyses. The final sample ($N = 185$) included 70 males and 115 females from 17 to 55 years of age ($M = 24.6$, $SD = 6.93$) from different faculties. Participants self-rated their regulatory focus, then rated the standards.

Regulatory focus. Participants answered a shortened version of the GRFM (Lockwood et al., 2002). Indeed, we left out four items that were specifically related to the academic context in order to use measures of regulatory focus that were not related to a specific context. The retained scale counted seven items assessing prevention focus (7-point,

e.g. “I see myself as someone who is primarily striving to reach my ‘ideal self’ -to fulfil my hopes, wishes, and aspirations”, $M = 4.40$, $SD = 1.09$, $\alpha = .72$) and seven assessing promotion (e.g. “I see myself as someone who is primarily striving to become the self I “ought” to be -to fulfil my duties, responsibilities, and obligations”, $M = 5.53$, $SD = .98$, $\alpha = .81$). Prevention and promotion scores were positively correlated, $r(183) = .35$, $p < .001$, $BF_1 > 1000$.

● **Minimal and maximal standards.** Conceptualisation of the standards was a within-subject factor, so each participant answered four items assessing the standards related to the original, and four related to the alternative conception, as in previous studies. Total randomisation of self-/other-focus items of both conceptualisations resulted in four between-subject conditions: participants answered either (1) *self-focus* original and alternative items, (2) *others-focus* original and alternative items, (3) *self-focus* original and *others-focus* alternative items or (4) *others-focus* original and *self-focus* alternative items. Participants were randomly assigned to one version of the questionnaire.

We thus created two versions of each item assessing MIN and MAX standards, one focusing on the self and the other on people in general. Participants only responded to one of these versions. All items are reported in Appendix B. For example, two of the original conception’s items were “You have in mind a very high goal, the ideal you hope you approach someday” (self-focus) and “One has in mind a very high goal, the ideal one hopes to approach someday” (others-focus). Two items for the alternative conception were, “The principle of [...] must be respected as a matter of principle and in every case” (others-focus) and “I must respect the principle of [...] as a matter of principle and in every case” (self-focus). Moreover, the themes of energy preservation and waste recycling were used within-subjects. As in previous studies, the thematic had no effect on further analyses and items were averaged into single scores of MIN and MAX standards regardless of the theme (see descriptive statistics in Table 1). Exploratory factorial analyses (Principal axes factoring,

Oblimin rotation) ensured that the four-factor solution found in Study 1 holds when considering the variations of self- / other-focus. All items were entered in the factorial analysis, which revealed four factors accounting for 50% of variance. As in Study 1, each factor represented one standard (MIN or MAX) of one conceptualisation. Loadings are reported in Appendix A.

Results

Original conception's standards. A repeated-measure ANOVA was first conducted on the original conception's items, with the type of standard (minimal versus maximal) as the within-subject factor, and person of focus (1 = self; -1 = others), prevention score (standardised), promotion score (standardised) as between-subject predictors, as well as all the interactions between those factors. The analyses revealed a within-subject main effect of the standard, so that adherence to the MAX standard ($M = 5.31$, $SD = 1.17$) was higher than to the MIN ($M = 4.92$, $SD = 1.25$) in general, $F(1,177) = 14.17$, $p < .001$, $\eta^2_p = .07$, $BF_1 = 73$. Moreover, both standard \times promotion, $F(1,177) = 8.15$, $p = .005$, $\eta^2_p = .04$, $BF_1 = 11.7$, and standard \times prevention, $F(1,177) = 4.92$, $p = .028$, $\eta^2_p = .03$, $BF_1 = 3.06$, two-way interactions were significant. Crucially for the test of the possible effect of the covarying dimension, the standard \times person of focus interaction was shown to not be significant, $F(1,177) = 2.14$, $p = .145$, $\eta^2_p = .01$, nor were any of the 3- or the 4-way interactions; specifically: standard \times person of focus \times prevention: $F(1,177) = .39$, $p = .53$, $\eta^2_p = .002$; standard \times person of focus \times promotion: $F(1,177) = 2.48$, $p = .117$, $\eta^2_p = .01$; standard \times prevention \times promotion: $F(1,177) < .001$, $p = .99$, $\eta^2_p < .001$; and standard \times person of focus \times prevention \times promotion: $F(1,177) = .003$, $p = .96$, $\eta^2_p < .001$. Bayes factor for the person of focus variable was 0.10 (i.e., $BF_0 = 10.0$), providing strong evidence that the person of focus did *not* influence adherence to the MIN and MAX standards.

