

Regulatory focus and human values

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The present article connects two approaches to the study of human motivation and behavior: The Schwartz model of human values and Higgins' regulatory focus theory. Considering a prominent model of human motivation – the Rubicon Model of Action Phases – reveals that although both approaches refer to goals and standards as crucial constructs, human values are specifically relevant concerning the so-called deliberation and evaluation phases whereas self-regulatory orientations are specifically relevant concerning the volitional phases (i.e., planning and action). It may be due to the selective focus on specific aspects of human motivation that up to date hardly any (empirical) work has tried to connect human values and self-regulatory orientations. The reported studies assessed the relation between the endorsement of values proposed in the Schwartz model of human values and individual differences in the two self-regulatory orientations (promotion and prevention) proposed in regulatory focus theory. Findings reveal that prevention-focused self-regulation is positively related to conservation values (security, conformity) and negatively related to values reflecting openness to change (stimulation, self-direction). Moreover, promotion-focused self-regulation was positively related to self-enhancement values (power, achievement) and negatively related to values reflecting self-transcendence (universalism, benevolence). In addition, the observed relations were found using different instruments to measure human values and self-regulatory orientations. In combination, the observed findings support the proposed two-dimensional structure of the value system as well as fundamental assumptions of regulatory focus theory.

Keywords: human values, prevention, promotion, regulatory focus, motivation

Highlights:

- Relation between Schwartz value model and Higgins' regulatory focus theory is shown
- Prevention-focus relates to the conservation-openness dimension of human values
- Promotion-focus relates to the self-enhancement, self-transcendence dimension
- Relations are shown using different instruments

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The analysis of what motivates people to engage and persist in activities is among the most basic topics of social scientific research. One theoretical perspective on this fundamental question focuses on the analysis of distinct goals and standards as guiding forces that influence individuals' motivational processes. Two particularly prominent approaches contributing to this perspective can be differentiated: theoretical models that focus on *human values* (i.e., abstract desirable goal standards), on the one hand (cf. Rokeach, 1973; Schwartz, 1992; Seligman, Olson, & Zanna, 1996), and theoretical approaches that emphasize strategic *self-regulatory orientations* related to specific goals and reference standards, on the other (cf. Carver & Scheier, 1998; Elliot & Covington, 2001; Higgins, 1997). In general, it seems very promising to connect research on human values and approaches that focus on strategic self-regulatory orientations: because each neglects aspects that figure prominently in the other, both approaches could fruitfully complement each other and help us develop a more comprehensive understanding of the role which goals and related mechanisms play in human motivation. Of note, the Rubicon model of action phases (Heckhausen & Gollwitzer, 1987) addresses two distinct aspects related to the goal construct: goal setting and goal striving. Regarding the theoretical assumptions of models focusing on *human values* and models focusing on strategic *self-regulatory orientations*, it seems that, although both approaches refer to goals as crucial constructs, they address different phases in the model proposed by Heckhausen and Gollwitzer (1987, see Figure 1). In the motivational phase, human values representing abstract desirable goals (Schwartz, 1992) specifically relate to a person's goals setting, while self-regulatory orientations as proposed in Higgins' regulatory focus theory are specifically relevant concerning implementation of goals in the so called volitional phases. Furthermore, value models largely neglect the fact that different strategies can be applied to attain a certain goal or end state, instead they emphasize the transsituationally stable character of abstract and general goal standards. In contrast, approaches focusing on goals and related

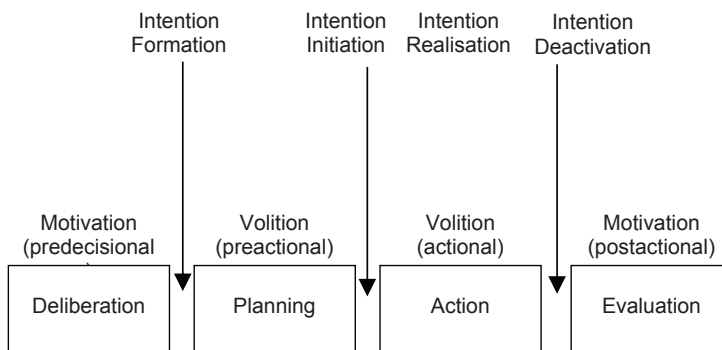


Figure 1. Rubicon model of action phases

strategic self-regulatory mechanisms highlight the idea that individuals can engage in fundamentally different strategies and apply distinct means to attain certain goals. In addition, most self-regulatory approaches explicitly state that *situational* influences can have a profound effect on motivational mechanisms, thus highlighting the context dependency of goal-related processes and the motivational orientations of individuals. In view of this differential emphasis on specific aspects, it seems imperative and fruitful to work on integrating both perspectives to establish a *comprehensive* understanding of human motivation.

However, to date there has been no systematic attempt to establish a connection between them. Although some researchers recently discussed possible relations between values and self-regulatory orientations on the theoretical level (cf. Kark & van Dijk, 2007; Rohan & Zanna, 1996), so far there is hardly any empirical evidence that bolsters the theoretical arguments put forth in these contributions. The only exception is a contribution by Leikas, Lönnqvist, Verkasalo, and Lindeman (2008) who found initial evidence in respect to relations between self-regulatory orientations and human values. However, this initial evidence obtained in a single study does not allow strong conclusions regarding the relation for several reasons. First, Leikas et al. (2008) made use of a specific measure of regulatory focus (the regulatory focus questionnaire introduced by Higgins et al., 2001) which asks respondents to report on their self-regulatory orientations and behaviors *in the past*. Accordingly, it may be questioned whether this instrument is validly assessing individuals' current habitual regulatory focus. Other measures are currently available that have better psychometric properties and are bolstered by stronger evidence regarding construct validity than the regulatory focus questionnaire (e.g. the scales developed by Lockwood, Jordan, & Kunda, 2002; or the scale introduced by Keller and Bless, 2008; a recent review addressing the available self-report measures of regulatory focus clearly supports this notion; cf. Ineichen, Florack, Keller, & Leder, 2010). Second, Leikas et al. (2008) made use of one specific measure of human values (the Portrait Value Questionnaire developed by Schwartz et al., 2001). It remains to be established whether the relation between self-regulatory orientations and human values can be replicated with the more widely used Schwartz Value Survey (Schwartz, 1992). Besides, Leikas et al. (2008) did not report findings referring to the relation between regulatory foci and the higher order dimensions of human values, that is, the openness-conservation dimension and the self-enhancement-self-transcendence dimension. Overall, the findings by Leikas et al. (2008) provide initial evidence. However, to obtain a broader picture of the relation between human values and regulatory foci, it is worthwhile to examine the relation using different, but widely used instruments with good psychometric properties, and to extend the analysis to the relation between regulatory foci and the higher order dimensions of human values.

The present article makes the attempt to establish a connection between the two camps by focusing on two particularly prominent theoretical models: (a) the Schwartz value model (Schwartz, 1992), and (b) regulatory focus theory (Higgins, 1997). The basic propositions of these two theoretical frameworks will be discussed in the next sections, followed by a discussion of how the two

perspectives and the core constructs proposed in both models can be related to each other.

The Schwartz Value Model

According to Schwartz (1992), values can be defined as transsituationally stable cognitive representations of desirable abstract goals that serve as guiding principles in people's lives (see also Rokeach, 1973). Like needs, motives, and goals, values are conceptualized as constructs that motivate actions. Values are inherently positive and reflect goals that are connected to *desirable* end states (e.g., achievement, security, stimulation). In this respect, values differ from needs, motives, and goals, which can be related to *negative* reference points and standards (e.g., losses, failures, and mistakes).

According to the Schwartz value model, 10 motivationally distinct values can be differentiated (Schwartz, 1992; see Table 1 for definitions of the types of values). The model holds that these values are structurally ordered, especially that a distinct structure of relations among these values can be identified, which reflects motivational opposites and compatibilities. As depicted in Figure 2, self-enhancement values (power and achievement) are conceptualized as opposite to and hence in conflict with self-transcendence values (universalism and benevolence). Moreover, conservation values (conformity, tradition, and security) are conceptualized as in conflict with openness to change values (stimulation and self-direction). According to the model, hedonism values are to some extent multifaceted in that they share elements of both openness and self-enhancement. In essence, the value model posits that two basic bipolar dimensions structure the value system: One dimension with self-enhancement and self-transcendence as end poles, and one dimension with conservation and openness to change as end poles.

