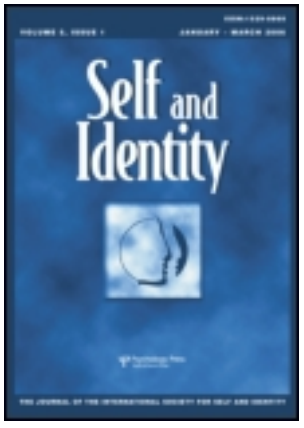

Self and Identity
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/psai20

Approach/Avoidance Orientations Affect Self-construal and Identification with In-group

Ravit Nussinson [a], Michael Häfner [b], Beate Seibt [c], Fritz Strack [d] & Yaacov Trope [e]

[a] Department of Education and Psychology, The Open University of Israel, Raanana, Israel

[b] Department of Social and Organizational Psychology, Utrecht University, Utrecht, The Netherlands

[c] Centre for Social Research and Intervention(CIS), ISCTE-IUL, Lisbon, Portugal

[d] Department of Psychology II, University of Würzburg, Würzburg, Germany

[e] Department of Psychology, New York University, New York, NY, USA

Version of record first published: 15 Sep 2011.

To cite this article: Ravit Nussinson, Michael Häfner, Beate Seibt, Fritz Strack & Yaacov Trope (2012): Approach/Avoidance Orientations Affect Self-construal and Identification with In-group, Self and Identity, 11:2, 255-272

To link to this article: http://dx.doi.org/10.1080/15298868.2011.559044

Self and Identity, 11: 255–272, 2012
http://www.psypress.com/sai
ISSN: 1529-8868 print/1529-8876 online
http://dx.doi.org/10.1080/15298868.2011.559044

Psychology Press
Taylor & Francis Group

Approach/Avoidance Orientations Affect Self-construal and Identification with In-group

RAVIT NUSSINSON

Department of Education and Psychology, The Open University of Israel, Raanana, Israel

MICHAEL HÄFNER

Department of Social and Organizational Psychology, Utrecht University, Utrecht, The Netherlands

BEATE SEIBT

Centre for Social Research and Intervention(CIS), ISCTE-IUL, Lisbon, Portugal

FRITZ STRACK

Department of Psychology II, University of Würzburg, Würzburg, Germany

YAACOV TROPE

Department of Psychology, New York University, New York, NY, USA

Approach and avoidance are two basic motivational orientations. Their activation influences cognitive and perceptive processes: Previous work suggests that an approach orientation instigates a focus on larger units as compared to avoidance. Study 1 confirms this assumption using a paradigm that more directly taps a person's tendency to represent objects as belonging to small or large units than prior studies. It was further predicted that the self should also be represented as belonging to larger units, and hence be more interdependent under approach than under avoidance. Study 2 supports this

Received 12 April 2010; accepted 21 January 2011; first published online 15 September 2011.

The research was carried out at the Department of Psychology, The Open University of Israel; at the Department of Psychology, New York University; and at the Department of Social and Organizational Psychology, Utrecht University. We gratefully acknowledge support for this research by The Open University of Israel's Research Fund awarded to the first author and a postdoc grant from the German Science Foundation (DFG SE 1121/3–1) to the third author.

We thank Ido Bar-On, Liat Ben-Ari, Shaked Gilboa, Tina Langer, Sarit Lishansky, Maya Shalem, and Hani Weinroth for their help in data collection and Rinat Gil for her help with statistical analysis. We also thank Bettina Hannover, Gal Harpaz Gorodeisky, Amir Rosenmann, Diederik Stapel, Sonia Roccas, Peter B. Smith, Noga Sverdlik, and Sven Waldzus for invaluable advice and discussions regarding the contents of this article. Ravit Nussinson has previously published under the name Ravit Levy-Sadot.

Correspondence should be addressed to: Ravit Nussinson, Department of Education and Psychology, The Open University of Israel, Raanana, 43107, Israel. E-mail: ravitnu@openu.ac.il

prediction. As a consequence of this focus on belonging to larger units, it was finally predicted that approach results in a stronger identification with one's in-group than avoidance. Studies 3 and 4 support that prediction.

Keywords: Approach/avoidance; Processing style; Global/local; Self-construal; Identification.

Motivated behavior can be categorized most generally as either approach or avoidance behavior (Gray, 1990; Lewin, 1935). Wanting to excel in an exam, having an impulse to eat a piece of a delicious cake, feeling the urge to embrace a good friend, and pursuing the goal of winning the soccer world cup all manifest an orientation of approach, or an effort to decrease the distance to a positive object or goal. Likewise, wanting to avoid failing an exam, having an impulse to back away from a cockroach, ignoring the presence of someone we can't stand, or having the goal of not losing the soccer world cup all demonstrate an orientation of avoidance, or an attempt to increase the distance to a negative object or goal. Apart from the direct behavioral/motivational effects of these motivational orientations, recent research has demonstrated that approach and avoidance motivation also have physiological, cognitive, emotional, and motoric effects (Strack & Deutsch, 2004). Up to now, most research has focused on the non-social consequences of approach and avoidance motivation (e.g., Förster & Strack, 1996; Friedman & Förster, 2000). However, given their fundamental nature, it seems reasonable to assume that these states would have effects in various domains, including social relations and the self (see Nussinson, Seibt, Häfner, & Strack, 2010). The present research thus investigated step by step how approach and avoidance motivations influence the way people conceive of themselves, and how they identify with their in-group.

Past research has conceptualized motivational orientations of approach and avoidance as a mere readiness to decrease or increase the *physical* distance between oneself and an aspect of the environment (Bargh, 1997; Cacioppo & Berntson, 1994; Carver & Scheier, 1990; Gray, 1990; Lang, 1995; Sutton & Davidson, 1997). This change in distance may be achieved "through physical locomotion, instrumental action, consumption or the imagination thereof," under approach, and by moving away from the target or by causing it to be removed, under avoidance (Strack & Deutsch, 2004, p. 231). In line with this reasoning, Chen and Bargh (1999) found that participants reacted faster by pulling a lever (an approach behavior) when presented with positive words as well as faster by pushing a lever (an avoidance behavior) when presented with negative words.