The decomposition of the standard by foci interactions showed that prevention score uniquely and positively predicted adherence to the MIN standard, $b = .20$ [.01, .40], $t(181) = 2.09$, $p = .038$, $\eta^2_p = .02$, $BF_1 = 3.23$. Promotion score, however, did not predict adherence to the MIN standard, $b = .05$ [-.14, .25], $t(181) = .52$, $p = .60$, $\eta^2_p = .002$, $BF_0 = 3.29$.

Conversely, adherence to the MAX standard was positively predicted by the promotion, $b = .42$ [.25, .59], $t(181) = 4.77$, $p < .001$, $\eta^2_p = .11$, $BF_1 > 1000$, but not the prevention score, $b = -.03$ [-.20, .14], $t(181) = -.37$, $p = .71$, $\eta^2_p = .001$, $BF_0 = 4.35$. Thus, regulatory focus was related to adherence to each standard –from the original conceptualisation– regardless of whether those standards were focused on the self or on others in general.

Alternative conception's standards. A similar repeated-measure ANOVA was conducted on the items formulated according to the alternative conception. The analysis yielded a within-subject main effect of the standard, so that adherence to the MIN standard ($M = 5.42$, $SD = 1.11$) was higher in general than to the MAX ($M = 4.53$, $SD = 1.86$), $F(1,177) = 16.97$, $p < .001$, $\eta^2_p = .09$, $BF_1 > 1000$. No other effects were significant. Most importantly, neither the standard \times prevention, $F(1,177) = 2.05$, $p = .15$, $\eta^2_p = .01$, $BF_0 = 3.05$, nor standard \times promotion, $F(1,177) = 2.05$, $p = .15$, $\eta^2_p = .01$, $BF_0 = 2.67$, two-way interactions, nor the three-way standard \times promotion \times prevention interaction, $F(1,177) = 2.44$, $p = .12$, $\eta^2_p = .01$, were significant. Furthermore, none of the effects associated to the person of focus reached the level of significance; specifically: standard \times person of focus: $F(1,177) = 2.13$, $p = .146$, $\eta^2_p = .012$; standard \times person of focus \times prevention: $F(1,177) = .98$, $p = .32$, $\eta^2_p = .005$; standard \times person of focus \times promotion: $F(1,177) = 1.16$, $p = .28$, $\eta^2_p = .007$; standard \times person of focus \times promotion \times prevention: $F(1,177) = .01$, $p = .93$, $\eta^2_p < .001$. Bayes factor for the person of focus variable was .08 (i.e., $BF_0 = 12.5$), providing strong evidence that the person of focus did *not* influence adherence to the MIN and MAX standards.

Discussion

The third study provided consistent evidence in support of the findings observed in Studies 1, 2a and 2b, and additionally ruled out a potential alternative explanation for them in terms of self- versus others-focus of the items. Results showed that the link between, respectively, promotion (prevention) and adherence to the MAX (MIN) standards hold for the item framed according to the original conception regardless of the person of focus. Again, the link between regulatory focus and standards was not significant when the latter were framed according to the alternative conception. Self- versus others-focus did not play any role either. This study therefore strengthened the proposal that the absence/presence of a link between regulatory focus and standards can be attributed to conceptual differences in terms of an absolute-gradual versus ideal-mandatory goal.

General Discussion

Brendl and Higgins (1996) distinguished two types of goals individuals can set for themselves that could predict further evaluations of the situation: a MIN (lower but mandatory) versus a MAX (higher and ideal) goal. Furthermore, these authors proposed that an individual's regulatory focus impacts the goals' relative salience, a promotion (prevention) focus orienting towards the accomplishment of a MAX (MIN) goal. However, other researches conceptualised MIN and MAX standards as, respectively, absolute versus gradual, and failed to confirm such a link with the focus (Fritsche et al., 2009; Kessler et al., 2010).