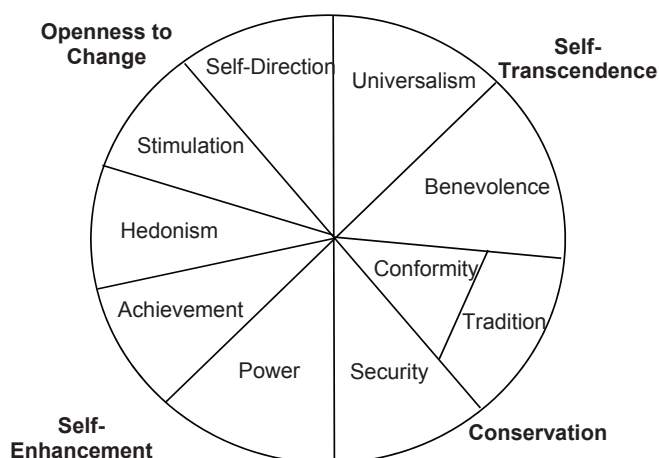


Figure 2. The structural relations among the 10 value constructs and four higher order values

Table 1
Definitions of the 10 basic values in terms of their goals and sample items

Value and related motivational goal	Sample items used in the Schwartz Value Questionnaire (Sample 1)/ the PVQ (Sample 2, 3 & 4)
<i>Power.</i> Social status and prestige, control or dominance over people and resources.	Social power (control over others, dominance) / He likes to be in charge and tell others what to do. He wants people to do what he says.
<i>Achievement.</i> Personal success through demonstrating competence according to social standards.	Capable (competent, effective, efficient) / Being very successful is important to him. He likes to stand out and to impress other people.
<i>Hedonism.</i> Pleasure and sensory gratification for oneself.	Enjoying life (enjoying food, sex, leisure etc.) / He really wants to enjoy life. Having a good time is very important to him.
<i>Stimulation.</i> Excitement, novelty, and challenge in life.	An exciting life (stimulating experiences) / He looks for adventures and likes to take risks. He wants to have an exciting life.
<i>Self-direction.</i> Independent thinking and action-choosing, creating, exploring.	Independent (self-reliant, self-sufficient) / It is important to him to make his own decisions about what he does. He likes to be free and not depend on others.
<i>Universalism.</i> Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature.	Equality (equal opportunity for all) / He thinks it is important that every person in the world should be treated equally. He wants justice for everybody, even for people he doesn't know.
<i>Benevolence.</i> Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.	Helpful (working for the welfare of others) / He always wants to help the people who are close to him. It's very important to him to care for the people he knows and likes.
<i>Tradition.</i> Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide the self.	Respect for tradition (preservation of time-honored customs) He thinks it is important to do things the way he learned from his family. He wants to follow their customs and traditions.
<i>Conformity.</i> Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.	Obedient (dutiful, meeting obligations) / He believes that people should do what they're told. He thinks people should follow rules at all times, even when no one is watching.
<i>Security.</i> Safety, harmony, and stability of society, of relationships, and of self.	National security (protection of my nation from enemies) / The safety of his country is very important to him. He wants his country to be safe from its enemies.

Research on the Schwartz value model revealed a distinct value hierarchy that is strikingly robust cross-culturally (Schwartz & Bardi, 2001). Around the globe, benevolence represents the single most important value (followed by self-direction and universalism), and power represents the least important value

(tradition and stimulation are consistently ranked only slightly higher in the value hierarchy). Thus, there is a high level of cross-cultural agreement regarding the *relative* importance of the different values (while absolute importance levels vary considerably across societies).

Regulatory Focus Theory

RFT represents a classic self-regulatory approach to the study of human motivation assuming that human behavior is heavily influenced by the standards and reference points that are salient and relevant in a given situation or chronically accessible in the individual's mind (cf. Keller, 2008). Probably the most characteristic feature of RFT is that this model goes beyond the basic hedonic principle according to which individuals approach pleasure and avoid pain. Specifically, Higgins (1997; 1998) argued that it is necessary to acknowledge that there are *different types of pleasure* and related positive end-states (e.g., safety and security versus personal growth and nurturance), and also *different types of pain* (e.g., losses and uncertainty versus non-gains, omissions, and disappointments), which are related to distinct self-regulatory principles and mechanisms. In essence, RFT holds that it is necessary to distinguish between two different types of positive and negative reference points (or input factors) that are conceptualized as triggers of specific self-regulatory mechanisms and of related cognitive, affective, and behavioral mechanisms. That is, RFT specifies distinct input factors as well as distinct output factors related to two basic modes of self-regulation: Promotion-focused and prevention-focused self-regulation.

The *input factors* related to promotion-focused self-regulation are nurturance needs (personal development, self-actualization, and growth), reflecting a concern with accomplishment and advancement, personal ideals, and maximal goals as relevant standards, as well as gains as relevant outcomes. In contrast, the input factors related to prevention-focused self-regulation are safety and security needs, oughts (duties, responsibilities, and obligations), and minimal goals as relevant standards, as well as losses as relevant outcomes.

It is important to note that the input factors do *not* reflect a valence dimension such that promotion (prevention) input factors are inherently positive (negative) (Higgins, 1997; 1998). One of the distinct characteristics of RFT is that this approach moves beyond the focus on sheer valence reflected in the classic approach-avoidance duality which holds that approach (avoidance) is always related to positive (negative) reference points. Thus, rather than simply differentiating positive and negative input factors (i.e., different reference points or end-states), Higgins emphasized different kinds of desired end-states and needs (e.g., nurturance and security; gain and non-loss). As is evident, several of the proposed (and empirically documented) input factors that elicit the prevention focus are positive in nature (e.g., safety and security). It is therefore important to keep in mind that the input factors are not inherently positive in case of promotion and negative in case of prevention.

The *output factors* reflecting the consequences of the activation of the promotion-focused type of self-regulation have a special sensitivity to

the presence or absence of positive events or outcomes and related cues, to eagerness and ambition as strategic orientation (i.e., a special tendency to insure hits and to insure against errors of omission), and to cheerfulness-dejection emotions. The activation of a prevention focus is associated with a sensitivity to the presence or absence of negative outcomes, with vigilance as strategic means (i.e., a special tendency to ensure correct rejections and protecting against errors of commission), with risk aversion, and with quiescence-agitation emotions. Numerous studies have supported these core assumptions (see Higgins, 1998; Higgins & Spiegel, 2004).

Note that both modes of self-regulation proposed in RFT are conceptualized as orthogonal, (i.e., independent) dimensions of self-regulation. That is, promotion- and prevention-focused self-regulation do *not* represent opposite end poles of one general dimension of self-regulation. Previous research has supported the assumption of independence showing that measures of individual differences in promotion- and prevention-focused self-regulatory orientations were only slightly correlated (cf. Lockwood et al., 2002; Lockwood, Sadler, Fyman, & Tuck, 2004) or virtually uncorrelated (cf. Higgins et al., 2001; Keller, 2008; Keller & Bless, 2008; Keller, Mayo, Greifeneder, & Pfattheicher, 2015; Lockwood, Marshall, & Sadler, 2005; Sassenberg, Jonas, Shah, & Brazy, 2006; Uskul, Keller, & Oyserman, 2008). Regarding possible relations with Schwartz human values, this implies that opposing relations of the two regulatory foci with other constructs are in general not more likely to be observed than other patterns of relations. That is, when we expect or observe a positive relation between promotion-focused self-regulation and a certain construct, this has no compelling implications with respect to the expected relation between prevention-focused self-regulation and the specific construct. It is important to keep this in mind when addressing the possible relations between the two modes of self-regulation and human values.

The Relation Between Human Values and Self-Regulatory Orientations

Given that the Schwartz value model as well as RFT emphasize that individuals are strongly influenced by *goal standards*, it seems that one would most likely find significant relations between distinct human values proposed in the Schwartz value model and the specific self-regulatory orientations put forth in RFT. Note that values can be conceptualized as ideals or oughts and hence as guides for self-regulation (cf., Roccas, Sagiv, Schwartz, & Knafo, 2002). Of course, the crucial question is to understand which of the 10 basic values are related to which self-regulatory orientation.

As briefly mentioned above, some authors have already discussed the relation between regulatory focus and human values. Rohan and Zanna (1996) speculated that prevention-focused individuals might place high priorities on conformity, tradition, and security, reflecting a resistance to change, while promotion-focused individuals might place high priorities on self-direction and stimulation values, reflecting an openness to change. Kark and van Dijk (2007) made a similar argument proposing that there should be a positive

relation between leaders' prevention focus and values of conservation as well as a positive relation between leaders' promotion focus and values of openness to change. Note that both contributions proposed opposing relations of the two self-regulatory foci with only one of the two higher order value dimensions (i.e., the conservation-openness dimension).

Given the orthogonality of the two foci, it does not seem reasonable to assume that both foci are strongly related to opposing end poles of the same dimension in the value system (e.g., openness to change versus conservation). Although such a pattern is logically possible it would reflect an underlying opposing relation between the two constructs. Based on previous research, it seems more plausible to assume that each of the two modes of self-regulation is (primarily) related to one of the two higher order value dimensions in the Schwartz value model. This assumption is meaningful also in view of the specific nature of the respective values and their underlying goal standards.

Prevention focus and the conservation–openness value dimension. It seems most plausible to assume that the prevention focus is positively related to conservation values (security, conformity, tradition), and negatively related to the conflicting values, namely stimulation and self-direction (openness to change values). Previous research (cf. Uskul et al., 2008) shows that prevention focus scale scores are significantly negatively correlated with sensation seeking (as assessed with the scale designed by Zuckerman, 1994), which represents a proxy measure of stimulation. This finding supports the proposed negative relation between the prevention focus and the conservation-openness dimension, since stimulation is one core element of openness to change. Moreover, previous research has revealed a positive relation between prevention-focused self-regulation and collectivism (or interdependence; cf. Lee, Aaker, & Gardner, 2000; Lockwood et al., 2005). Given that collectivism reflects (a) a concern with social norms, responsibilities and obligations, as well as (b) an appreciation for traditions and shared cultural customs (Markus & Kitayama, 1991) – two core elements of conservation values – the observed positive relation between prevention focus and collectivism supports the proposed positive relation between prevention focus and conservation values. Finally, previous theorizing (Jost, Glaser, Kruglanski, & Sulloway, 2003) and research (Lieberman, Idson, Camacho, & Higgins, 1999) support the proposed negative relation between prevention and openness to change. Specifically, Jost and colleagues (2003) argued that prevention-focused individuals should favor stability over change, because stability entails predictability and hence psychological security. Supporting this notion, Lieberman and colleagues (1999) found that participants in a prevention focus (a) were particularly inclined to resume an interrupted task rather than do a substitute task, and (b) exhibited a reluctance to exchange objects in their possession. Thus, there is good reason to assume a negative relation between prevention-focused self-regulatory tendencies and human values, reflecting openness to change, as well as a positive relation between prevention-focused self-regulatory tendencies and human values, reflecting conservation (resistance to change).