Over and above these motoric-behavioral effects, and relying on the rationale of the cognitive tuning approach (Schwarz, 1990, 2001), recent research has established the idea that approach and avoidance orientations also affect the cognitive processing style that people use. In particular, as part of their GLOMO (Global vs. LOcal processing MOdel), Förster, Liberman, and Kuschel (2008) suggested that approach enhances the use of a global processing style. This in turn fosters the use of broad, inclusive categories and a focus on larger units. Avoidance, in contrast, is assumed to instigate the use of a local processing style, which fosters the use of narrow, exclusive categories and a focus on individual constituents (Tucker & Williamson, 1984). In line with this reasoning, Friedman and Förster (2000, Study 6) have found that participants rated atypical exemplars as better members of a category when performing an approach motor action than when performing an avoidance motor action. For example, camels were judged to be more typical vehicles under approach

than under avoidance. This suggests that approach promotes the use of broader, more inclusive categories. Furthermore, findings by Förster, Friedman, Özelsel, and Denzler (2006, Studies 2–4) and by Friedman and Förster (2000, Study 5) suggested that when under avoidance things are conceptualized in isolation, with activation spreading only toward the representations with the highest a priori accessibility, whereas when under approach things are conceptualized in a more related manner, with activation spreading also toward remotely associated representations. Additionally, Förster and Higgins (2005) and Förster et al. (2006) have shown that a promotion regulatory focus (associated with an approach orientation), and an approach orientation in and of itself, lead to the use of a more global perceptual focus, a focus on the larger unit. Such a focus is associated with a broader conceptual scope (see Derryberry & Tucker, 1994). In contrast, a prevention regulatory focus (associated with an avoidance orientation) and avoidance orientation were found to instigate the use of a more local perceptual focus, a focus on the constituent parts, associated with a narrower conceptual scope. Thus, quite literally, individuals under approach tend to see the forest whereas those under avoidance see the trees.

To summarize, relative to an avoidance orientation, an approach orientation has been shown to lead to: (1) a more lenient criterion for accepting atypical exemplars as category members; (2) representing things in a more related, less isolated manner; and (3) a more global perceptual focus. These findings suggest that approach goes with a tendency to represent items as belonging to larger conceptual units as compared to avoidance (e.g., a door is represented as part of a house when under approach but in isolation, as a door, or in terms of its constituents when under avoidance). What is missing, however, is a more direct test of this notion. The acceptance of atypical exemplars as members of a category is an indication that it might in fact be the case that approach fosters the use of more inclusive units. However, it is not a direct test of this hypothesis. This is because the task *starts* with a category and has participants determine the fit of various exemplars. So, the results might also reflect that individuals under approach are less influenced by considerations about the normatively correct answer. Important for the present research, however, was whether upon encountering an item, individuals see it as belonging to a bigger unit. Accordingly, the first goal of this research was to test whether when under an approach orientation people used broader, more inclusive units when categorizing items than when under an avoidance orientation.

We propose that if individuals under approach activate larger units when representing their environment than under avoidance this should have implications for people's most prominent category: the self. In particular, we suggest that when under approach, self-construal should also involve the use of larger units (i.e., groups or relationships to which one belongs as opposed to specific personality traits) and, hence, become relatively more social and interdependent (Brewer & Gardner, 1996). In other words, the accessibility of social aspects of the self, where the self is construed as part of a larger unit, such as a relationship or a group, should be higher under approach, whereas the accessibility of specific personal traits and characteristics that distinguish the self from others, should be higher under avoidance. Thus, just like focusing on the forest rather than on the tree, or on the house rather than on the doorknob, we proposed that when under approach the self would be construed in terms of the social group or unit to which the person belongs rather than on the individual self and on its specific attributes. The reverse should be true for individuals under avoidance. It was the second goal of the present research to put this reasoning to an experimental test.

According to Brewer and Gardner (1996) there are three levels of self-construal: the personal, the relational and the collective. Personal construal defines the self in terms of individual attributes. Relational and collective construals are both social, but whereas the first contains aspects of the self that define it as belonging to other individuals, the latter contains aspects that define it as belonging to a group. Self-construals have been shown to shift as a function of both cultural and situational variables. For example, Trafimow, Triandis, and Goto (1991) have shown that North Americans hold more personal self-construals but less collective self-construals than Chinese. They also primed participants with short stories in which the hero considered either the benefits his actions hold to himself—independent prime—or the benefits they hold to his family—interdependent prime. Both North American and Chinese participants provided a higher proportion of social statements after the interdependent than after the independent prime (see Gardner, Gabriel, & Lee, 1999, for similar findings). Brewer and Gardner (1996) showed that priming participants with the pronoun "we" makes them shift toward more social aspects of self-construal, with the context influencing whether these are more relational or more collective. In a similar vein, we expected that by promoting a tendency to represent the self as belonging to larger units, an approach orientation would shift self-construal to one of a more social, interdependent nature. This prediction may seem at odds with findings by Aaker and Lee (2001) and by Lee, Aaker, and Gardner (2000), who have shown that an interdependent self-construal leads to more emphasis on prevention-focused information, and an independent self-construal leads to more emphasis on promotion-focused information. We shall discuss these findings with respect to our hypothesis in the general discussion.

The third goal of the proposed research was to test the consequence of representing the self as part of larger units for identification with a salient in-group. According to Turner, Hogg, Oakes, Reicher, and Wetherell (1987), in-group identification is the degree to which individuals define or see themselves as group members. In a similar vein, although multidimensional views of identification differ with respect to the dimensions of identification that they propose, they agree about the prevalence of a cognitive dimension, namely, the degree to which one views the group as part of who one is (Cameron, 2004; Ellemers, Kortekaas, & Ouwerkerk, 1999; Hinkle, Taylor, Fox-Cardamone, & Crook, 1989; Jackson, 2002; Roccas, Sagiv, Schwartz, Halevy, & Eidelson, 2008). If individuals under approach represent themselves to a greater extent as belonging to larger units than under avoidance, then they should identify more with a salient in-group under approach. Indeed, collectivist values that are associated with an interdependent self-construal are also associated with higher identification with the in-group (Smith, Giannini, Helkama, Maczynski, & Stumpf, 2005; see also Chen, Brockner, & Chen, 2002; Chen, Brockner, & Katz, 1998). Hence, we predicted that an approach orientation would lead to identifying more with a salient in-group.

Overview of the Present Research

To summarize, the present research aimed to investigate: (i) whether under an approach orientation broader, more inclusive units are used when categorizing items than under an avoidance orientation; (ii) whether, as might then be expected, approach is associated with a more interdependent self-concept; and (iii) whether individuals under approach identify more with a salient in-group than under avoidance. Four studies were designed to test these assumptions.