In the present research, we suggested that the contradicting relation between regulatory focus and MIN/MAX standards can at least be partly explained by differences in the standards' (original versus alternative) conceptualisation and thus, pragmatically, in the wording through which the standards are assessed. In four studies, we tested the relationships between regulatory focus and MIN/MAX standards by comparing wording drawn, on the one hand, from Brendl and Higgins's original conception, and, on the other hand, from the alternative conception. Consistent with our hypothesis and with previous literature, we found

this connection to depend on the specific wording utilised. A promotion (prevention) focus was indeed related to the MAX (MIN) standard, but only when those standards described a lower and mandatory versus a higher and ideal goal (i.e., Brendl and Higgins's conception). When standards described the goal in an absolute versus gradual fashion (the alternative conception), they were independent from the focus. By presenting all participants with the items drawn from both conceptions, we eliminate alternative explanations such as differences in the samples, methodologies or thematic used, and revealed a direct effect of the MIN/MAX standards wording. Moreover, the last study ensured against an alternative explanation for the effects in terms of the person on whom the standard focuses (self- versus others-focus) and showed that this factor did not account for the differential link between each standards' conceptualisation and regulatory focus.

By using Bayesian statistics, we were able to provide clearer evidence on the matter, which involved null hypothesis testing. Thus, the present research does not consist of a sole integrated replication of previous findings. It goes a step further by (a) proving that the absence of relationship between focus and standards –conceptualised the alternative way– does not indicate lack of power or poor measurement, but really the independence of the two concepts, and (b) ensuring that the effect cannot be accounted for by variations in the self-versus others-focus.

Induced and measured regulatory focus

Across four studies, we either manipulated or measured regulatory focus, each time with a different procedure or scale. Systematically, the measure of the focus (Studies 1 & 3) yielded a double effect. That is, prevention was related to adhesion of the MIN standard, and promotion to the MAX standard. However, when the focus was manipulated (Studies 2a & 2b), only prevention focus produced an effect. This effect may suggest that inducing a prevention focus might be easier than inducing a promotion focus. Indeed, literature has

widely documented the prevalence of loss aversion (e.g. Kahneman & Tversky, 1979), especially in individualistic countries (Wang, Rieger, & Hens, 2016). Accordingly, it could be easier to trigger a loss aversion amongst promotion-oriented individuals than a gain orientation amongst prevention-oriented ones. Moreover, given the importance of social acceptance (e.g. need to belong; Baumeister & Leary, 1995), from which results norm compliance and avoidance of deviancy (Festinger, 1950), people might generally be more inclined to adopt a goal presented as an obligation than an ideal. Finally, it should be noted that another reason could account for this difference: the thematic used in the present studies, i.e. environmental issues, are typically framed in prevention terms (e.g. emphasis on the urgency of saving the Earth). To the extent that people are accustomed to such appeals, switching to a prevention mode would be relatively easy when thinking about ecology, even if they were naturally more oriented towards promotion. The present research, however, does not allow us to make conclusions about the differences between foci. Future research is needed to better understand this issue.

Relation between the standards

The present findings showed that the correlation between MIN and MAX standards differed as a function of the standards' conception. When worded according to the alternative conception, the MIN and MAX standards were negatively correlated. This suggests an opposition between, on the one hand, an absolute and inviolable goal, and on the other hand, a gradual, less strict goal. Participants adhered either to one representation or the other. However, MIN and MAX standards were positively correlated when they represented ideal versus mandatory goals of different magnitudes. Although incidental regarding the aim of the present paper, this result can inform us about the nature of the regulatory foci. Indeed, promotion and prevention were first described as independent systems (Higgins, 1997) but empirical results are not consistent regarding this matter. Some studies find the foci to be

unrelated (e.g. Higgins et al., 2001) while other yield significant relations (e.g. Higgins et al., 1997; Lockwood et al., 2002) – even in the present paper, the foci were independent in Study 1 but positively correlated in Study 3. In fact, it is common practice in the field to work with difference scores or standardised residuals, precisely because of this relation between the two foci (see Higgins et al., 1997). The strength of the relation, when present, seems to depend on the measure used (see Haws et al., 2010). Some authors have proposed to distinguish between two modes, respectively simple routine activities versus urgent action mode, to account for variations in the interdependence/independence between the foci (Fellner, Holler, Kirchler, & Schabmann, 2007). Our results support the notion of a positive interdependence of the two regulatory systems. That is, to reach a MAX goal, one must first fulfil the MIN goal and to pursue the positive outcomes of a promotion-oriented, ideal goal, one must first ensure the avoidance of the negative outcomes of a non-fulfilled prevention-oriented, “ought” goal.

