Cognitive and affective identification: Exploring the links between different forms of social identification and personality with work attitudes and behavior

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Summary   Individuals often identify with groups in order to either reduce perceived uncertainty or to feel better about who they are as individuals. This suggests that cognitive and affective identification are two distinctive forms of social identification in organizational settings. Because neurotic individuals are highly motivated to reduce perceived uncertainty, they will tend to identify cognitively with groups. Extraverted individuals, on the other hand, are highly motivated to enhance how they feel about themselves and thus identify affectively with groups. Across three studies, we develop measures of cognitive and affective identification and then show that neuroticism is positively related to cognitive identification, whereas extraversion is positively related to affective identification. We also find that affective identification provides incremental predictive validity over and above cognitive identification in the prediction of organizational commitment, organizational involvement, and organizational citizenship behaviors. Copyright © 2012 John Wiley & Sons, Ltd.

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Social identification is the sense of oneness that group members feel with certain groups and the degree to which they define themselves as members of those groups (Ashforth & Mael, 1989). When employees identify with organizational groups (e.g., workgroup, team, or organization), they are less likely to leave (Ashforth & Saks, 1996; van Knippenberg & van Schie, 2000), perform more organizational citizenship behaviors (OCB) (Bartel, 2001; Bergami & Bagozzi, 2000), are more involved on the job (van Knippenberg & van Schie, 2000), are more satisfied with their jobs (Ashforth & Saks, 1996; Lee, 1971; Mael & Ashforth, 1992; Mael & Tetrick, 1992), and report working harder (Ashforth & Saks, 1996).

From its initial conceptualization, social identification was thought to include both cognitive and affective dimensions. Tajfel (1972) defined social identity as involving an individual's knowledge of group membership and the emotional significance the individual attaches to that membership. Groups provide a way for individuals to place themselves and others in society such that individuals cognitively define themselves as organization members (Albert et al., 1998). Groups also provide a sense of pride in the group and belongingness and reflect the emotional value of that group to the group member (Albert et al., 1998). The theoretical underpinnings of social identification are based on a hybrid of two streams of research: self-categorization theory (largely the basis of the cognitive aspect of identification) and social identity theory (largely the basis of the emotional aspect of identification).

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Drawing on these rich theoretical streams, we suggest that there are two main reasons why people identify with groups: (i) to feel better about themselves (Tajfel & Turner, 1979) and (ii) to reduce social uncertainty (Hogg, 2000; Reid & Hogg, 2005). We propose that self-esteem is associated primarily with affective identification, as it relates to how one feels about oneself and the group. In contrast, uncertainty reduction is associated with cognitive identification, as it relates to how one thinks about oneself and defines one's place in the social environment.

Moreover, we draw on personality theory (Costa & McCrae, 1992) to hypothesize that two traits are associated with these different motives for identifying with social groups. Social identification researchers have tended to focus solely on the situational determinants of identification and have neglected potential dispositional antecedents (see Riketta [2005] for a review). This lack of attention to individual differences in the prediction of identification is unfortunate because people may differ in their "propensity to identify" (Albert et al., 1998, p. 238). We outline how extraversion and neuroticism are two personality traits that are likely to relate to the two motives for identifying with social groups.

In this paper, we identify the dimensions of identification and empirically test their antecedents and outcomes. We focus specifically on identification in organizational settings, because it is in this literature where social identification has taken a predominantly cognitive focus (in contrast to the social psychology literature, which has retained a somewhat affective focus in its examination of socio-demographic identities). Throughout the paper, our use of the term "social identity" is, then, strictly intended to refer to identification in organizations. We develop a rigorous two-factor measure of identification that distinguishes affective identification from cognitive identification, examines the dispositional sources of these two forms of identification, and tests the incremental validity of affective over cognitive identification.

Two Dimensions of Social Identification

In an attempt to distinguish identification from commitment, organizational researchers may have focused too heavily on the cognitive aspect of social identification. The primary difference between identification and commitment, however, is not a cognitive versus affective one. Instead, it is that identification reflects the sense of oneness with a group, whereas commitment reflects the relationship strength between separate psychological entities (Ashforth and Mael, 1989; Meyer & Allen, 1991; Pratt, 1998; van Knippenberg & Sleebos, 2006).[1] A similarity between the two constructs is that there is consensus that both identification and commitment have cognitive and affective components (Cheney, 1983; Edwards & Peccei, 2007; Harris & Cameron, 2005; Meyer & Allen, 1991; van Dick et al, 2004). Although the affective component of *commitment* has been extensively examined, the affective component of *identification* has been the subject of very little empirical research.