Study 1 examined the effect of approach and avoidance orientation on category breadth in general. It was predicted that in a situation where individuals can freely choose the number of units or categories that they use when grouping a fixed number of objects, those under an approach orientation will use fewer—and hence larger, more inclusive—units than those under an avoidance orientation. Study 2 examined the effect of approach and avoidance on self-construal as measured by the Twenty-Statements Test (Kuhn & McPartland, 1954). It was predicted that when describing themselves under approach, people would use a higher proportion of self-descriptions that involve social categories (relational and collective construals) as compared to when under avoidance. Study 3 examined the predicted effect of the orientations on the degree of identification of participants with their in-group using the Inclusion of In-group in the Self Scale (IIS; Tropp & Wright, 2001) and the Inclusion of Self in the In-group Scale developed by Schubert and Otten (2002). We expected identification with the in-group to be higher under approach than under avoidance. Study 4 examined the same hypothesis with a different manipulation of motivational orientation. In Studies 1 and 4, participants were induced into an approach or an avoidance motivation orientation by assuming a certain arm position (Cacioppo, Priester, & Berntson, 1993; Förster & Strack, 1997, 1998; Neumann & Strack, 2000; Priester, Cacioppo, & Petty, 1996). In Studies 2 and 3, participants, instead, solved an approach or an avoidance maze (Friedman & Förster, 2001, 2005).

There are some indications that self-construal, and degree of identification with an in-group may vary with gender (Cross & Madson, 1997; Gabriel & Gardner, 1999; Gardner, Gabriel, & Hochschild, 2002; McGuire & McGuire, 1982; Rosenberg, 1989). Thus, in Studies 2–4, male and female participants were evenly distributed across conditions.

Study 1: Approach/Avoidance Motor Actions and Unit Size

In this first study, we examined the hypothesis that when induced into an approach orientation, individuals would use larger, more inclusive units for representing information than when induced into an avoidance orientation. To test this assumption, participants classified names of objects into groups while either under approach or under avoidance. If individuals use larger units under approach, then they should group a fixed number of items into fewer groups in arm flexion than in arm extension. To induce the orientations, participants completed the classification task while assuming either an arm-flexion position (approach) or an arm-extension position (avoidance). Arm flexion involves the activation of the arm flexor muscle by slightly pressing the palm against the underside of a table. It has been repeatedly shown to induce an approach motivation orientation (Cacioppo et al., 1993; Förster & Strack, 1997, 1998; see also Seibt, Neumann, Nussinson, & Strack, 2008). Arm extension involves the activation of the arm extensor muscle by slightly pressing the palm against the table top, and has been shown to induce an avoidance motivation orientation. Because affective states affect category breadth (Isen & Daubman, 1984; Murray, Sujan, Hirt, & Sujan, 1990), the participants' affective state was measured to control for affective differences between the two conditions.

Method

Participants and design. One hundred forty-eight New York University students participated in the experiment, either for course credit or for $8 payment. Half the

participants assumed an arm-flexion position (activating an approach orientation) and half assumed an arm-extension position (activating an avoidance orientation). Five participants who failed to follow the instructions were excluded from the analysis leaving a sample of 143 (33 were men).

Materials. The experimental task, adapted from Liberman, Sagristano, and Trope (2002), was administered as a two-page questionnaire in which participants were asked to imagine themselves in two different scenarios. Each page detailed one scenario and 38 related objects. In one scenario, participants were asked to: ''Imagine that you are having a yard sale'' (objects were chairs, roller blades, sweaters, etc.). In a second scenario, participants were requested to: ''Imagine that a friend of yours is coming for a visit. This friend has never been in New York, and she asks you to show her some interesting places'' (objects were the 59th Street Bridge, the Metropolitan Opera, the West Village, etc.)

The instructions for each of the scenarios read: ''Below you will find a list of [items that you will be selling]/[places in NY]. Please take a look at these [items]/[places] and place them into groups by writing items that belong together next to each other on the right. Please make sure to include every [item]/[place]. Additionally please do not overlap, that is, please place each [item]/[place] in only one group.''

Procedure. Participants were recruited for a study on ''intuition'' and they were run individually. The cover story (presented on the computer screen) read that the study examined the relationship between hemispheric activation and information processing, and that the arm position was a new method for activating the brain hemispheres (see Friedman & Förster, 2000). Participants further read that they were to complete different tasks concerning intuitive information processing and were then shown the appropriate arm position: arm flexion or arm extension. Arm flexion involved lightly pressing the palm upward against the bottom of the table, keeping the elbow bent at a right angle and thus, activating the arm flexor muscle (associated with approach motor action). Arm extension involved lightly pressing the palm downward against the top of the table, keeping the elbow straight, and thus activating the arm extensor muscle (associated with an avoidance motor action). Next, participants were introduced to the grouping task, which was presented as ''the first information-processing task,'' when, in effect, this was the only task they were about to complete. Participants assumed the assigned arm position with their non-dominant arm during the entire task except for in-between the scenarios. For some of the participants, the yard-sale scenario was followed by the NYC scenario and for others the order of the scenarios was reversed.[1]

To control for affective differences between the conditions, after completing the grouping task, participants completed the Positive and Negative Affective Scale (PANAS; Watson, Clark, & Tellegen, 1988), which assesses current affect with 10 positive adjectives and 10 negative adjectives on 5-point Likert scales. Furthermore, participants were asked to rate: ''How successful were you in keeping the tension in your muscle while you were grouping the items?'' on a Likert scale from 1 (*not at all successful*) to 10 (*completely successful*). The final question was an open-ended probe for suspicions regarding the cover story.[2] No hypothesis-consistent suspicions were expressed. After completing the post-task survey, participants were debriefed and were compensated for their participation.

Results and Discussion

The dependent variable was the total number of groups into which participants classified the objects of both scenarios. To test our prediction, we conducted a 2 (Arm Position) × 2 (Scenario) × 2 (Order) analysis of variance (ANOVA) on the number of categories used. Consistent with our prediction, this analysis only yielded a main effect of Arm Position: Participants who grouped the items in an arm-flexion position used fewer categories than participants who grouped the items in an arm-extension position, $F(1, 139) = 5.16$, $p < .03$, $\eta^2 = .04$ ($M_{\text{flexion}} = 13.31$, $M_{\text{extension}} = 14.45$).

Neither participants' positive PANAS score nor their negative PANAS score differed between arm positions, $ps > .27$. Finally, success in keeping the tension in the muscle was high ($M = 8.48$) and similar in both conditions, $t(141) < 1$.

The results of Study 1 support the hypothesis that approach instigates the use of larger units in representing the environment than avoidance. Study 2 examined the implications of this effect for self-construal.