Brendl and Higgins (1996) first defined MIN and MAX goals as proxy to determine the valence associated to a given situation. Of particular interest are intermediate positions (i.e., in between the two goals): those would be evaluated as positive (or non-negative) as compared to the MIN goal, but as non-positive as compared to the MAX goal. In real-life settings, such intermediate positions are common. In fact, anytime people comply *a minima* with a normative position, they find themselves in this intermediate zone. We surmise that regulatory focus, by determining the standard made more salient, will not only affect the valenced evaluation of the situation, but also the motivation whether to pursue a higher standard and, thus, an individual’s future behaviour. Accordingly, prevention-oriented individuals would evaluate the situation as positive, their MIN goal being achieved, and would not feel any need to pursue their efforts any further. Conversely, promotion-oriented individuals, evaluating the situation as non-positive (MAX goal not being achieved yet)

would persevere in their efforts in that direction. Future research is needed to investigate such possibilities.

The absolute versus gradual nature of the standards

Interestingly, the idea that MIN standard is perceived dichotomously and MAX standard gradually can be traced back to the work of Shah and Higgins (1997). In this paper, the authors investigated the relative impact of expectancy and value on action direction as a function of regulatory focus. They suggest that the interactive model of expectancy \times value is only applicable for persons regulated in promotion, or in promotion-framed contexts. Under prevention focus, however, expectancy and value do not have an interactive- but only separate main effects. That is, goals of high value (i.e., obligations) will be pursued regardless of success expectancy. Conversely, goals of high expectancy (i.e., “easy” goals) will be pursued regardless of their value. On this basis, the authors concluded that promotion leads to “maximizing expected utility,” while prevention leads to achieving “what is necessary or what can be done with assurance” (Shah & Higgins, 1997, p. 455). Put differently, the authors propose an intermediate definition of the goals, where goals pursued under prevention focus present the combined characteristics of a mandatory goal and of something similar to a dichotomous perception; while goals pursued under promotion focus combine the idea of a higher and ideal goal with something similar to the notion of a gradual perception. However, if the results of Shah and Higgins (1997) clearly informed about the relative weight of expectancy and value as a function of regulatory focus, they did not directly test for the gradual versus absolute perception of the goals, which was only implied in their theoretical reasoning. We believe that the present paper, by explicitly assessing goals on both dimensions of absolute/gradual perception and higher/lower comparative magnitude, provides significant data on this matter. Our results suggest that the primary feature of goals that determines their association with regulatory focus is their magnitude, the lower (but

mandatory) goal being associated with prevention, and the higher (and ideal) goal with promotion. We do not refute that goals differ in the way they are evaluated. However, we suggest that the difference in goals evaluation does not constitute their more definitional feature as, when they are assessed specifically on this aspect (i.e., the alternative conception), goals are found to be independent from the focus.

Conclusion

In conclusion, to the question, “Is regulatory focus related to minimal and maximal standards?”, we answer, “Depends on how you ask!” If the initial definition by Brendl and Higgins (1996) is accepted, then the standards indeed arise from the regulatory focus. However, if standards are solely distinguished on the basis of their absolute versus gradual evaluation, then they do not seem to depend on the focus.

Acknowledgements

We wish to thank Wojciech Swiatkowski for his help in conducting the Bayesian analyses and Enrico Wensing for a valuable proofreading of the manuscript, as well as three anonymous reviewers for their much appreciated comments and suggestions on previous versions of this manuscript.

Appendices

Appendix A

Exploratory factorial analyses on all standards items in Studies 1 and 3 (Principal axis factoring, Oblimin rotation). In Study 3, two items were used to assess each standard (versus three in Study 1). Non-used items result in “n/a” loadings. Loadings under |.20| are not displayed.