Promotion focus and the self-enhancement–self-transcendence value dimension. It seems plausible to assume that the promotion focus is positively related to self-enhancement values (power and achievement), and negatively related to the conflicting values, namely benevolence and universalism (self-transcendence values). Keltner, Gruenfeld, and Anderson (2003) documented that power is related to self-regulatory strategies that are promotion-focused in character. This supports the assumption that promotion-focused self-regulatory tendencies are most likely related to power values, which are part of the self-enhancement dimension. In line with this argument, Sassenberg et al. (2006) reported evidence indicating that high power groups are more valued by individuals in a promotion focus. Related to the power aspect of promotion-focused self-regulation, it is important to note that concern with prestige, status, power, and dominance is largely incompatible with self-transcendence values. For example, recent research by Guimond, Dambrun, Michinov, and Duarte (2003) revealed that individuals in powerful and prestigious hierarchical positions scored particularly high on a measure of social dominance orientation (SDO) and were particularly prejudiced against ethnic minorities. It is evident that SDO and prejudice represent constructs that are oppositional to benevolence and particularly universalism (reflecting a concern with *all* people's welfare, not only the in-group's welfare). In parallel, Cohrs and colleagues (2005) reported on a substantial relation between SDO and the power value in the Schwartz value model. In combination with the observed positive relation between power and the promotion focus discussed above, these considerations suggest that it seems plausible to expect a negative relation between promotion-focused self-regulatory tendencies and self-transcendence values. Finally, previous research has revealed a positive relation between promotion focus and individualism (or independence; cf. Lee et al., 2000; Lockwood et al., 2005). Given that individualism reflects (a) a concern with personal success and achievement, as well as (b) the desire to stand out and distinguish oneself from others (Markus & Kitayama, 1991) – two core elements of self-enhancement values – the observed positive relation between promotion-focused self-regulation and individualism supports the proposed positive relation between the promotion focus and self-enhancement values.

Based on the theoretical ideas (e.g. Kark & van Dijk, 2007; Rohan & Zanna, 1996) assuming that promotion-focused individuals are likely to cherish stimulation and self-direction, one may also expect to find that promotion-focused self-regulation is positively related to openness to change and negatively related to conservation (following the logic of the circular structure of the value system). If this turned out to be true, it would support the assumption that promotion-focused self-regulation is more complex in terms of its relations to the components of the value system.

The empirical studies reported below were designed to test the relations between regulatory foci and human values. Previous analyses of the value system mostly made use of statistical procedures (multidimensional scaling; cf. Schwartz & Bilsky, 1987; Schwartz et al., 2001) to test the structure of the value system without reference to external criteria (although some studies involved external criteria, cf. Barnea & Schwartz, 1998; Sagiv & Schwartz,

1995; Schwartz, 1996; Schwartz, & Huisman, 1995). Conversely, the present study assessed the structural relations between human values and regulatory orientations as external criteria, hence offering a valuable contribution to the ongoing assessment of the structural features of human values. If the two-dimensional structure actually holds true, we should find correlations of the relevant regulatory focus dimension with the measure of values representing the two end poles of the respective value dimension, revealing *opposite* signs (i.e., positive correlation of the prevention focus with conservation and negative correlation with openness; positive correlation of the promotion focus with self-enhancement and negative correlation with self-transcendence).

In addition, the study tests basic propositions entailed in RFT regarding the relation of both styles of self-regulation to a set of distinct goal standards (security and conformity as well as self-actualization and personal growth). An empirical documentation of the proposed relations would bolster these fundamental assumptions of RFT.

Furthermore, we use different instruments to measure human values and regulatory-focus orientations, therefore testing whether the proposed relation between self-regulatory orientations and human values can be replicated. Going beyond Leikas et al. (2008), we are also focusing on the relation between the regulatory focus strategies and the higher order dimensions of human values. Considering that each of the ten values covers rather specific goal constructs, it seems valuable to investigate which higher order dimension is related to which regulatory focus orientation.

Method

Participants and Procedure

Overall, we analyzed the data of 647 German participants (313 men; $M_{age} = 21.9$ years) to investigate the relation between self-regulatory orientations and human values. Data collection took place in four phases over the course of 6 years. Therefore, the results reported below were split into four samples. The first sample consisted of 188 undergraduate students (91 men; $M_{age} = 22.5$ years), the second sample of 298 undergraduate students (170 men; $M_{age} = 23$ years). The third sample consisted of 60 (37 men; $M_{age} = 21.6$ years), the fourth sample of 101 undergraduate students (15 men; $M_{age} = 20.4$ years)⁸. Participants completed a package of questionnaires including measures of several different traits and constructs, and received 2 – 3 EUR as compensation. The data were collected in the lab using paper-pencil questionnaires (Sample 1 & 2) and online using a survey software, i.e. Unipark (Sample 3 & 4). Results reported below focus on the instruments designed to measure the constructs relevant in the present context (human values and self-regulatory orientations).

Instruments

Regulatory focus. In all samples, chronic regulatory focus was assessed with a German version (Keller, 2008) of the Regulatory Focus Questionnaire introduced by Lockwood et al. (2002)⁹, which includes nine items intended to measure promotion and prevention,

8 The raw data used in this study is available under <https://www.uni-ulm.de/in/psy-soz/forschung/forschung/open-science-data-download-options/>

9 Note that Summerville and Roese (2008) critically discussed the instrument developed by Lockwood et al. (2002). However, this critique – which basically focuses on the fact that

respectively. A prevention focus sample item reads “I often worry that I will fail to accomplish my academic goals,” and a promotion focus sample item reads “I often think about the person I would ideally like to be in the future.” Responses were given on 7-point rating scales with higher values indicating greater agreement with the statement. In each sample, both scales were reliable with Cronbach’s alpha ranging from .66 (Sample 3) to .85 (Sample 4) for the prevention scale, and Cronbach’s alpha ranging from .74 (Sample 4) to .81 (Sample 2) for the promotion scale. The two scales were positively correlated (Sample 1: $r = .21, p < .01$; Sample 2: $r = .14, p < .05$; Sample 4: $r = .25, p < .05$), however the correlation in Sample 3 was not significant ($r = .11, n.s.$). The positive correlation supports the assumption that both scales assess a general tendency to regulate the self and indicates that the two regulatory foci do not represent opposite end-poles of one dimension.

In Sample 3, we included the scale developed by Keller and Bless (2008) as well as the instrument introduced by Ouschan, Boldero, Kashima, and Wakimoto (2007) as additional instruments to assess regulatory focus orientation.¹⁰ Sample items of the latter instrument read “To avoid failure, one has to be careful.” (prevention subscale) and “To achieve something, you need to be optimistic” (promotion subscale). Sample items of the scale designed by Keller and Bless read “In situations in which my performance is being judged, I often feel tense and unwell” (prevention subscale) and “In situations in which my performance is being judged, I often feel the desire to do well.” (promotion subscale). The scales reached acceptable levels of internal consistency (Ouschan et al. instrument: $\alpha_{\text{Promotion}} = .72$; $\alpha_{\text{Prevention}} = .82$; Keller and Bless instrument: $\alpha_{\text{Promotion}} = .61$; $\alpha_{\text{Prevention}} = .84$). Importantly, the correlations among the subscales of the different instruments (see Table 2) revealed substantial correlations among the scales assessing promotion and prevention, respectively. In contrast, no meaningful correlations emerged between scales assessing different self-regulatory orientations. This clearly supports the convergent and discriminant validity of the scales.

the subscales of the Lockwood et al. instrument are correlated with (affective) valence – can be countered on theoretical grounds. Specifically, RFT entails the explicit assumption that a prevention focus should be associated with a special focus on *negative* outcomes and events whereas a promotion focus should be related to a special focus on *positive* outcomes and events. Accordingly, valid measures of the degree to which a prevention or promotion focus is active in a person should reflect the differential sensitivity to positive and negative outcomes and events. Thus, correlations of a prevention focus scale with indicators reflecting a sensitivity to negative information (including negative affect) and correlations of a promotion focus scale with sensitivity to positive information (including positive affect) actually speak to the validity of the respective scale. It is important to note that according to RFT the two regulatory foci are related to specific input and output variables and the argument that the two foci are independent of valence is only true regarding the input variables. The output variables related to both foci are postulated to be related to valence in RFT

10 We decided not to include the Regulatory Focus Questionnaire (RFQ; Higgins et al., 2001) as an alternative measure because recent studies revealed that the validity and reliability of this instrument may be questioned (cf. Ineichen, Florack, Keller, & Leder, 2010). Specifically, several aspects of the RFQ seem problematic. First, the scales typically do not reach high levels of internal consistency. Second, the items included in the scales refer to *past* behavior. Accordingly, one may question whether the instrument is actually assessing current individual differences in the two habitual orientations. Third, the construct validity of RFQ was found to be modest at best in a series of recent studies whereas the data clearly supported the construct validity of the Lockwood scales as well as the instrument developed by Keller and Bless (cf. Ineichen et al., 2010). In addition, Semin et al. (2005) reported severe reliability problems when using a translated version of the RFQ in the Netherlands. Our study was conducted in Germany, accordingly we decided not to include a translated German version of the RFQ, but instead chose other reliable instruments.

Table 2
Correlations of the Regulatory Focus Scales (Sample 3)

	(1)	(2)	(3)	(4)	(5)	(6)
Lockwood et al. scales						
Prevention (1)	–	.11	.57***	-.14	.48***	-.05
Promotion (2)		–	.01	.40**	.16	.36**
Keller & Bless scales						
Prevention (3)			–	-.10	.38**	.13
Promotion (4)				–	-.02	.31*
Ouschan et al. scales						
Prevention (5)					–	-.09
Promotion (6)						–

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

Human values. In Sample 1, the importance that participants attributed to each of the 10 values as guiding principles in their life was measured with a German version (Schmitt, Schwartz, Steyer, & Schmitt, 1993) of the Schwartz Value Survey comprising 58 items (Schwartz, 1992). Responses were given on rating scales ranging from (-1) *opposed to my values* to (7) *of supreme importance* (the analyses reported below are based on recoded scores, that is, scores reflect a scale ranging from 0 to 8; examples of the specific concepts and items are displayed in Table 1). The internal reliabilities of the value indexes ranged from tradition .48 to hedonism .77.