Study 2: Approach/Avoidance Cues and Self-construal

We proposed that when under approach people would represent stimuli using larger, more inclusive units than when under avoidance. This implies the construal of the self in relatively more social terms (groups and relationships) as opposed to more personal terms (traits and characteristics) under approach than under avoidance.

In order to examine the hypothesis that subtle manipulations of approach/avoidance motivations also affect self-construal, we asked participants to complete the Twenty Statements Test (TST; Kuhn & McPartland, 1954). The TST was used to assess the proportion of self-descriptions that involved interdependent categories out of the total amount of self-descriptions provided by the participant. Interdependent self-descriptions involve the use of large units because they include the self in relationships and groups (as opposed to defining it in terms of its constituent features). Thus, participants under approach were expected to produce a higher proportion of interdependent statements than those under avoidance.

Approach and avoidance were instigated using a perceptual manipulation: Participants completed a paper-and-pencil task of leading a cartoon mouse located at the center of a maze to the exit. An approach orientation was activated by having participants lead the mouse to a piece of cheese lying at the exit, and an avoidance orientation was activated by having them to lead the mouse to the mouse hole, in order to escape the danger of an owl hovering over the maze (Friedman & Förster, 2001, 2005). Immediately after solving the maze, participants completed the Twenty Statements Task.

Method

Participants and design. One hundred seventy-two students of the Open University of Israel and volunteers participated in the experiment for course credit or without compensation. Seven participants were excluded from analyses because they failed to follow instructions, leaving a sample of 165 (44 were men).

Half the participants completed the cheese maze, activating an approach orientation, and half completed the owl maze, activating an avoidance orientation. As explained in the introduction care was taken to counterbalance numbers of male and female participants in the different orientation conditions.

Materials and procedure. Participants were recruited for a study on "intuitive information processing" and they were run individually. The experimenter handed them a questionnaire. The cover story read that the study examined intuitive information processing and that participants were to complete a series of short and simple tasks, each having to do with a different type of intuitive information processing. Participants were encouraged to follow their intuitive gut response in performing each of the tasks. They were further asked to complete working on each page in turn, and to proceed to the next page only when finished with the previous one. Finally, to increase the participants' sense of privacy, they were asked to enclose the questionnaire in a sealed envelope when finished. No time limit was set for any of the tasks. The first task (the maze task) was presented as dealing with the intuitive processing of spatial information. Participants read that their task was simply to complete a maze. After completing either the cheese or the owl maze, participants read the instructions for a second task, presented as dealing with the intuitive processing of social information—the TST. They were asked to: "Please make 20 statements to answer the question 'Who am I?"' Participants were urged to answer the question in an intuitive, fast manner, and to list their answers in the order in which they came to mind. They then filled in 20 lines which were already pre-filled with "I am ... " at the beginning.

Next, participants indicated their current mood ("How do you feel right now?") by making a vertical mark on a 4.72 in (12 cm) horizontal scale with its endings marked as "*very bad*" and "*very good*." They then completed the PANAS (Watson et al., 1988). A final question was an open-ended probe for suspicion regarding the hypothesis. Participants expressed no suspicions that were relevant to our hypothesis.

Dependent variable. A judge that was blind to the experimental condition coded each of the statements provided by the participants into four coding groups (Gabriel & Gardner, 1999): (1) *Independent*: statements referring to personal qualities, attitudes, beliefs, states and traits which do not relate to other people (e.g., "I am happy"). (2) *Collective*: statements referring to membership in large groups with which one shares a common fate such as a demographic group (e.g., "I am a Muslim," "I am a student"). (3) *Relational*: statements referring to membership in small groups with which one shares a common fate such as one's family (e.g., "I am the youngest daughter in my family"), or to a relationship to which one belongs (e.g., "I am a friend of Diane"). (4) *Non-self*: (e.g., "I am almost finished with this experiment"). Then, proportions for collective and relational self-descriptors were calculated by dividing their number by the total number of relevant self-descriptors. These were summed to provide an index of interdependent self-descriptors, which served as the dependent variable.

Inter-rater reliability was assessed. A second coder rated about half the responses. The two coders agreed on 94% of these responses. In addition, a kappa statistic was calculated to control for agreement due to chance. Kappa was .89.

Results and Discussion

The number of statements provided ranged from 7 to 20, with a mean of $M = 16.6$. Consistent with the hypothesis, participants produced more interdependent self-descriptions after completing the cheese maze ($M = 0.33$) than after completing the owl maze ($M = 0.26$) (and, of course, produced more independent self-descriptions after completing the owl maze, $M = 0.74$, than after completing the cheese maze, $M = 0.67$), $t(163) = 2.08$, $p < .05$, $\eta_p^2 = .03$. Neither participants' mood nor their

positive and negative PANAS scores differed between experimental conditions: $t < 1$ for all.[3]

In sum, when under approach, individuals seemed to conceive themselves in more interdependent terms than under avoidance. In line with our hypothesis, we found that an approach motivational orientation rendered the interdependent aspects of participants' self-construal more accessible. If indeed individuals under approach represent themselves to a greater extent as belonging to larger units, then they would also identify to a greater extent with a salient in-group under approach than under avoidance (Turner et al., 1987). Studies 3 and 4 were designed to examine this hypothesis.

Study 3: Approach/Avoidance Cues and Identification with In-group

As noted, the degree to which individuals define or see themselves as group members is considered by many an important component of identification with the in-group. If, as suggested by Study 2, when under approach, participants are more lenient to construe the self as part of a larger unit, and hence as a member of a salient in-group, then the extent to which participants identify with the in-group should be higher under approach than under avoidance.

In order to measure identification with their in-group, we had participants complete two measures: (1) The Inclusion of In-group in the Self scale (IIS; Tropp & Wright, 2001), which consists of seven pictures of two increasingly overlapping, equal-size circles, labeled "Self" and "Students." Participants were asked to indicate which of the pictures best described their relationship with the group of students. (2) The Inclusion of Self in the In-group scale developed by Schubert and Otten (2002), which consists of seven pictures, each comprised of two circles, one small (labeled "self") and another large (labeled "Students"). The circles, which are separate in the first picture, gradually merge until finally, in the seventh picture, the small is included in the large. Participants indicated which of the pictures best described the extent to which they felt a part of the students' group. Half the participants filled out these measures after completing the cheese maze and half filled them out after completing the owl maze. We hypothesized that the averaged identification score of participants in the cheese condition would be higher than that of participants in the owl condition.