	Study 1				Study 3			
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 1	Factor 2	Factor 3	Factor 4
<i>Original conception's items</i>								
MIN 1	.217	.455				.611		
MIN 2		.661				.430		
MAX 1	.708				.386			
MAX 2	.492				.381			
<i>Alternative conception's items</i>								
MIN 1			-.650				.410	
MIN 2			-.980				.891	
MIN 3			-.571				<i>n/a</i>	
MAX 1				.843				.997
MAX 2				.641				.713
MAX 3				.751				<i>n/a</i>

Appendix B

Items used to assess the standards in Study 3. Items of the original and alternative conceptualisations were duplicated into two variants focusing on either the self or others in general.

	Alternative conception (absolute vs. gradual)		Original conception (Brendl & Higgins)	
	Self-focus	Others-focus	Self-focus	Others-focus
	<i>To what extent do you dis/agree with the following affirmations?</i>		<i>When you are making efforts towards ecology, to what extent would you say that...</i>	<i>When it comes to make efforts towards ecology, to what extent do you think that...</i>
MAX standard	1. I should generally respect the principle of energy conservation, but exceptions can be allowed if the implications are not too important.	1. The principle of energy preservation should generally be respected, but exceptions can be allowed if the implications are not too important.*	1. You have in mind a very high goal, the ideal you hope you approach someday.*	1. One has in mind a very high goal, the ideal one hopes to approach someday.
	2. I should generally respect the principle of waste recycling, but exceptions can be allowed if the implications are not too important.	2. The principle of waste recycling should generally be respected, but exceptions can be allowed if the implications are not too important.*	2. You try to always do better, step by step.*	2. One tries to always do better, step by step.
MIN standard	1. I must respect the principle of energy preservation as a matter of principle and in every case.	1. The principle of energy preservation must be respected as a matter of principle and in every case.*	1. You have in mind a more moderate goal that you try to achieve at any cost.*	1. One has in mind a more moderate goal that one tries to achieve at any cost.
	2. I must respect the principle of waste recycling as a matter of principle and in every case.	2. The principle of waste recycling must be respected as a matter of principle and in every case.*	2. You are concerned that you don't fall below a certain level, a form of environmental "legal minimum".*	2. One is concerned not to fall below a certain level, a form of environmental "legal minimum".

Notes. Asterisk * signals items originally used in Studies 1-2a/b.

References

- Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 253-285). New York, NY, US: Cambridge University Press.
- Barth, M., Jugert, P., Wutzler, M., & Fritsche, I. (2015). Absolute moral standards and global identity as independent predictors of collective action against global injustice. *European Journal of Social Psychology, 45*(7), 918-930. <http://dx.doi.org/10.1002/ejsp.2160>
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychol Bull, 117*(3), 497-529.
<http://dx.doi.org/10.1037/0033-2909.117.3.497>
- Berthold, A., Mummendey, A., Kessler, T., Luecke, B., & Schubert, T. (2012). When different means bad or merely worse. How minimal and maximal goals affect ingroup projection and outgroup attitudes. *European Journal of Social Psychology, 42*(6), 682-690.
<http://dx.doi.org/10.1002/ejsp.1878>
- Biernat, M., & Eidelman, S. (2007). Standards. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles (2nd ed.)*. (pp. 308-333). New York, NY, US: Guilford Press.
- Brendl, C. M., & Higgins, E. T. (1996). Principles of judging valence: What makes events positive or negative? In M. P. Zanna (Ed.), *Advances in experimental social psychology, Vol. 28*. (pp. 95-160). San Diego, CA, US: Academic Press.
- Cesario, J., Grant, H., & Higgins, E. T. (2004). Regulatory Fit and Persuasion: Transfer From 'Feeling Right.'. *Journal of Personality and Social Psychology, 86*(3), 388-404.
<http://dx.doi.org/10.1037/0022-3514.86.3.388>
- Chernev, A. (2004). Goal Orientation and Consumer Preference for the Status Quo. *Journal of Consumer Research, 31*(3), 557-565. <http://dx.doi.org/10.1086/425090>

- Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational Behavior and Human Decision Processes*, 69(2), 117-132. <http://dx.doi.org/10.1006/obhd.1996.2675>
- Dienes, Z. (2014). Using Bayes to get the most out of non-significant results. *Frontiers in Psychology*, 5, 781. <http://dx.doi.org/10.3389/fpsyg.2014.00781>
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the Use of Exploratory Factor Analysis in Psychological Research. *Psychological Methods*, 4(3), 272-299. <http://dx.doi.org/10.1037/1082-989X.4.3.272>
- Falomir-Pichastor, J. M., & Gabarrot, F. (2011). Regulatory focus, self-directed emotions, and intergroup attitudes. *Revue Internationale de Psychologie Sociale*, 24(2), 77-104.
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175-191. <http://dx.doi.org/10.3758/BF03193146>
- Fellner, B., Holler, M., Kirchler, E., & Schabmann, A. (2007). Regulatory Focus Scale (RFS): Development of a scale to record dispositional regulatory focus. *Swiss Journal of Psychology*, 66(2), 109-116. <http://dx.doi.org/10.1024/1421-0185.66.2.109>
- Festinger, L. (1950). Informal social communication. *Psychological Review*, 57(5), 271-282. <http://dx.doi.org/10.1037/h0056932>
- Freitas, A. L., & Higgins, E. T. (2002). Enjoying goal-directed action: The role of regulatory fit. *Psychological Science*, 13(1), 1-6. <http://dx.doi.org/10.1111/1467-9280.00401>
- Fritsche, I., Kessler, T., Mummendey, A., & Neumann, J. (2009). Minimal and maximal goal orientation and reactions to norm violations. *European Journal of Social Psychology*, 39(1), 3-21. <http://dx.doi.org/10.1002/ejsp.481>
- Guo, T., & Spina, R. (2015). Regulatory focus affects predictions of the future. *Personality and Social Psychology Bulletin*, 41(2), 214-223. <http://dx.doi.org/10.1177/0146167214561194>
- Haws, K. L., Dholakia, U. M., & Bearden, W. O. (2010). An assessment of chronic regulatory focus measures. *Journal of Marketing Research*, 47(5), 967-982. <http://dx.doi.org/10.1509/jmkr.47.5.967>

- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, 52(12), 1280-1300.
<http://dx.doi.org/10.1037/0003-066X.52.12.1280>
- Higgins, E. T., Friedman, R. S., Harlow, R. E., Idson, L. C., Ayduk, O. N., & Taylor, A. (2001). Achievement orientations from subjective histories of success: Promotion pride versus prevention pride. *European Journal of Social Psychology*, 31(1), 3-23.
<http://dx.doi.org/10.1002/ejsp.27>
- Higgins, E. T., Roney, C. J. R., Crowe, E., & Hymes, C. (1994). Ideal versus ought predilections for approach and avoidance distinct self-regulatory systems. *Journal of Personality and Social Psychology*, 66(2), 276-286. <http://dx.doi.org/10.1037/0022-3514.66.2.276>
- Higgins, E. T., Shah, J., & Friedman, R. (1997). Emotional responses to goal attainment: Strength of regulatory focus as moderator. *Journal of Personality and Social Psychology*, 72(3), 515-525.
<http://dx.doi.org/10.1037/0022-3514.72.3.515>
- JASP Team. (2016). JASP (Version 0.7.5.5).
- Jeffreys, H. (1961). *Theory of probability - third edition*. New York, NY: Oxford University Press.
- Judd, C. M., McClelland, G. H., & Ryan, C. S. (2009). *Data analysis: A model comparison approach (2nd ed.)*. New York, NY, US: Routledge/Taylor & Francis Group.
- Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263-291. <http://dx.doi.org/10.2307/1914185>
- Kessler, T., Neumann, J., Mummendey, A., Berthold, A., Schubert, T., & Waldzus, S. (2010). How do we assign punishment? The impact of minimal and maximal standards on the evaluation of deviants. *Personality and Social Psychology Bulletin*, 36(9), 1213-1224.
<http://dx.doi.org/10.1177/0146167210380603>
- Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, 83(4), 854-864. <http://dx.doi.org/10.1037/0022-3514.83.4.854>
- Rotter, J. B. (1945). Level of aspiration as a method of studying personality: IV. The analysis of patterns of response. *Journal of Social Psychology*, 21(2), 159-177.
<http://dx.doi.org/10.1080/00224545.1945.9714163>

Rouder, J. N., & Morey, R. D. (2012). Default Bayes Factors for Model Selection in Regression.