In all other samples, we used a German version (Hinz, Brähler, Schmidt, & Albani, 2005) of the Portrait Values questionnaire (PVQ; Schwartz et al., 2001) to measure the importance attributed to each of the 10 values. In Sample 2 & 3 a short version with 21 items and in Sample 4 a long version with 57 items was used. Each item consists of a description of a person (“portrait”) and respondents rate how similar they see themselves to the portrayed target person on a scale ranging from (1) *very similar* to (6) *very dissimilar* (the analyses reported below are based on reversed scores, that is, higher scores reflect higher endorsement of the value). Both instruments, the Schwartz Value Survey and the PVQ, have been extensively used in previous research and the obtained findings support their validity (cf. Caprara, Schwartz, Capanna, Vecchione, & Barbaranelli, 2006; Schmidt, Bamberg, Davidov, Herrmann, & Schwartz, 2007; Schwartz, 1992; 2007; Schwartz & Rubel, 2005; Schwartz et al., 2001).

Although, previous studies support the validity of the short version of the PVQ (cf. Cohrs et al., 2005; Schwartz & Rubel, 2005; Schwartz, 2006), alpha reliabilities of the value indexes are typically fairly low because each value measure is based on only two items (universalism on three items) that cover conceptually broad constructs. In Sample 2 & 3, some of the value measures were problematic with respect to the internal consistency of the relevant items. First, the two items designed to assess self-direction were positively correlated (Sample 2: $r = .16$, $p < .01$; Sample 3: $r = .26$, $p < .05$). However, in Sample 2 alpha reliability was quite low (Sample 2: $\alpha_{\text{self-direction}} = .26$; Sample 3: $\alpha_{\text{self-direction}} = .41$). Second, the two items assessing tradition were only positively correlated in Sample 2 (Sample 2: $r = .21$, $p < .001$; Sample 3: $r = .19$, *n.s.*), and the alpha reliability for this value measure was accordingly low (Sample 2: $\alpha_{\text{tradition}} = .35$; Sample 3: $\alpha_{\text{tradition}} = .31$). This should be kept in mind when interpreting the correlations involving tradition. Reliabilities of the remaining eight value indexes ranged from Cronbach’s alpha = .26 (self-direction) to .72 (conformity and stimulation). None such problems emerged in Sample 4, when we used the long version of the PVQ. Alpha reliabilities of the PVQ indexes ranged from Cronbach’s alpha = .55 (universalism) to .81 (power).

Results and Discussion

In order to understand which of the foci and which of the values were particularly strongly endorsed by the participants, we first consider the observed mean scores on the respective scales. In each sample, the mean promotion scale score was significantly higher than the prevention scale score (see Table 3). This is consistent with previous findings conducted in Western cultures (cf. Keller, 2008; Lockwood et al., 2002) and suggests that most participants were predominantly promotion-focused in their habitual self-regulatory orientation. In fact, when considering difference scores – computed by subtracting prevention from promotion scale scores – we find that between 75.5% (Sample 3) and 83% (Sample 1) of the participants were predominantly promotion-focused as indicated by a positive difference score (percentages based on the score measured with the scale by Lockwood et al., 2002).

Table 3
Mean Scores on the Regulatory Focus Scales

			<i>M</i>	<i>SD</i>
Sample 1				
Lockwood et al. scales	Prevention		3.64	1.1
	Promotion		4.86	0.89
	Difference score		1.22	1.25
	% of participants with dominant promotion focus		83	
Sample 2				
Lockwood et al. scales	Prevention		4.16	1.2
	Promotion		5.12	0.96
	Difference score		0.96	1.4
	% of participants with dominant promotion focus		75.5	
Sample 3				
Lockwood et al. scales	Prevention		4.4	0.82
	Promotion		5.06	0.79
	Difference score		0.66	1.07
	% of participants with dominant promotion focus		76.7	
Keller & Bless scales	Prevention		4.69	0.78
	Promotion		5.14	0.74
	Difference score		0.45	1.13
	% of participants with dominant promotion focus		70.0	
Ouschan et al. scales	Prevention		4.49	0.91
	Promotion		4.93	0.82
	Difference score		0.44	1.29
	% of participants with dominant promotion focus		62.7	
Sample 4				
Lockwood et al. scales	Prevention		4.19	1.05
	Promotion		5.03	0.74
	Difference score		.84	1.12
	% of participants with dominant promotion focus		79.8	

Our results are in line with previous research (cf. Schwartz & Bardi, 2001), showing that universalism, benevolence, and self-direction are values

with high mean scores; whereas power and tradition are the values with low mean scores (see Figure 3 to 6). It is interesting to note that while a clear majority of participants was obviously predominantly promotion-focused, we simultaneously find that two of the values most strongly endorsed (benevolence and universalism) are postulated to be negatively related to promotion-focused self-regulation. This suggests that the hierarchical ordering of the two self-regulatory orientations (promotion and prevention) differs from the hierarchy observable when considering the set of related values.

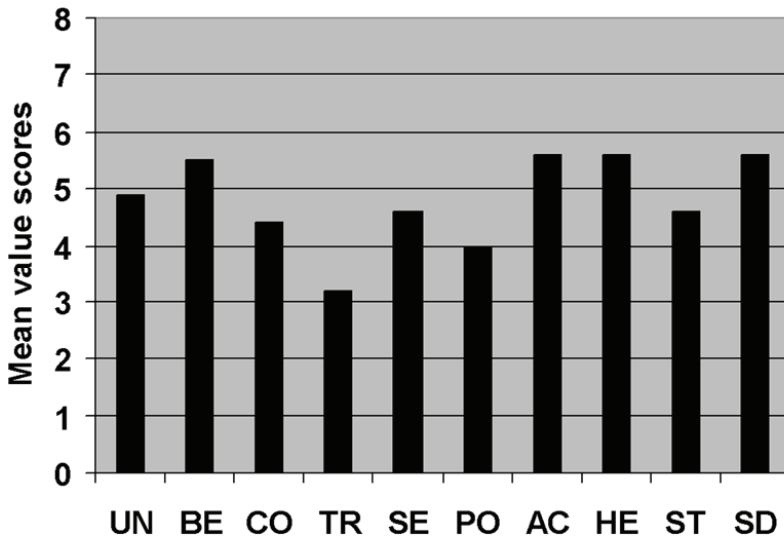


Figure 3. Mean scores observed in Schwartz Value Survey in Sample 1.

Note. UN = universalism, BE = benevolence, CO = conformity, TR = tradition, SE = security, PO = power, AC = achievement, HE = hedonism, ST = stimulation, and SD = self-direction; value scores were assessed on a scale ranging from -1 to 7 (scores were recoded for the analyses and ranged from 0 to 8).

In Figure 4 we combined the mean scores from Sample 2 with the mean scores on the PVQ value indices obtained in the European Value Survey collected in 2006 (German sample; $n = 2919$; European Social Survey, 2010). As is evident, the two figures (as well as Figures 5 and 6) reveal a striking similarity. Specifically, the value hierarchy obtained in our student samples is almost perfectly parallel to the hierarchy observed in the representative ESS sample. This speaks against the notion that the validity of our findings could be questioned due to the non-representative character of the sample.

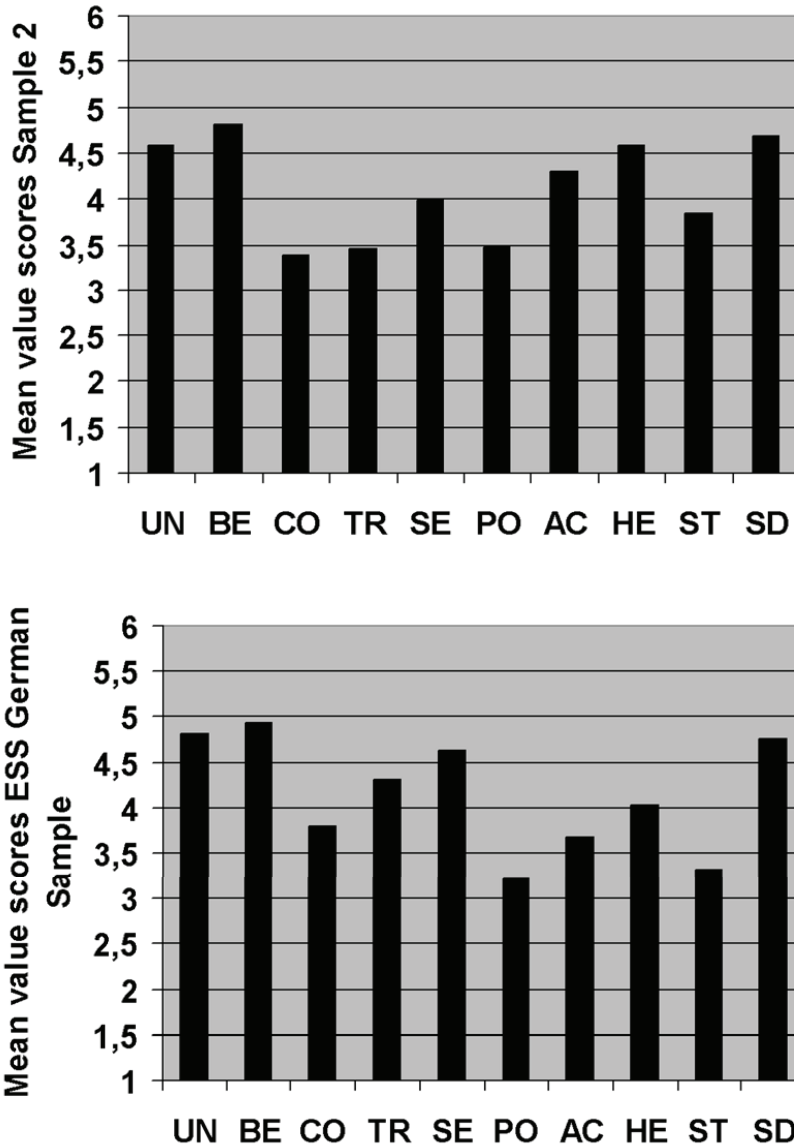


Figure 4. Mean scores observed on the value scales in Sample 2 and the European Social Survey (2006; German Sample)

Note. UN = universalism, BE = benevolence, CO = conformity, TR = tradition, SE = security, PO = power, AC = achievement, HE = hedonism, ST = stimulation, and SD = self-direction; value scores were assessed on a scale ranging from 1 to 6.