Ashforth and Mael (1989, p. 21) acknowledged that their concept of organizational identification deviated from existing social identification research because it excluded the "affective and evaluative" dimension of identification. Organizational researchers have suggested that research should re-examine the unmeasured affective dimension (Albert et al., 1998). The lack of attention to the affective dimension of social identification may be responsible for the surprising lack of support for one of the main reasons why people are thought to identify with groups—to make themselves feel better. Indeed, this "self-esteem hypothesis" is a core tenet of social identity theory (Reid &

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[1]As Pratt (1998: 178) put it: "Organizational commitment is often associated with, 'How happy or satisfied am I with my organization?' . . .Organizational identification, by contrast, is concerned with the question, 'How do I perceive myself in relation to my organization?'" The satisfaction one has with their organization may be influenced by a multitude of factors, such as ongoing rewards the organization provides their workers, and there is no real "commitment theory" to shape and structure our understanding of the antecedents and consequences of commitment (other than more general attitude theory; Solinger, Van Olffen, and Roe, 2008). Identification, in contrast, is rooted in a rich and strong conceptual tradition that allows an integrative treatment of its relationship with antecedents and outcomes (Ashforth and Mael, 1989; Hogg and Terry, 2000; Turner, Hogg, Oakes, Reicher, and Wetherell, 1987; Riketta, 2005; Pratt, 1998; van Dick et al., 2004).

Hogg, 2005; Tajfel & Turner, 1979). However, this hypothesis has received only mixed support (Crocker & Luhtanen, 1990; Long & Spears, 1998; Rubin & Hewstone, 1998).

We suggest that this may be because the most common measures of social identification do not capture how people feel about their group memberships, making the link between self-esteem and social identification difficult to detect. Existing identification measures still focus almost exclusively on the cognitive aspect of the construct (Harris & Cameron, 2005; Cheney, 1983)—individuals' self-perceptions that they *are one with a group* (Dutton, Dukerich & Harquail, 1994; Ashforth & Mael, 1989). Certainly, the first and most basic dimension of identification is cognitively categorizing oneself as a group member (Ashmore Deaux, & McLaughlin-Volpe, 2004). This is generally recognized as the heart of social identification (Deaux, 1996). Self-categorization, or what we call cognitive identification, may be the precondition for someone to feel any type of emotions related to their identification.

What we label affective identification is how people feel about themselves in relation to a particular social group (Ashmore Deaux, & McLaughlin-Volpe, 2004). We suggest that affective identification reflects individuals' feelings of oneness with the group. *Feeling* oneness with the group is distinct from *perceiving* oneness with the group and should involve positive feelings about one's membership, including pride and happiness (Albert et al., 1998). Whetten (in Albert, 1998, p. 11) likened identities to onions where, as one peels back the layers, one eventually elicits "tears" (strong emotions), signifying the vital core of identity that is the basis for identification. In short, as Harquail argued (in Albert et al., 1998, p. 225), "identification engages more than our cognitive self-categorization and our brains, it engages our hearts." Accordingly, we define affective identification as an individual's *positive feelings about being one with a group*.

We suggest that the affective dimension of identification that is actually experienced is generally positive (e.g., pride, excitement, joy, love) because individuals who can say "I am 'A' and it's important to me" wish to feel positively about their membership and often find sources of pride in even the most stigmatized of groups (Ashforth, Harrison, & Corley, 2008; Cameron, 2004). Further, individuals who generally feel positively about the group are more likely to conclude, "I am 'A' and it's important to me." Thus, cognition and affect reciprocally reinforce identification (e.g., Kessler & Hollbach, 2005). Indeed, Pratt and Ashforth (1993, p. 313) suggested that "work, over time, tends to implicate one's sense of self such that behavior, cognition, and affect converge over time."

Two Motives for Social Identification

Although much existing research on social identification has examined its situational antecedents, the degree to which individuals identify with their organizations and other work-based groups may be affected by dispositional differences, such as individuals' innate need for identification (Kreiner & Ashforth, 2004). We suggest that two personality factors are particularly likely to affect levels of identification: extraversion and neuroticism. These factors may make an individual more likely to identify with social groups in general, regardless of the dynamics surrounding any particular social group. The reasons they lead to identification differ, however, and thus lead differentially to cognitive and affective identification.

Social identity and self-categorization theories suggest that people identify with groups for two main reasons—to feel better about themselves (the "self-esteem hypothesis"; Tajfel & Turner, 1979) and to reduce painful social uncertainty (the "uncertainty-reduction hypothesis"; Hogg, 2000; Reid & Hogg, 2005). We suggest that these motives cause different aspects of individual's identities to become salient (Ashforth & Johnson, 2001); specifically, we argue that the dispositional traits of extraversion and neuroticism are associated with the self-esteem motive and uncertainty-reduction motive, respectively, and in turn are associated with the two dimensions of identification.