Multivariate Behavioral Research, 47(6), 877-903.

<http://dx.doi.org/10.1080/00273171.2012.734737>

Scholer, A. A., Stroessner, S. J., & Higgins, E. T. (2008). Responding to negativity: How a risky tactic can serve a vigilant strategy. *Journal of Experimental Social Psychology*, 44(3), 767-

774. <http://dx.doi.org/10.1016/j.jesp.2007.06.006>

Shah, J., & Higgins, E. T. (1997). Expectancy×value effects: Regulatory focus as determinant of magnitude and direction. *Journal of Personality and Social Psychology*, 73(3), 447-458.

<http://dx.doi.org/10.1037/0022-3514.73.3.447>

van de Schoot, R., & Depaoli, S. (2014). Bayesian analyses: where to start and what to report. *The European Health Psychologist*, 16(2), 75-84.

Wagenmakers, E. J., Wetzels, R., Borsboom, D., & van der Maas, H. L. J. (2011). Why psychologists must change the way they analyze their data: The case of psi: Comment on Bem (2011).

Journal of Personality and Social Psychology, 100(3), 426-432.

<http://dx.doi.org/10.1037/a0022790>

Wang, M., Rieger, M. O., & Hens, T. (2016). The impact of culture on loss aversion. *Journal of Behavioral Decision Making*. <http://dx.doi.org/10.1002/bdm.1941>

Zhou, H., & Fishbach, A. (2016). The pitfall of experimenting on the web: How unattended selective attrition leads to surprising (yet false) research conclusions. *J Pers Soc Psychol*, 111(4), 493-

504. <http://dx.doi.org/10.1037/pspa0000056>

Tables

Table 1

Descriptive statistics of the MIN and MAX standards scores variously conceptualised in Studies 1, 2a, 2b and 3.

	MIN and MAX Standards			
	Alternative conception (absolute vs. gradual)		Original conception (Brendl & Higgins)	
	MIN	MAX	MIN	MAX
<i>Study 1 (N = 142)</i>				
Mean (SD)	3.89 (.87)	2.96 (1.09)	3.64 (.95)	3.52 (.92)
Reliability index	$\alpha = .77$	$\alpha = .80$	$r = .39^{***}$	$r = .42^{***}$
Correlation coefficient	$-.35^{***}$		$+.49^{***}$	
<i>Study 2a (N = 76)</i>				
Mean (SD)	5.23 (1.34)	3.97 (1.70)	4.59 (1.44)	4.62 (1.42)
Reliability index	$\alpha = .80$	$\alpha = .78$	$r = .33^{**}$	$r = .36^{**}$
Correlation coefficient	$-.38^{***}$		$+.58^{***}$	
<i>Study 2b (N = 186)</i>				
Mean (SD)	5.27 (1.41)	4.13 (1.51)	4.76 (1.37)	4.90 (1.33)
Reliability index	$r = .66^{***}$	$r = .56^{***}$	$r = .23^{***}$	$r = .44^{***}$
Correlation coefficient	$-.34^{***}$		$+.49^{***}$	
<i>Study 3 (N = 185)</i>				
Mean (SD)	5.42 (1.11)	4.53 (1.87)	4.92 (1.25)	5.31 (1.17)
Reliability index	$r = .74^{***}$	$r = .80^{***}$	$r = .17^*$	$r = .21^{**}$
Correlation coefficient	$-.42^{***}$		$+.30^{***}$	

Note. For Study 1, standards are measured on 5-point Likert scale. For Studies 2a, 2b and 3, standards are measured on 7-point Likert scales.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 2

Study 1: Correlations between participants' chronic promotion and prevention focus scores, and agreement with the MIN and MAX standards scores in Study 1.