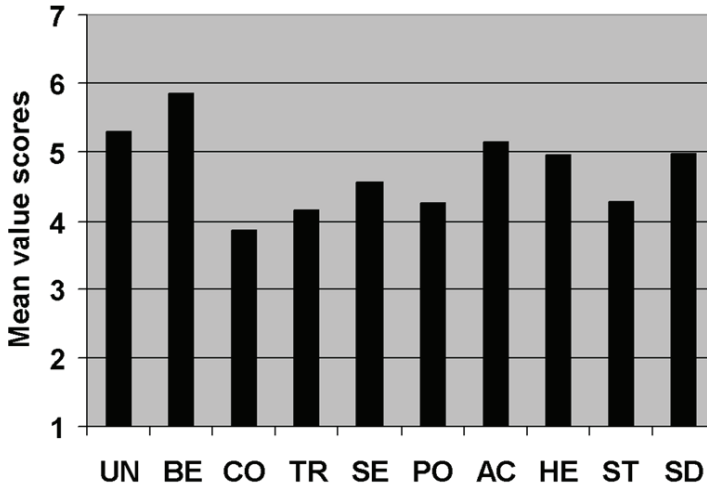


Figure 5. Mean scores observed on PVQ value scales in Sample 3

Note. UN = universalism, BE = benevolence, CO = conformity, TR = tradition, SE = security, PO = power, AC = achievement, HE = hedonism, ST = stimulation, and SD = self-direction; value scores were assessed on a scale ranging from 1 to 7.

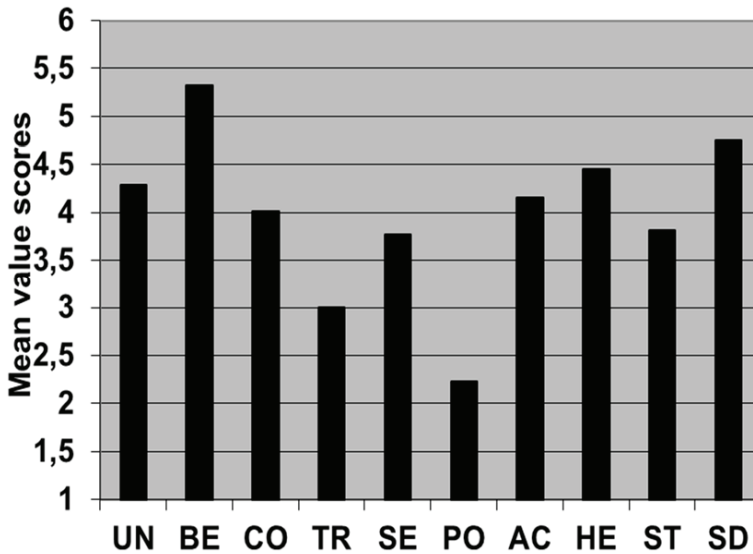


Figure 6. Mean scores observed on PVQ value scales in Sample 4

Note. UN = universalism, BE = benevolence, CO = conformity, TR = tradition, SE = security, PO = power, AC = achievement, HE = hedonism, ST = stimulation, and SD = self-direction; value scores were assessed on a scale ranging from 1 to 6.

Relations between human values and regulatory focus

In line with the established analytic strategy suggested by Schwartz (1992; 2001; Schwarz & Rubel, 2005), participants' responses on the value items were centered by subtracting participants' mean score across all items from the respective response on each single value item before we proceeded to assess the relation between values and regulatory foci. This procedure is known as the computation of ipsative values (cf. Baron, 1996) and is applied to eliminate individual differences in the use of response scales. Ipsative scores represent the *relative* strength of the construct compared with others in the set, rather than the *absolute* score. Ipsative data are amenable to analysis using standard techniques, and other properties often make them at least as useful as normative data (e.g., Gordon, 1976; Saville & Willson, 1991). The correlations between the 10 values and both scales assessing the two dimensions of self-regulatory orientations proposed in RFT are reported in Table 4.

Table 4
Correlations of the 10 Types of Values With Regulatory Focus Scales

	UN	BE	CO	TR	SE	PO	AC	HE	ST	SD
Sample 1										
Prevention	-.02	-.04	.16*	.15*	.15*	-.04	-.03	-.18*	-.18*	-.05
Promotion	-.04	-.20**	-.002	-.06	.11	.11	.06	.03	-.002	.04
Sample 2										
Prevention	-.03	.06	.20**	.09	.24***	-.06	.10 ⁺	-.07	-.32***	-.20***
Promotion	-.22***	-.12*	-.13*	-.16**	.05	.24***	.19**	.004	.09	.10 ⁺
Sample 4										
Prevention	-.006	.05	.16	-.15	.12	.07	.13	-.24**	-.16	-.20*
Promotion	-.11	-.19 ⁺	-.21*	-.03	-.01	.11	.43***	-.002	.24*	-.001
Sample 3										
Lookwood et al. scale										
Prevention	.11	-.12	.34**	.10	.37**	.04	-.05	-.19	-.28*	-.38**
Promotion	-.13	-.12	-.17	-.15	.09	.38**	.35**	-.17	-.12	.09
Keller & Bless scale										
Prevention	.21	.12	.14	.04	.24 ⁺	-.05	.21	-.19	-.33*	-.31*
Promotion	-.17	-.28*	-.16	.02	-.03	.31*	.27*	-.16	-.07	.24 ⁺
Ouschan et al. scale										
Prevention	-.02	.05	.35**	.40**	.35**	.00	.12	-.25 ⁺	-.49***	-.46***
Promotion	-.15	-.12	-.16	-.18	-.07	.11	.27*	-.04	.12	.18

Note. Prevention and promotion scores were measured with the Lookwood et al. scale. UN = universalism, BE = benevolence, CO = conformity, TR = tradition, SE = security, PO = power, AC = achievement, HE = hedonism, ST = stimulation, and SD = self-direction. ⁺ $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Prevention Focus. As depicted in Table 4, prevention scale scores were significantly positively related to conformity and security (in Sample 4 the correlations were positive, but not significant). In Sample 1, prevention scale scores were also significantly positively related to tradition, however in Sample 2 & 3 the correlation was fairly low and not significant, with the exception of the instrument designed by Ouschan and colleagues used in Sample 3. In Sample 4, the correlation was negative, but not significant. The prevention scale was significantly negatively related to stimulation (except Sample 4), hedonism (in Sample 1 & 4, in Sample 2 & 3 the negative correlation was not significant), and self-direction (except for Sample 1). Overall, these findings support the proposition that prevention-focused self-regulation is related to the conservation-openness dimension of the value system.

When considering indices representing the higher order values sectors (averaging across the relevant value scales¹¹) we found that prevention scores were significantly positively related to the conservation index (except the Keller & Bless prevention scale in Sample 3), whereas the scale was in each sample significantly negatively related to the openness index (see Table 5). Moreover, it is noteworthy that in each sample the prevention scale was uncorrelated with the second higher order dimension of the value system (self-enhancement-self-transcendence dimension). The only exception is the modest correlation of Keller and Bless' prevention scale with self-transcendence in Sample 3. These correlational findings indicate (1) that prevention-focused self-regulation comports with cherishing safety, security, and restraint of actions and impulses expressed in conservation values, and (2) that prevention-focused self-regulation stands in opposition to valuing stimulation and self-direction expressed in openness to change values.

11 The unexpected negative correlation between prevention and tradition observed in Sample 4 led to the exclusion of the tradition value items when computing the higher order conservation scale scores for Sample 4.

Table 5
Correlations of the Regulatory Focus Scales with Higher Order Values

		Conservation	Self-enhancement	Self-transcendence	Openness
Sample 1					
	Prevention	.23**	-.05	-.04	-.17*
	Promotion	.001	.12 ⁺	-.14 ⁺	.02
Sample 2					
	Prevention	.26***	.02	.01	-.33***
	Promotion	-.12*	.27***	-.23***	.11 ⁺
Sample 4 ^a					
	Prevention	.19 ⁺	.12	.03	-.22*
	Promotion	-.16	.31**	-.18*	.19 ⁺
Sample 3					
Lockwood et al. scales					
	Prevention	.40**	-.01	-.01	-.39**
	Promotion	-.12	.45***	-.16	-.03
Keller & Bless scale					
	Prevention	.20	.09	.22*	-.38**
	Promotion	-.10	.36**	-.29*	.08
Ouschan et al. scale					
	Prevention	.54***	.08	.01	-.57***
	Promotion	-.20	.23 ⁺	-.17	.18
Combined indexes					
	Prevention	.48***	.06	.09	-.56***
	Promotion	-.19	.46***	-.27*	.10

Note. Prevention and promotion scores were measured with Lookwood et al. scale. ⁺ $p \leq .1$, * $p < .05$, ** $p < .01$, *** $p < .001$. a) The conservation index in Sample 4 consisted only of Conformity and Security, Tradition was excluded.