Extraversion leads to a desire for self-enhancement (Matthews, Zeidner, & Roberts 2004), which reflects a motivation to emotionally connect with one's social environment. Extraversion has been shown to be related to various group process variables, such as cohesion, communication, flexibility, and conflict (Barrick et al., 1998; Barry & Stewart, 1997). Extraverted people enjoy working in groups and like to be in the presence of other people (Costa

& McCrae, 1992). This enjoyment appears to make extraversion a likely candidate for predicting affective identification; extraverted people should, in general, have stronger feelings of oneness with the groups of which they are members because of their preference to be in group situations.

Moreover, extraversion is the personality trait most consistently associated with positive affect (Larsen & Ketelaar, 1991). Indeed, Costa and McCrae (1980) concluded that extraversion "predisposes individuals to positive affect" (p. 673). Affective identification is thought to be associated with positive feelings about one's membership in a social group (Albert et al., 1998), and by extension, extraverted individuals with their typically higher levels of positive affect are more likely to experience positive emotions about their social groups.

Hypothesis 1: Extraversion is positively related to affective identification in organizations.

Uncertainty reduction is the other main pathway to identification, and we argue that this is associated primarily with cognitive identification, as the desire for less uncertainty reflects an epistemic motivation to understand one's social environment. Neuroticism leads to a desire for certainty (Hirsh & Inzlicht, 2008), and to the extent that individuals are highly neurotic, they will perceive their lives as having more uncertainty and be motivated to reduce this uncertainty with clearer social self-definitions. As a result, neurotic individuals will tend to take the uncertainty-reducing path to identification and have higher levels of cognitive identification with groups.

Neuroticism is associated with an individual's tendency to experience anxiety and insecurity (Eysenck, 1983). People with high levels of neuroticism feel unsure of themselves and often worry about their behavior in social situations. Social identification provides a sense of security for these people, as they may perceive that there is "safety in groups." Additionally, identification with a social group may be one way for people high in neuroticism to reduce the uncertainty of social situations, because the group prescribes the appropriate behavior.

Hypothesis 2: Neuroticism is positively related to cognitive identification in organizations.

Outcomes of Cognitive and Affective Identification

A variety of attitudes and behaviors can be expected to arise out of organizational identification. First, as noted above, organizational commitment is a related but distinct construct from organizational identification. Mael and Tetrick (1992) lent empirical support for this distinction, showing that although identification was positively related to job satisfaction, organizational satisfaction, and job involvement, it had significantly less overlap with these constructs than organizational commitment. Nevertheless, we expect that both identification dimensions are uniquely associated with organizational commitment.

Second, satisfaction with the organization and job satisfaction have been shown to significantly correlate with organizational identification in various settings (Ashforth & Saks, 1996; Mael & Ashforth, 1992; Mael & Tetrick, 1992; van Knippenberg & van Schie, 2000). We expect not only to replicate these findings but also to find that both identification dimensions are uniquely associated with satisfaction.

Third, Dutton and Dukerich (1991, p. 550) theorized that the members' perceptions of the organization's identity and image (the members' perceptions of what people outside the organization think of it) "suggest a very personal connection between organizational action and individual motivation." They proposed that members who "have a stake in directing organizational action" will act in ways that are consistent with what they believe to be the essence of the organization and act in ways that support the organization.

Several empirical studies have supported this proposition. Bergami and Bagozzi (2000) found that identification significantly predicted OCB. Similarly, Bartel (2001) found a relationship between organizational identification and cooperation, helping behaviors, work effort, and advocacy participation. Finally, Dukerich, Golden, and Shortell

(2002) showed that doctors' identification with their healthcare system was positively related to cooperative behaviors in relation to that system.

> *Hypothesis 3*: Cognitive and affective identification are uniquely associated with (a) organizational commitment, (b) satisfaction, (c) OCB, and (d) organizational involvement behaviors.

We also raise the issue of whether a measure that includes both the cognitive and affective dimensions of identification predicts as well as the most commonly used identification measure in the organizational literature (Riketta, 2005). Mael's measure (1989) has been used in numerous studies and has been shown to be a valid predictor of organizational commitment (Ashforth & Saks, 1996; Bergami & Bagozzi, 2000), job satisfaction (Ashforth & Saks, 1996; Mael & Tetrick, 1992; van Knippenberg & van Schie, 2000), OCB (Bergami & Bagozzi, 2000), and organizational involvement (Bhattacharya, Rao, & Glynn, 1995; Mael & Ashforth, 1992; van Knippenberg & van Schie, 2000). We suggest that this scale taps primarily into the cognitive dimension of identification (we discuss the details of existing measures in the succeeding discussions). Thus, this study provides a direct test of the incremental validity of a measure that also includes affective identification over and above the Mael measure.

> *Hypothesis 4*: Affective identification will explain unique variance in (a) organizational commitment, (b) satisfaction, (c) OCB, and (d) organizational involvement behaviors, over and above the variance explained by the Mael scale.