		MIN and MAX Standards			
		Alternative conception (absolute vs. gradual)		Original conception (Brendl & Higgins)	
		MIN	MAX	MIN	MAX
Promotion focus	Pearson's <i>r</i>	.07	.09	.15	.23
	<i>p</i> -value	.41	.31	.09	.006
	BF ₁	-	-	-	4.16
	BF ₀	6.79	5.74	2.22	-
Prevention focus	Pearson's <i>r</i>	.10	.01	.25	.10
	<i>p</i> -value	.22	.96	.003	.22
	BF ₁	-	-	9.22	-
	BF ₀	4.47	9.51	-	4.56

Note. BF₁ represents evidence for the alternative hypothesis. BF₀ evidence for the null hypothesis. BF₁ = 1 / BF₀. A BF between 1 and 3 represents anecdotal evidence, between 3 and 10 moderate evidence, between 10 and 30 strong evidence, and > 30 very strong evidence for either the null or the alternative hypothesis.

Figures

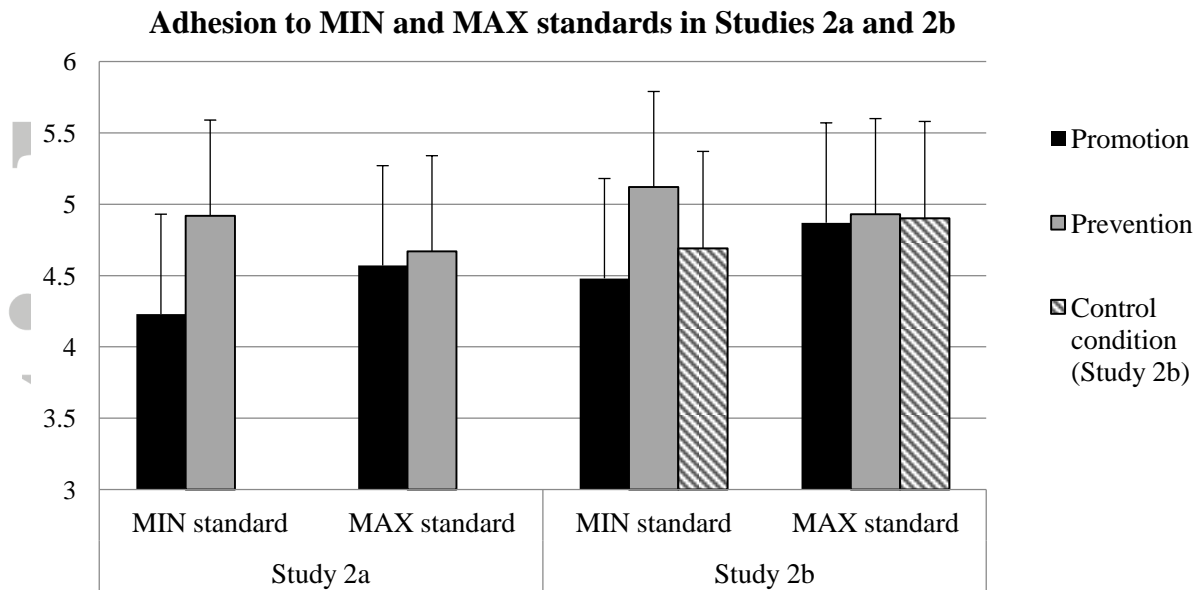


Figure 1. Adhesion to the minimal and maximal standards conceptualised according to the original conception (Brendl & Higgins, 1996), as a function of regulatory focus induction in Studies 2a ($N = 76$) and 2b ($N = 186$). Study 2b includes a control condition with no focus induction. Error bars represent standard deviations.

ⁱ Unfortunately, principal axes factoring analyses do not allow to test for each loading's significance. It should be noted, however, that this unexpected loading (.22) is half the size of the smallest of the expected loadings (.49). Moreover, it was negligible (-.04) in the principal axes factoring conducted in Study 3.

ⁱⁱ As expected, regression analyses on the alternative conception's items yielded no significant results; respectively: for the MIN score (overall model: $F(2,139) = 1.12, p = .33$), promotion: $b = .09 [-.13, .31], t(139) = .84, p = .40$, and prevention: $b = .14 [-.08, .36], t(139) = 1.25, p = .21$; for the MAX score (overall model: $F(2,139) = .51, p = .60$), promotion: $b = .14 [-.14, .42], t(139) = 1.01, p = .31$, and prevention: $b = .01 [-.27, .29], t(139) = .07, p = .95$.