Promotion Focus. Table 4 reveals that promotion scale scores were significantly positively related in each sample to achievement (not significantly in Sample 1), to power (except for Sample 1 & 4), and in Sample 4 to stimulation, whereas the scale was in each sample significantly negatively related to benevolence, in Sample 2 to universalism (the correlations in all other samples were negative, but not significant in most cases), to tradition (Sample 2) and in Sample 2 & 4 to conformity. This provides only partial support for the proposition that promotion-focused self-regulation is related to the self-enhancement-self-transcendence dimension of the value system.

Considering indices representing the higher order values sectors, we find that in each sample promotion scores were marginally significantly positively related to the self-enhancement index, whereas the scale was significantly negatively related to the self-transcendence index (see Table 5).

Moreover, the promotion scale shows modest negative relations to the conservation-openness dimension. The consistency of the correlation across three samples (Sample 2, 3 and 4) suggests that there is a reliable modest negative relation between promotion-focused self-regulation and conservation values. Note that the relation between the promotion focus scale and the conservation-openness dimension are in line with the theoretical arguments reported above (Kark & van Dijk, 2007; Rohan & Zanna, 1996), according to which the promotion focus should be associated with values reflecting openness. This relation supports the assumption that this mode of self-regulation may be multifaceted in terms of the values that are associated with it.

Regression analyses. To test whether the observed associations remain stable when testing the discriminant association while statistically controlling for the other kind of self-regulatory orientation, regression analyses were conducted to examine the relations between the higher order value indices (as criterion) and the regulatory focus scale scores (as predictors). As depicted in Table 6, the analyses resulted in (marginally) significant coefficients for all expected relations.¹² Thus, the discriminant associations support the proposed relations between prevention-focused self-regulation and the conservation-openness dimension, as well as the relations between promotion-focused self-regulation and the self-enhancement-self-transcendence dimension.

12 Initial exploratory analyses indicated that participant gender had a meaningful effect with respect to endorsement of three of the four higher-order value indexes. Accordingly, we included participant gender in the respective analyses.

Table 6
Results of regression analyses testing the discriminant associations between focus scales and human values

Panel 1

Sample 1	Predictor	Criterion									
		Self-Enhancement					Self-Transcendence				
		F	R ²	B	SE B	β	F	R ²	B	SE B	β
		3.08*	.05				4.97**	.08			
	Prevention Focus			-.04	.05	-.06			-.01	.04	-.02
	Promotion Focus			.10	.06	.13 ⁺			-.08	.05	-.13 ⁺
	Participant Gender			.23	.10	.17*			-.26	.08	-.24**
		Conservation					Openness to Change				
		F	R ²	B	SE B	β	F	R ²	B	SE B	β
		5.5**	.08				2.88 ⁺	.03			
	Prevention Focus			.14	.04	.25**			-.12	.05	-.18*
	Promotion Focus			-.04	.05	-.06			.05	.06	.06
	Participant Gender ^a			.20	.08	.17*					

Note. ⁺ $p < .1$; * $p < .05$, ** $p < .01$, *** $p < .001$; a) participant gender had no meaningful effect in the analysis with openness as criterion variable ($t < 1$), which is why the variable was eliminated from the respective analysis (the gender variable was coded 1 for women and 2 for men).

Table 6 (continued)

Panel 2

Sample 2	Predictor	Criterion									
		Self-Enhancement					Self-Transcendence				
		F	R ²	B	SE B	β	F	R ²	B	SE B	β
		11.16***	.07				8.49***	.05			
	Prevention Focus			-.01	.04	-.02			.02	.03	.04
	Promotion Focus			.21	.04	.27***			-.14	.03	-.24***
		Conservation					Openness to Change				
		F	R ²	B	SE B	β	F	R ²	B	SE B	β
		14.62*	.09				22.17*	.13			
	Prevention Focus			.15	.03	.28***			-.21	.03	-.35***
	Promotion Focus			-.10	.04	-.16**			.12	.04	.16**

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

Table 6 (continued)

Panel 3

Sample 3	Predictor	Criterion									
		Self-Enhancement					Self-Transcendence				
		F	R ²	B	SE B	β	F	R ²	B	SE B	β
	Lockwood et al. scales	9.72***	.25				2.42	.12			
	Prevention Focus			.07	.15	.05			.00	.09	.00
	Promotion Focus			.66	.15	.50***			-.16	.09	-.22 ⁺
	Participant Gender ^a								-.35	.15	-.30*
		Conservation					Openness to Change				
		F	R ²	B	SE B	β	F	R ²	B	SE B	β
		6.63**	.19				3.95 ⁺	.09			
	Prevention Focus			.565	.15	.44**			-.39	.17	-.29*
	Promotion Focus			-.02	.16	-.02			.17	.17	.13

Note. ⁺*p* < .07; * *p* <= .05, ** *p* < .01, ****p* < .001; a) participant gender had no meaningful effect in the analysis with self-enhancement as criterion variable (*t* < 1), which is why the variable was eliminated from the respective analysis (the gender variable was coded 1 for women and 2 for men).

Table 6 (continued)

Panel 4

Sample 3	Predictor	Criterion									
		Self-Enhancement					Self-Transcendence				
		F	R ²	B	SE B	β	F	R ²	B	SE B	β
	Keller & Bless scales	3.97*	.12				4.31**	.19			
	Prevention Focus			.22	.14	.20			.09	.09	.12
	Promotion Focus			.47	.18	.33*			-.24	.10	-.31*
	Participant Gender ^a								-.31	.15	-.26*
		Conservation					Openness to Change				
		F	R ²	B	SE B	β	F	R ²	B	SE B	β
		1.15	.05				3.02 ⁺	.1			
	Prevention Focus			.23	.14	.21			-.34	.15	-.31*
	Promotion Focus			-.06	.19	-.04			.02	.19	.02

Note. ⁺*p* < .07; * *p* <= .05, ** *p* < .01, ****p* < .001; a) participant gender had no meaningful effect in the analysis with self-enhancement, conservation or openness as criterion variable (*t* < 1), which is why the variable was eliminated from the respective analysis (the gender variable was coded 1 for women and 2 for men).

Table 6 (continued)

Panel 5

Sample 3	Predictor	Criterion									
		Self-Enhancement					Self-Transcendence				
		F	R ²	B	SE B	β	F	R ²	B	SE B	β
	Ouschan et al. scales	3.95*	.12				2.77	.13			
	Prevention Focus			.24	.15	.21			.00	.08	.01
	Promotion Focus			.39	.16	.31*			-.19	.09	-.27*
	Participant Gender ^a								-.39	.15	-.33*
		Conservation					Openness to Change				
		F	R ²	B	SE B	β	F	R ²	B	SE B	β
		11.36***	.29				10.31***	.27			
	Prevention Focus			.61	.13	.44***			-.53	.14	-.45***
	Promotion Focus			-.02	.15	-.02			.30	.15	.23 ⁺

Note. ⁺*p* < .07; * *p* <= .05, ** *p* < .01, ****p* < .001; a) participant gender had no meaningful effect in the analysis with self-enhancement, conservation or openness as criterion variable (*t* < 1), which is why the variable was eliminated from the respective analysis (the gender variable was coded 1 for women and 2 for men).

Table 6 (continued)
Panel 6

Predictor	Criterion									
	Self-Enhancement					Self-Transcendence				
	F	R ²	B	SE B	β	F	R ²	B	SE B	β
Sample 4 Lockwood et al.	8.25***	.20				4.78**	.13			
Prevention Focus			.04	.06	.06			.03	.04	.07
Promotion Focus			.28	.09	.30**			-.11	.05	-.20*
Participant Gender ^a			.62	.17	.33**			-.34	.11	-.30**
	Conservation ^b					Openness to Change				
	F	R ²	B	SE B	β	F	R ²	B	SE B	β
	4.46*	.08				6.2**	.11			
Prevention Focus			.12	.05	.25*			-.14	.05	-.28**
Promotion Focus			-.15	.07	-.22*			.18	.07	.26**

Note. +*p* < .07; * *p* <= .05, ** *p* < .01, ****p* < .001; a) participant gender had no meaningful effect in the analysis with conservation or openness as criterion variable (*t* < 1), which is why the variable was eliminated from the respective analysis (the gender variable was coded 1 for women and 2 for men). b) The conservation index in Sample 4 consisted only of Conformity and Security, Tradition was excluded.

General Discussion

The present work was designed to investigate the structure of the relations between the 10 values proposed in the Schwartz value model and the two basic modes of self-regulation outlined in RFT. The obtained evidence supports the assumptions concerning the relation between human values and basic self-regulatory orientations outlined in the introductory section. In addition, the results show that the relations can be replicated using different instruments to measure basic human values and regulatory focus orientations. Results reveal that prevention-focused self-regulation is positively related to the endorsement of conservation values (security, conformity), and negatively related to values reflecting openness to change (stimulation, self-direction). Moreover, promotion-focused self-regulation was found to be positively related to the endorsement of self-enhancement values (power, achievement). Promotion-focused self-regulation was also found to be negatively related to values reflecting self-transcendence (universalism, benevolence) and (in Sample 2, 3 and 4) more modestly to conservation values (conformity and tradition). These findings support the proposed two-dimensional structure of the value system as well as fundamental assumptions of RFT regarding the characteristics of promotion- and prevention-focused self-regulation.

It is interesting to note that the present findings are largely parallel to those reported by Leikas et al. (2008) who observed that the promotion focus scale was positively related to power as well as achievement values and negatively related to universalism and tradition. They also found that the prevention focus scale was positively related to security, conformity as well as tradition values (only marginally significant) and negatively related to self-direction and stimulation. As mentioned above, Leikas et al. (2008) did not report findings considering the relationship with the higher order value sectors; therefore, our results add some new information to the relation between human values and regulatory focus.