Method

Participants and design. Ninety-seven students of the Open University in Israel participated in the experiment for course credit. Five participants were excluded from analyses because they failed to follow instructions, leaving a sample of 92 (35 were men). Half the participants were assigned to the cheese condition and half to the owl condition. Here again, care was taken to counterbalance numbers of male and female participants in the different orientation conditions.

Materials and procedure. Participants were recruited for a study on "intuitive information processing" and they were run individually. The general procedure was identical to that of Study 2. In a first task, allegedly dealing with the intuitive processing of spatial information, participants were asked to complete either the owl or the cheese maze described in Study 2. In a second task, presented as dealing with the intuitive processing of social information, participants completed the two pictorial measures of degree of identification with the in-group: students (see above).

After completing these tasks, participants reported their current mood on a horizontal line (see Study 2) and completed the PANAS. A final question was an

open-ended probe for suspicion regarding the hypothesis. No hypothesis-consistent suspicions were expressed.

Results and Discussion

Markings of participants on the two pictorial measures were scored from 1–7 with the diagram demonstrating no overlap between the circles encoded as 1, and the diagram depicting the greatest degree of overlap, or total inclusion of the self in the in-group encoded as 7. An identification score was computed for each participant as the average of these two scores.

As expected, participants in the cheese condition ($M = 3.76$) identified more with their student in-group than participants in the owl condition ($M = 3.03$), $t(90) = 3.12$, $p < .005$, $\eta_p^2 = .10$ (see Figure 1).

Neither participants' current mood nor their negative affect score differed with condition, $t < 1$, $t(90) = 1.48$, *ns*, respectively. Positive affect score was somewhat higher for participants in the cheese maze condition, $t(90) = 1.90$, $p < .07$. When it was entered as a covariate in a regression analysis, the effect of condition remained highly significant.

Study 4: Approach/Avoidance Motor Actions and Identification with In-group

Study 4 was aimed at replicating Study 3 with a different manipulation of motivation orientation. As in Study 1, participants assumed either arm flexion or arm extension while indicating the degree of identification with their in-group.

Method

Participants and design. Seventy-five students (40 female) of Utrecht University participated in the present study, and in a number of other experiments, for course

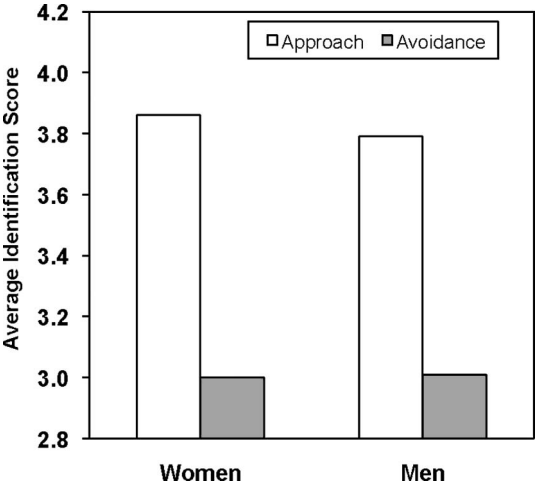

FIGURE 1 Mean identification with in-group score as a function of motivation orientation and gender (Study 3).

credit or for monetary compensation (€6). Half the participants were assigned to the arm-flexion condition, and half were assigned to the arm-extension condition. As in the previous experiments, the numbers of male and female participants in the different orientation conditions were counterbalanced.

Materials and procedure. Participants were asked to take part in a battery of studies. They were told that they would be asked about their attitudes. They were further told that we were interested in whether brain hemisphere activation influences the perceived difficulty of thinking. Therefore, participants were shown their respective arm position by the experimenter, and asked to assume that position when later prompted to do so by the instructions presented on the computer screen. Depending on experimental condition, the experimenter demonstrated either an arm flexion or an arm-extension position, as in Study 1. Once participants reached the present experiment within the whole experimental session, they were instructed to take the arm position they had been shown earlier and to keep it until they were be told to stop. Then participants were asked to think about themselves for a few seconds before answering a couple of questions. After 30 seconds, the next screen on the computer appeared, displaying the Inclusion of Self in the In-group scale (Schubert & Otten, 2002) that was used in Study 3. Participants indicated which of the seven pictures best described the extent to which they felt part of their in-group, namely students at Utrecht University. Participants indicated their response by clicking on one of seven pictures. Immediately thereafter, participants were instructed to relax their arm and to move on to the following questionnaire.

In the following questionnaire participants indicated their preferences and interests on several questions, amongst which we collected some control data. In particular, we asked participants to indicate their current mood ("How do you feel right now?") on a Likert scale from 1 (*very negative*) to 7 (*very positive*), and how difficult they experienced the task as a whole on a scale from 1 (*very easy*) to 7 (*very difficult*). Upon completion of this task, participants moved on to the next experiment. At the end of the entire experimental session, participants were debriefed, paid or given their credit and dismissed.

Results and Discussion

We compared participants' identification score in the two conditions (higher numbers indicate higher identification with the in-group). This analysis revealed a significant main effect for Arm Position, $t(148) = 2.88$, $p < .05$, $\eta_p{}^2 = .053$. As expected, participants under arm flexion indicated higher identification with their in-group ($M = 4.21$) than did participants under arm extension ($M = 3.58$).

Neither participants' current mood state nor the perceived difficulty of the task were influenced by the arm position, both ts < 1, *ns*. Thus, the results of Study 4 replicate the findings of Study 3 of more identification with the in-group under approach than under avoidance. However, whereas Study 3 induced the motivational orientations with a conceptual-procedural priming (see Friedman & Förster, 2001), Study 4 obtained the same results using an on-line, postural behavioral feedback manipulation.

General Discussion

In a series of four studies, we first studied the effect of motivational orientation on seeing items as belonging to larger units (Förster et al., 2008) and then examined

possible implications of this effect for self-construal and for identification with one's in-group. In Studies 1 and 4, motivational orientation was manipulated by instructing participants to assume a certain arm position. Prior research had shown that arm flexion triggers an approach orientation and arm extension triggers an avoidance orientation. In Studies 2 and 3, we primed participants with the concept and the procedure of approach by having them solve a maze, starting from a mouse depicted in the center to a piece of cheese lying at the exit. The concept and procedure of avoidance were primed by having participants solve the same maze but with a hovering owl threatening the mouse and a safe mouse hole at the exit instead of the cheese. Results showed that when under approach, as compared to when under avoidance, participants divided a given list of items into fewer groups, supporting the claim that when under approach, people have a tendency to represent objects as belonging to larger units and when under avoidance, they have a tendency to represent objects as belonging to smaller units (Study 1). We further found that participants described themselves in more social-interdependent (as opposed to personal-independent) terms (Study 2); and they identified to a greater extent with a salient in-group (Studies 3 and 4). In what follows, we discuss some implications of our findings, consider alternative explanations, and suggest questions for future inquiry.