One particularly relevant aspect of the present findings is that they help us clarify the different components that are related to prevention- and promotion-focused self-regulation. Overall, the findings support the notion that prevention-focused self-regulation is driven by the need for safety and security – which is reflected in the positive correlation with conservation values. Specifically, the need for safety and security as a driving force behind prevention-focused self-regulation could also explain the low correlations between prevention focus and the tradition value. According to the Schwartz value theory, tradition combined with conformity and security form the conservation dimension. Conformity is defined as the inclination to action and security as a focus on the stability of society, while tradition is defined as following and conserving cultural or religious customs (Schwartz, 1992). The conceptualization of security and conformity seems more closely related to the conceptualization of the prevention focus (i.e. need for safety and security) than tradition as the endorsement of the tradition value could be influenced by factors (such as religiosity) which are conceptually not closely related to the prevention focus. In Sample 4 we found that conservation is only significantly related to prevention when excluding the tradition value items. Considering the items designed to measure the tradition value, it becomes apparent that religiosity plays a key role. In the short version of the PVQ one item measures the self-denial component of tradition and one item measures the religious component of tradition. Both components reflect a submission of the self to external factors, but are often not highly inter-correlated (Schwartz, 2001). That could be an explanation for why we did not find a reliable relation between the tradition value and prevention focus, but a reliable relation between other conservation values (i.e., security and conformity) and prevention focus. In addition, in all samples we found no significant correlation between security and tradition, and only modest correlations between conformity and tradition. Moreover, the findings corroborate the notion that prevention-focused self-regulation is driven by a defensive orientation directed at the maintenance of the status quo – which is reflected in the negative correlation with openness to change values.

Also, the data indicate that promotion-focused self-regulation is driven by a need for self-actualization and personal growth – which is reflected in the positive correlation with self-enhancement values. Interestingly, the correlation between achievement value and promotion focus was quite high (except for Sample 1). One reason for that could be the scales used to measure human values. In Schwartz Value Survey (Sample 1) the achievement items focus on success, but also on feeling competent and being hard-working, whereas in the PVQ (Sample 2 and 3) the achievement items refer exclusively on being successful and admired for own achievements. The PVQ items seem more closely related to the conceptualization of the promotion focus than the SVS items as people could also be hard-working to achieve goals related to a prevention focus. In addition, looking at descriptive data the variance on achievement values was lower in Sample 1 compared to the other samples. One initial hint that the item content might have an influence is that only the SVS item “SUCCESSFUL (achieving

goals)” was positively correlated with promotion-focus self-regulation. Finally, the observed evidence bolsters the argument that promotion-focused self-regulation is driven by an individualistic orientation of goal pursuit, reflecting a strive for power, dominance, and status – which is also reflected in the negative correlation with self-transcendence values (which represent a concern with the welfare of others). The negative relation between promotion focus and self-transcendence was not significant in several cases, which could be due to social desirability issues: Benevolence (caring for others) and universalism (equal opportunities for all) are highly socially desirable, which is also indicated by a generally strong endorsement (with little variation in participants’ responses) of the corresponding items (benevolence and universalism are the values with the highest mean scores).

In combination, the current findings strongly support the notion entailed in RFT that the two modes of self-regulation represent largely independent dimensions.

Interestingly, the (modest) relation between promotion-focused self-regulation and the openness-conservation dimension of the value system (as observed in Sample 2 & 4) reveals that this mode of self-regulation may not be perfectly unidimensional in terms of the values it is associated with. Compared to the prevention-focused self-regulation – which seems to be unidimensional in this respect – promotion-focused self-regulation may be better characterized as multifaceted and more complex in its relation to human values. Considering the conceptualization of the respective constructs, this relation is not too surprising as both promotion-focused self-regulation and openness to change values refer to initiative (taking action) and autonomy.

To obtain a more general picture of the relation between basic human values and regulatory focus strategies one goal of this study was to provide further evidence to support the proposed relation between human values and regulatory focus complementing the work of Leikas et al. (2008) with data obtained with other widely used instruments. In general, based on our results, we conclude that our basic proposed assumption – i.e. promotion-focus strategy associated with the self-enhancement-self-transcendence dimension and prevention-focus strategy with the openness-conservation dimension – emerge irrespective of the instruments used. On the level of specific values, some relations differed in magnitude or were not statistically significant. These differences could be based on the item content. For example, as mentioned above, in Sample 1 we used the Schwartz Value Survey and observed some minor peculiarities in the results, although the overall pattern of relations resembles that found in the other samples. One reason for the peculiarities could be the formulation and content of the items. In the SVS participants are presented with keywords associated with the corresponding value (e.g. OBEDIENT: dutiful, meeting obligations), while in the PVQ a person is described (e.g. It is important to him to follow the rules at all times, even if no one is watching) and participants rate how similar they consider themselves to that person. Therefore, the PVQ items translate human

values from the abstract goal level into a concrete description of behavior which is considered a manifestation of the respective value. This difference in the item formulation might influence the response behavior. Moreover, some items in the PVQ and items in some regulatory focus instruments have quite similar content (e.g. mentioning preventing physical harm). Considering the three different regulatory focus instruments used in Sample 3, overall the relation with higher order dimensions and the results of the regression analyses are in line with the proposed relations. However, it is worth noting that some relations were more or less pronounced depending on the specific instruments used to assess regulatory foci. We assume that these differences are essentially due to the formulation and content of certain items. However, we want to emphasize that overall the data show parallel relations irrespective of the instruments used.

Considering the meaningful relations between the higher order value dimensions and the two modes of self-regulation proposed in RFT, it is important to acknowledge the distinctive characteristics of human values and regulatory foci. Several aspects distinguish human values and self-regulatory orientations. First, values are conceptualized as transsituationally stable constructs, whereas self-regulatory orientations are defined as malleable and likely to vary as a function of situational influences. Second, Schwartz and colleagues (cf. Schwartz & Bardi, 2001) emphasized that there is a striking cultural invariance in value hierarchies (note that the endorsement of values differs substantially across cultures; however, the value *hierarchy* was found to be largely invariant across cultures). Specifically, it has been found that security values are more important than power values in all societies around the world where the Schwartz value model has been empirically tested (Schwartz & Bardi, 2001). In contrast, there is a significant cultural variation in the hierarchical ordering of the two self-regulatory modes. Specifically, prevention-focused information appears to be more important for behaviour than promotion-focused information in interdependent cultures, whereas the reverse is true in independent cultures (cf. Lee et al., 2000; Lockwood et al., 2005; for a similar argument regarding avoidance versus approach goals, see Elliot, Chirkov, Kim, & Sheldon, 2001). Based on these findings it seems that desirable goals are quite similar across cultures, but the key strategies to pursue goals differ between cultures.

Third, the Schwartz value model and RFT differ in the emphasis that is put on the relevance of *abstract desirable end-states* versus specific *strategies* of goal attainment. One implication of this differential emphasis is that the value model refers exclusively to standards and end-states that are positive in character, whereas the goals and standards discussed in RFT represent positive as well as negative end-states and related strategic means and behavioural orientations.

As briefly mentioned in the introduction, the analysis of the associations between individual differences in self-regulatory orientations and other psychological phenomena is particularly worthwhile if one is interested in a better understanding of the self-regulatory character of the respective psychological

phenomena (Carver, 2006). In the present case, it seems fair to conclude that the reported data provide substantive information with respect to the self-regulatory character of the human values outlined in the Schwartz value model. Thus, the fact that the present study provides empirical evidence documenting the prevention-focused character of conservation values and the promotion-focused character of self-enhancement values is a meaningful contribution to the field of research on human values. Following a similar logic, the reported data also contribute to our understanding of the nature of promotion- and prevention-focused self-regulation as already discussed above. Furthermore, as mentioned in the introduction, examining the relation between human values and regulatory strategies could help to develop a more comprehensive understanding of human motivation. Both theories focus on specific aspects of human motivation. However, that does not imply that they are competing theories, instead they can complement each other. Considering the Rubicon model of action phases (Heckhausen & Gollwitzer, 1987), human values and regulatory foci refer to different phases. Values as abstract goals or guidelines are most likely a crucial element of the predecisional motivational phase when individuals consider which outcomes they want to achieve. In contrast, self-regulatory orientations are most relevant in the volition phases, since they are important concerning volitional goal striving processes. To sum up, while the Schwartz value model refers to *what* people want to achieve in life, but not to *how* to achieve them, RFT refers to *how* people achieve their goals, but not *what* their goals are. Therefore, integrating both theories contributes to a more comprehensive understanding of human motivation.

Values and Regulatory Fit

An interesting implication of the present findings comes to mind when considering the concept of “regulatory fit” proposed in RFT (Shah, Higgins, & Friedman, 1998; Higgins, 2000). Regulatory fit has been defined as a state where individuals engage in a behavior under conditions where their goal orientation is sustained by the manner of their goal pursuit (e.g., when available means and strategies fit with the relevant goal). According to the regulatory fit hypothesis, motivation and performance are greater when the dispositional goal orientation, the situationally relevant goal, task incentives, and means of goal attainment all share the same regulatory focus than when they do not. Taking into account that human values represent abstract goals (Schwartz, 1992) and given that these abstract goals are systematically related to specific self-regulatory orientations, a set of intriguing hypotheses can be derived with respect to the regulatory fit principle. For example, one can argue that individuals who pursue values that fit their regulatory focus should feel better and more motivated and are probably more successful in attaining the goals related to the relevant values – compared to individuals who pursue values that do *not* fit their regulatory focus. Given the cross-cultural differences in habitual self-regulatory orientations, these implications seem particularly intriguing in the intercultural context.

Conclusion

In sum, the current findings contribute to our understanding of self-regulatory orientations and human values and enrich our knowledge of both of these basic motivational constructs. As such, the current study opens a new avenue of research for studying human motivation that incorporates the crucial impact of self-regulatory orientations and human values. Given the observed relations between these basic constructs it seems most promising to address their interplay in determining individuals' motivation to engage and persist in activities in a next generation of research.

References

- Barnea, M., & Schwartz, S. H. (1998). Values and voting. *Political Psychology, 19*, 17–40.
- Baron, H. (1996). Strengths and limitations of ipsative measurement. *Journal of Occupational and Organizational Psychology, 69*, 49–56.
- Caprara, G. V., Schwartz, S., Capanna, C., Vecchione, M., & Barbaranelli, C. (2006). Personality and politics: Values, traits, and political choice. *Political Psychology, 27*, 1–28.
- Carver, C. S. (2006). Approach, avoidance, and the self-regulation of affect and action. *Motivation and Emotion, 30*, 105–110.
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Cohrs, J. C., Moschner, B., Maes, J., Kielmann, S. (2005). The motivational bases of right-wing authoritarianism and social dominance orientation: Relations to values and attitudes in the aftermath of September 11, 2001. *Personality and Social Psychology Bulletin, 31*, 1425–1434.
- Elliot, A. J., Chirkov, V. I., Kim, Y., & Sheldon, K. M. (2001). A cross-cultural analysis of avoidance (relative to approach) personal goals. *Psychological Science, 12*, 505–510.
- Elliot, A. J., & Covington, M. V. (2001). Approach and avoidance motivation. *Educational Psychology Review, 13*, 73–92.
- European Social Survey (2010). *EES data round 3 (2006)*. Retrieved January 20, 2010, from <http://ess.nsd.uib.no/ess/round3/download.html>
- Gordon, L. V. (1976). *Survey of Interpersonal Values: Revised Manual*. Chicago: Science Research Associates.
- Guimond, S., Dambun, M., Michinov, N., & Duarte, S. (2003). Does social dominance generate prejudice? Integrating individual and contextual determinants of intergroup cognitions. *Journal of Personality and Social Psychology, 84*, 697–721.
- Heckhausen, H., & Gollwitzer, P. M. (1987). Thought contents and cognitive functioning in motivational versus volitional states of mind. *Motivation and emotion, 11*(2), 101–120.
- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist, 52*, 1280–1300.
- Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology*, (Vol. 30, pp. 1–46). San Diego, CA: Academic Press.
- Higgins, E. T. (2000). Making a good decision: Value from fit. *American Psychologist, 55*, 1217–1230.
- 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*, 3–23.
- Higgins, E. T., & Spiegel, S. (2004). Promotion and prevention strategies for self-regulation: A motivated cognition perspective. In R. F. Baumeister & C. Vohs (Eds.), *Handbook of self-regulation* (pp. 171–187). New York: Guilford.
- Hinz, A., Brähler, E., Schmidt, P., & Albani, C. (2005). Investigating the circumplex structure of the Portrait Values Questionnaire (PVQ). *Journal of Individual Differences, 26*, 185–193.

- Ineichen, S., Florack, A., Keller, J., & Leder, S. (2010). *How to measure regulatory focus: Validation of a self-report measure*. Unpublished manuscript. Zeppelin University Friedrichshafen, Germany.
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin*, *129*, 339–375.
- Kark, R., & van Dijk, D. (2007). Motivation to lead, motivation to follow: The role of the self-regulatory focus in leadership processes. *Academy of Management Review*, *32*, 500–528.
- Keller, J. (2008). On the development of regulatory focus: The role of parenting styles. *European Journal of Social Psychology*, *38*, 354–364.
- Keller, J., & Bless, H. (2008). When positive and negative expectancies disrupt performance: Regulatory focus as a catalyst. *European Journal of Social Psychology*, *38*, 187–212.
- Keller, J., Mayo, R., Greifeneder, R., & Pfattheicher, S. (2015). Regulatory focus and generalized trust: The impact of prevention-focused self-regulation on trusting others. *Frontiers in Psychology*, Article 254.
- Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review*, *110*, 265–284.
- Lee, A. Y., Aaker, J. L., & Gardner, W. L. (2000). The pleasures and pains of distinct self-construals: The role of interdependence in regulatory focus. *Journal of Personality and Social Psychology*, *65*, 248–260.
- Leikas, S., Lönnqvist, J. E., Verkasalo, M., & Lindeman, M. (2008). Regulatory focus systems and personal values. *European Journal of Social Psychology*, *39*, 415–429.
- Liberman, N., Idson, L. C., Camacho, C. J., & Higgins, E. T. (1999). Promotion and prevention choices between stability and change. *Journal of Personality and Social Psychology*, *77*, 1135–1145.
- Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive and negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, *83*, 854–864.
- Lockwood, P., Marshall, T. C., & Sadler, P. (2005). Promoting success or preventing failure: Cultural differences in motivation by positive and negative role models. *Personality and Social Psychology Bulletin*, *31*, 379–392.
- Lockwood, P., Sadler, P., Fyman, K., & Tuck, S. (2004). To do or not to do: Using positive and negative role models to harness motivation. *Social Cognition*, *22*, 422–450.
- Markus, H., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and involvement. *Psychological Review*, *98*, 224–253.
- Ouschan, L., Boldero, J. M., Kashima, Y., & Wakimoto, R. (2007). Regulatory focus strategies scale: A measure of individual differences in the endorsement of regulatory strategies. *Asian Journal of Social Psychology*, *10*, 243–257.
- Roccas, S., Sagiv, L., Schwartz, S. H., & Knafo, A. (2002). The big five personality factors and personal values. *Personality and Social Psychology Bulletin*, *28*, 789–801.
- Rohan, M. J., & Zanna, M. P. (1996). The "products of socialization": A discussion of self-regulatory strategies and value systems. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The psychology of values. The Ontario symposium* (vol. 8, pp. 279–292). Hillsdale, NJ: Lawrence Erlbaum.
- Rokeach, M. (1973). *The nature of human values*. New York: Free Press.
- Sagiv, L., & Schwartz, S. H. (1995). Value priorities and readiness for out-group social contact. *Journal of Personality and Social Psychology*, *69*, 437–448.
- Sassenberg, K., Jonas, K. J., Shah, J. Y., & Brazy, P. C. (2006). Why some groups just feel better: The regulatory fit of group power. *Journal of Personality and Social Psychology*, *92*, 249–267.
- Saville, P., & Wilson, E. (1991). The reliability and validity of normative and ipsative approaches in the measurement of personality. *Journal of Occupational Psychology*, *64*, 219–238.
- Schmidt, P., Bamberg, S., Davidov, E., Herrmann, J., & Schwartz, S. H. (2007). Die Messung von Werten mit dem „Portraits Value Questionnaire“ [The Measurement of Values with the «Portrait Value Questionnaire»]. *Zeitschrift für Sozialpsychologie*, *38*, 261–275.

- Schmitt, M., Schwartz, S. H., Steyer, R., & Schmitt, T. (1993). Measurement models for the Schwartz Values Inventory. *European Journal of Psychological Assessment*, 9, 107–121.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (vol. 25, pp. 1–65). New York: Academic Press.
- Schwartz, S. H. (1996). Value priorities and behavior: Applying of theory of integrated value systems. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The Psychology of Values: The Ontario Symposium*, vol. 8 (pp. 1–24). Hillsdale, NJ: Erlbaum.
- Schwartz, S. (2001). *European Social Survey Core Questionnaire Development – Chapter 7: A Proposal for Measuring Value Orientations across Nations*. London: European Social Survey, City University London.
- Schwartz, S. H. (2006). Measuring changing value orientations across nations. In R. Jowell, C. Roberts, R. Fitzgerald, & E. Gillian (Eds.), *Measuring attitudes cross-nationally: Lessons from the European Social Survey*. London: Sage.
- Schwartz, S. H. (2007). Value orientations: Measurement, antecedents and consequences across nations. In R. Jowell, C. Roberts, R. Fitzgerald, & G., Eva (Eds.), *Measuring attitudes cross-nationally: Lessons from the European Social Survey* (pp. 169–203). London, UK: Sage.
- Schwartz, S. H., & Bardi, A. (2001). Value hierarchies across cultures: Taking a similarities perspective. *Journal of Cross-Cultural Psychology*, 32, 268–290.
- Schwartz, S. H., & Bilsky, W. (1987). Toward a universal psychological structure of human values. *Journal of Personality and Social Psychology*, 53, 550–562.
- Schwartz, S. H., & Huismans, S. (1995). Value priorities and religiosity in four Western religions. *Social Psychology Quarterly*, 58, 88–107.
- Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., Harris, M., & Owens, V. (2001). Extending the cross-cultural validity of the theory of basic human values with a different method of measurement. *Journal of Cross-Cultural Psychology*, 32, 519–542.
- Schwartz, S. H., & Rubel, T. (2005). Sex differences in value priorities: Cross-cultural and multimethod studies. *Journal of Personality and Social Psychology*, 89, 1010–1028.
- Seligman, C., Olson, J. M., & Zanna, M. P. (1996). *The psychology of values: The Ontario symposium* (vol. 8) Hillsdale, NJ: Lawrence Erlbaum.
- Semin, G. R., Higgins, T., de Montes, L. G., Estourget, Y., & Valencia, J. F. (2005). Linguistic signatures of regulatory focus: how abstraction fits promotion more than prevention. *Journal of personality and social psychology*, 89(1), 36.
- Shah, J., Higgins, E. T., & Friedman, R. S. (1998). Performance incentives and means: How regulatory focus influences goal attainment. *Journal of Personality and Social Psychology*, 74, 285–293.
- Summerville, A., & Roese, N. J. (2008). Self-report measures of individual differences in regulatory focus: A cautionary note. *Journal of Research in Personality*, 42, 247–254.
- Uskul, A. K., Keller, J., & Oyserman, D. (2008). Regulatory fit and health behavior. *Psychology and Health*, 23, 327–346.
- Zuckerman, M. (1994). *Behavioral expressions and biosocial bases of sensation seeking*. New York, NY: Cambridge University Press.

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