Approach/Avoidance Motivational Orientations and Processing Style

Study 1 provided direct support for the notion that approach is associated with a global processing style, characterized by a focus on larger units rather than individual constituents, as compared to avoidance. Study 2 provided additional support for this idea as applied to the self-concept. Thus, the present studies contribute to the growing body of research suggesting that the activation of approach and avoidance orientations results in the activation of two distinct processing styles. Previous findings have shown that whereas approach is accompanied by a global perceptual focus, and a broader conceptual focus avoidance is accompanied by a more local, detail-oriented perceptual focus and a narrower conceptual focus (Förster et al., 2006, 2008; Friedman & Förster, 2000; see also Förster & Higgins, 2005). Following the rationale of the cognitive-tuning approach (Schwarz, 1990, 2001), it is assumed that narrow perceptual and conceptual foci associated with an avoidance orientation serve people better under danger when they have to take action in order to change a problematic situation. This is because action necessitates representing the environment in concrete, low-level terms, and because the restricted foci enable the filtering out of perceptual input and behavioral plans that are irrelevant to escaping the threat and thereby facilitate efficient emergency responding (Derryberry & Tucker, 1994; Förster et al., 2006). The broadened scope of both perceptual and conceptual foci elicited under approach better suits benign situations in which a free, flexible exploration of the environment is beneficial. This is because a broad scope of perceptual attention enables efficient processing of a more extensive range of external stimuli and a broad scope of conceptual attention enables connecting the focal concept with relatively remote mental representations (Förster et al., 2006).

Approach/Avoidance Motivational Orientation and Self-construal

As already noted, our finding that an approach orientation leads to more interdependence than an avoidance orientation does not go hand in hand with previous findings that suggest that an interdependent self-construal leads to more emphasis on prevention-focused information, and an independent self-construal

leads to more emphasis on promotion-focused information (Aaker & Lee, 2001; Lee et al., 2000). These authors manipulated independence versus interdependence, for example, by telling participants to imagine being in the final match of a tennis tournament either as individuals or as representatives of their team. Those in the team condition found prevention-framed information more important than those in the individual condition (Lee et al., Study 2). Thus, a more social self-construal is not always associated with an approach orientation.

We suggest that the effects reported in the present paper are due to the effect of motivational orientation on processing styles. In line with this argument, interdependence has been shown to lead to a more global processing style (Kühnen, Hannover, & Schubert, 2001; Kühnen & Oyserman, 2002) and a global perceptual focus leads to a more interdependent self-construal (Fishbach & Förster, 2006, as cited by Förster et al., 2008). Furthermore, global processing has been shown to be associated with a promotion focus on ideals, which is associated with an approach orientation (Förster & Higgins, 2005). Importantly, perceptual and conceptual foci are assumed to vary together (Derryberry & Tucker, 1994; see also Förster et al., 2006).

However, the mechanism underlying Aaker and Lee's results seems to be a more specific one, which operates later on in the process: a feeling of responsibility for others leads to a more prudent, careful and avoidant strategy, i.e., a prevention focus. We think that the link between motivational orientation and self-construal depends, in part, on the focus of attention. Relating to others means approaching them. However, a possible consequence of relating to others may be caring about what is good or bad for them. Thus, realizing that one's actions are relevant for others can elicit feelings of responsibility, a moral obligation, anticipated shame at failing the other person or worry about the consequences of failing for the relationship. Under these circumstances, then, a chronic or situational interdependent self can result in a prevention focus.

Implications for Identification with Groups

Our findings suggest that focusing on membership in the in-group under approach results in a more intense feeling of identification with the in-group than under avoidance. In somewhat related studies, Sassenberg and colleagues have found that regulatory foci affect affective responses to social discrimination of the in-group with a prevention focus leading to more anger and agitation after social discrimination (Sassenberg & Hansen, 2007). They also found that regulatory foci influence the discriminative allocation of gains and losses to the in-group: a promotion focus engendered in-group favoritism when allocated resources were positive but not when they were negative. A prevention focus, in contrast, engendered in-group favoritism during the allocation of negative resources but not during the allocation of positive resources (Sassenberg, Kessler, & Mummendey, 2003). As far as we know, however, ours is the first study to examine the effect of motivational orientations on degree of identification with the in-group.

Assuming that the in-group is part of one's self concept, and hence positively valenced, it is plausible that focusing on one's in-group instigates an approach orientation. At the same time, our findings imply that an approach orientation increases identification with the in-group, suggesting that, in a sense, in-group identification is self-amplifying, thereby binding the individual to the group.

One last question concerning the identification with groups arises: What if an outgroup is the target of attention? Following our general logic, the answer seems to be straightforward. When in an approach orientation, people tend to represent their

environment in larger units (see Study 1) and the self-concept is more inclusive and more interdependent (Study 2). Accordingly, the self might well be construed as belonging to larger units, or more inclusive in-groups, such as human-beings, Westerners, Christians. In that case, approach might potentially also lead to a stronger identification with (or to decreased bias against) an out-group. If that is the case then it is likely that a similar but weaker pattern would be obtained for out-groups as compared to in-groups. Other processes that might be involved in producing the observed effects such as those based on effect priming (see below) would lead to a similar prediction.

Approach/Avoidance Motivational Orientations and Psychological Distance

The demonstrated effects of the orientations on identification with one's in-group (Studies 3 and 4) support the general claim by Nussinson et al. (2010) for an effect of the motivational orientations on the psychological distance that people experience from social objects. They have shown that subtle activations of the approach/avoidance system influence the perceived psychological similarity of unknown others to the self. They have further shown that when under approach, people's behavior assimilates toward the typical behavior of a primed exemplar (e.g., Einstein, Lothar Matthäus) or a stereotype (Professors, Soccer players) whereas under avoidance their behavior is contrasted away from the typical behavior of the prime.

These effects of motivational orientations on the psychological distance of the self from relatively unknown others were explained in terms of *effect priming*. In our daily life, approach behavior and, hence, an approach orientation in general are associated with experienced psychological closeness, whereas avoidance behavior and an avoidance orientation are associated with psychological distance. Individuals tend to decrease their physical distance from those they like and feel close to, for example by hugging, sitting nearby, or maintaining eye contact. Conversely, they tend to increase their physical distance from those they dislike and feel distant from, for example by turning their back to, ignoring, or staying away (e.g., Macrae, Bodenhausen, Milne, & Jetten, 1994). This coupling (see Förster, 2004; Förster & Strack, 1996) results in a link between orientation and psychological closeness. It facilitates the processing of cues indicating psychological closeness when under approach while facilitating the processing of cues indicating psychological distance when under avoidance.

While the hypothesized effects of the orientations on identification with one's in-group were derived from their effect on processing style, it is possible that they were also caused to some extent by effect priming. For example, assuming that episodes of closeness to one's in-group are more accessible under approach than under avoidance, this should contribute to the degree of identification with the group. Thus, both the effect of the orientations on conceiving the self as part of a large unit and effect priming could have contributed to the above-reported effects, and at this point we are unable to distinguish between these contributions.

Conclusion

Our studies join recent findings attesting to the role of approach and avoidance in social perception (Nussinson et al., 2010), and they converge with research on processing styles and self-construal. We believe that the effect of approach and avoidance orientations on self-construal and on identification with groups has

important implications for various related social phenomena. For example, whereas anxious and depressed individuals often feel disconnected and lonely (DSM-IV-TR; American Psychiatric Association, 2000), our research suggests that things may be improved once any positive goal is found that can instigate an approach orientation. This approach orientation should lead to a more social self-concept, which will make individuals feel closer to their social environment.

Notes

1. Due to an error in the assignment of participants to the two versions of the study, 105 of the participants included in the analysis received the New-York scenario before the yard-sale scenario whereas only 38 participants received the reversed order.
2. In Study 1 we did not control for the experienced difficulty of the arm position, rendering it impossible for us to rule out the possibility that the result pattern is some consequence of a difference in the relative difficulty of the two arm positions. This is, however, unlikely: A difference in the effortfulness of the two positions was observed in only two of the eleven previous studies in which it was controlled for (Förster et al., 2006; Friedman & Förster, 2000, 2001; Nussinson et al., 2010, 2011). These two studies involved relatively long tasks. However, in an attempt to ensure that the effect of the arm position did not wear out, participants in Study 1 were asked to relax their arm every 90 seconds, rendering it very unlikely that differences in experienced difficulty have emerged.
3. The results of studies 2–4 were also analyzed with participants' gender included in the analysis. The exact same result patterns were obtained.

References

Aaker, J. L., & Lee, A. Y. (2001). "I" seek pleasures and "we" avoid pains: The role of self-regulatory goals in information processing and persuasion. *Journal of Consumer Research*, *28*, 33–49.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text Revision). Washington, DC: Author.

Bargh, J. A. (1997). The automaticity of everyday life. In R. S. J. Wyer (Ed.), *Advances in social cognition* (Vol. 10, pp. 1–61). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Brewer, M. B., & Gardner, W. (1996). Who is this "We"? Levels of collective identity and self representations. *Journal of Personality and Social Psychology*, *71*, 83–93.

Cacioppo, J. T., & Berntson, G. G. (1994). Relationship between attitudes and evaluative space: A critical review, with emphasis on the separability of positive and negative substrates. *Psychological Bulletin*, *115*, 401–423.

Cacioppo, J. T., Priester, J. R., & Berntson, G. G. (1993). Rudimentary determinants of attitudes: II. Arm flexion and extension have differential effects on attitudes. *Journal of Personality and Social Psychology*, *65*, 5–17.

Cameron, J. E. (2004). A three-factor model of social identity. *Self and Identity*, *3*, 239–262.

Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review*, *97*, 19–35.

Chen, M., & Bargh, J. A. (1999). Consequences of automatic evaluation: Immediate behavioral predispositions to approach or avoid the stimulus. *Personality and Social Psychology Bulletin*, *25*, 215–224.

Chen, Y., Brockner, J., & Chen, X. (2002). Individual-collective primacy and in-group favoritism: Enhancement and protection effects. *Journal of Experimental Social Psychology*, *38*, 482–491.

Chen, Y., Brockner, J., & Katz, T. (1998). Toward an explanation of cultural differences in in-group favoritism: The role of individual versus collective primacy. *Journal of Personality and Social Psychology*, *75*, 1490–1502.

Cross, S. E., & Madson, L. (1997). Models of the self: Self-construals and gender. *Psychological Bulletin*, *122*, 5–37.

Derryberry, D., & Tucker, D. M. (1994). Motivating the focus of attention. In P. M. Niedenthal & S. Kitayama (Eds.), *The heart's eye: Emotional influences in perception and attention* (pp. 167–196). San Diego, CA: Academic Press.

Ellemers, N., Kortekaas, P., & Ouwerkerk, J. (1999). Self categorization, commitment to the group and social self-esteem as related but distinct aspects of social identity. *European Journal of Social Psychology*, *28*, 371–398.

Fishbach, A., & Förster, J. (2006). *Broadening and narrowing the self by global vs. local processing*. Unpublished data set, University of Chicago, School of Business. Chicago, IL.

Förster, J. (2004). How body feedback influences consumers' evaluation of products. *Journal of Consumer Psychology*, *14*, 416–426.

Förster, J., Friedman, R. S., Özelsel, A., & Denzler, M. (2006). Enactment of approach and avoidance behavior influences the scope of perceptual and conceptual attention. *Journal of Experimental Social Psychology*, *42*, 133–146.

Förster, J., & Higgins, E. T. (2005). How global versus local perception fits regulatory focus. *Psychological Science*, *16*, 631–636.

Förster, J., Liberman, N., & Kuschel, S. (2008). The effect of global versus local processing styles on assimilation versus contrast in social judgment. *Journal of Personality and Social Psychology*, *94*, 579–599.

Förster, J., & Strack, F. (1996). Influence of overt head movements on memory for valenced words: A case of conceptual-motor compatibility. *Journal of Personality and Social Psychology*, *71*, 421–430.

Förster, J., & Strack, F. (1997). Motor actions in retrieval of valenced information: A motor congruence effect. *Perceptual and Motor Skills*, *85*, 1419–1427.

Förster, J., & Strack, F. (1998). Motor actions in retrieval of valenced information: II. Boundary conditions for motor congruence effects. *Perceptual and Motor Skills*, *86*, 1423–1426.

Friedman, R. S., & Förster, J. (2000). The effects of approach and avoidance motor actions on the elements of creative insight. *Journal of Personality and Social Psychology*, *79*, 477–492.

Friedman, R. S., & Förster, J. (2001). The effects of promotion and prevention cues on creativity. *Journal of Personality and Social Psychology*, *81*, 1001–1013.

Friedman, R. S., & Förster, J. (2005). The influence of approach and avoidance cues on attentional flexibility. *Motivation and Emotion*, *29*, 69–81.

Gabriel, S., & Gardner, W. L. (1999). Are there "his" and "hers" types of interdependence? The implications of gender differences in collective versus relational interdependence for affect, behavior, and cognition. *Journal of Personality and Social Psychology*, *77*, 642–655.

Gardner, W. L., Gabriel, S., & Hochschild, L. (2002). When you and I are "we," you are not threatening: The role of self-expansion in social comparison. *Journal of Personality and Social Psychology*, *82*, 239–251.

Gardner, W. L., Gabriel, S., & Lee, A. Y. (1999). "I" value freedom, but "we" value relationships: Self-construal priming mirrors cultural differences in judgment. *Psychological Science*, *10*, 321–326.

Gray, J. A. (1990). *Psychobiological aspects of relationships between emotion and cognition*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Hinkle, S., Taylor, L. A., Fox-Cardamone, D. L., & Crook, K. E. (1989). Intragroup identification and intergroup differentiation: A multicomponent approach. *British Journal of Social Psychology*, *28*, 305–317.

Isen, A. M., & Daubman, K. A. (1984). The influence of affect on categorization. *Journal of Personality and Social Psychology*, *47*, 1206–1217.

Jackson, J. W. (2002). Intergroup attitudes as a function of different dimensions of group identification and perceived intergroup conflict. *Self and Identity*, *1*, 11–33.

Kuhn, M. H., & McPartland, T. S. (1954). An empirical investigation of self-attitudes. *American Sociological Review*, *19*, 68–76.

Kühnen, U., Hannover, B., & Schubert, B. (2001). The semantic-procedural interface model of the self: The role of self-knowledge for context-dependent versus context-independent modes of thinking. *Journal of Personality and Social Psychology*, *80*, 397–409.

Kühnen, U., & Oyserman, D. (2002). Thinking about the self influences thinking in general: Cognitive consequences of salient self-concept. *Journal of Experimental Social Psychology*, *38*, 492–499.

Lang, P. J. (1995). The emotion probe: Studies of motivation and attention. *American Psychologist*, *50*, 372–385.

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*, *78*, 1122–1134.

Lewin, K. (1935). *A dynamic theory of personality*. New York, NY: McGraw-Hill.

Liberman, N., Sagristano, M. D., & Trope, Y. (2002). The effect of temporal distance on level of mental construal. *Journal of Experimental Social Psychology*, *38*, 523–534.

Macrae, C. N., Bodenhausen, G. V., Milne, A. B., & Jetten, J. (1994). Out of mind but back in sight: Stereotypes on the rebound. *Journal of Personality and Social Psychology*, *67*, 808–817.

McGuire, W. J., & McGuire, C. V. (1982). Significant others in self space: Sex differences and developmental trends in social self. In J. Suls (Ed.), *Psychological perspectives on the self* (pp. 71–96). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Murray, N., Sujan, H., Hirt, E. R., & Sujan, M. (1990). The influence of mood on categorization: A cognitive flexibility interpretation. *Journal of Personality and Social Psychology*, *59*, 411–425.

Neumann, R., & Strack, F. (2000). Approach and avoidance: The influence of proprioceptive and exteroceptive cues on encoding of affective information. *Journal of Personality and Social Psychology*, *79*, 39–48.

Nussinson, R., Seibt, B., Häfner, M., & Strack, F. (2010). Come a bit closer: Approach motor actions lead to feeling similar and behaviorally assimilating to others. *Social Cognition*, *28*, 40–58.

Nussinson, R., Seibt, B., Häfner, M., & Strack, F. (2011). *Cognitive consequences of motivation orientation: The effect on perceived similarity between objects*. Manuscript in preparation.

Priester, J. R., Cacioppo, J. T., & Petty, R. E. (1996). The influence of motor processes on attitudes toward novel versus familiar semantic stimuli. *Personality and Social Psychology Bulletin*, *22*, 442–447.

Roccas, S., Sagiv, L., Schwartz, S. H., Halevy, N., & Eidelson, R. (2008). Towards a unifying model of identification with groups: integrating theoretical perspectives. *Personality and Social Psychology Review*, *12*, 280–306.

Rosenberg, M. (1989). Self-concept research: A historical overview. *Social Forces*, *68*, 34–44.

Sassenberg, K., & Hansen, N. (2007). The impact of regulatory focus on affective responses to social discrimination. *European Journal of Social Psychology*, *37*, 421–444.

Sassenberg, K., Kessler, T., & Mummendey, A. (2003). Less negative = more positive? Social discrimination as avoidance or approach. *Journal of Experimental Social Psychology*, *39*, 48–58.

Schubert, T. W., & Otten, S. (2002). Overlap of self, in-group, and out-group: Pictorial measures of self-categorization. *Self and Identity*, *1*, 353–376.

Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 527–561). New York, NY: Guilford Press.

Schwarz, N. (2001). Feelings as information: Implications for affective influences on information processing. In L. L. Martin & G. L. Clore (Eds.), *Theories of mood and cognition: A user's guidebook* (pp. 159–176). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Seibt, B., Neumann, R., Nussinson, R., & Strack, F. (2008). Movement direction or change in distance? Self- and object-related approach–avoidance motions. *Journal of Experimental Social Psychology*, *44*, 713–720.

Smith, P. B., Giannini, M., Helkama, K., Maczynski, J., & Stumpf, S. (2005). Positive auto-stereotyping and self-construal as predictors of national identification. *Revue International de Psychologie Sociale*, *18*, 65–90.

Strack, F., & Deutsch, R. (2004). Reflective and impulsive determinants of social behavior. *Personality and Social Psychology Review*, *8*, 220–247.

Sutton, S. K., & Davidson, R. J. (1997). Prefrontal brain asymmetry: A biological substrate of the behavioral approach and inhibition systems. *Psychological Science*, *8*, 204–210.

Trafimow, D., Triandis, H. C., & Goto, S. G. (1991). Some tests of the distinction between the private self and the collective self. *Journal of Personality and Social Psychology*, *60*, 649–655.

Tropp, L. R., & Wright, S. C. (2001). In-group identification as the inclusion of in-group in the self. *Personality and Social Psychology Bulletin*, *27*, 585–600.

Tucker, D. M., & Williamson, P. A. (1984). Asymmetric neural control systems in human self-regulation. *Psychological Review*, *91*, 185–215.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Cambridge, UK: Basil Blackwell.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063–1070.