One final issue related to the two identification dimensions is their temporal sequence. Is cognitive identification a necessary precondition for affective identification? In other words, must one *think* of oneself as identifying with the social group before one can *feel* oneness with the group? Some research points in this direction. For example, Carmeli, Gilat, and Weisberg (2006) suggested that cognitive identification preceded affective commitment in external organizational audiences (customers, suppliers, competitors).[2]

In contrast, research on motivated cognition may suggest that the causal pathway runs in the opposite direction. The concept of motivated cognition is that affective states and expectations impact how people seek out and process information (Chen, Shechter, & Chaiken, 1996). Similarly, the affect-as-information model (Clore, Gasper, & Garvin, 2001) suggests that people use emotions as embodied information that they use in their thinking about people, objects, situations, and groups. Together, these theories might suggest that affective identification is a necessary precondition for cognitive identification. Because theory does not point in a definitive causal direction between the two dimensions, we investigate their reciprocal relationships in an exploratory manner.

> *Research question: Does one of the identification dimensions precede the other?*

Study 1

With the two-dimensional conceptualization of identification in mind, we attempted to identify all current existing organization-based measures of identification to better understand the degree to which other researchers have measured affective and cognitive identification in organizations. We conducted an extensive literature review by searching for the term "identification" in ISI web of science, PsycInfo, and ProQuest and included all measures in organizational journals where the authors explicitly labeled the scale as "identification." To be consistent with the dominant measure of identification in organizational settings (i.e., Mael, 1989), we included measures of identification with all types of groups (e.g., business unit, work group, team, or organization). We ultimately identified

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[2]Building on Bergami and Bagozzi's (2000) conceptualization, these authors viewed identification as being purely cognitive, reflecting early thought on the construct.

40 unique published measures of identification with organization-based groups and attempted to identify whether they were tapping into cognitive or affective identification (see Appendix).

The vast majority of the identification items and measures tapped only into the cognitive dimension of identification. For example, Bergami and Bagozzi's (2000) graphical measure captures the degree to which one perceives an overlap between one's personal identity and the organizational identity. Mael's (1989) measure has items such as "I am very interested in what others think about my organization" and "This organization's successes are my successes."

A minority of the measures of identification may have tapped into both affective and cognitive dimensions of identification. For example, Harris and Cameron (2005) have an item that may capture affective identification (e.g., "In general, I am glad to be a member of this organization"). Van Dick et al. (2004) also may have an item capturing affective organizational identification (e.g., "I like to work for this organization"). However, in each case, these scales combine the affective and cognitive dimensions of organizational identification into a unidimensional measure.

A further limitation of existing identification measures is that some are target specific. That is, they were designed with a specific organizational level in mind and are not easily adapted to social referents that are larger or smaller in size. For example, Mael's (1989) measure includes the item, "If a story in the media criticized the organization, I would feel embarrassed." Clearly, it would be difficult to apply this item to a smaller target such as a workgroup. Although these measures work well in assessing identification with the targets for which they were written, social identity theory holds that individuals identify with multiple targets (e.g., workgroup, organization, profession; Tajfel, 1981; Turner, 1982), and empirical research has begun to examine this notion (Johnson, Morgeson, Ilgen, Meyer, & Lloyd, 2006). In order to empirically examine identification with multiple targets, it is necessary to use measures that can be easily adapted to both large and small social referents. Thus, we developed measures specifically designed to measure both the cognitive and affective dimensions of identification, without limiting the measure to a specific target.

Method

Measure development

We developed our measure by following established development and validation procedures (Haladyna, 1999; Hinkin, 1998). On the basis of our definitions of the dimensions outlined earlier, we independently wrote or revised items for each dimension. We undertook several steps in this initial item writing and revision stage. First, we reviewed existing items from published identification measures. These items were either (i) categorized as either being primarily cognitive or affective in nature or (ii) rewritten to more clearly reflect cognitive or affective identification. Second, we wrote new items to measure aspects of identification that we felt were not adequately captured in existing measures. Throughout the item writing and revising process, we strove for distinctiveness between the two dimensions by focusing on the thinking and feeling aspects of cognitive and affective identification, respectively. Third, as much as possible, we sought to create or revise items so they were not target specific. This resulted in an initial pool of 35 cognitive and affective identification items.

We then held a consensus discussion to pick the items that best reflected cognitive and affective identification. We eliminated items if they were judged to be unnecessarily complex or if they did not clearly reflect the underlying dimension of identification. Through this discussion, the original item set was reduced to 22 items (11 items per dimension). In this study, we used the university as the target of identification.

Participants and procedure

One hundred twelve undergraduates enrolled in an upper-level Management course at a large Midwestern university participated in exchange for course credit; 51.8 per cent were men and 86.6 per cent were Caucasian, and the average age was 20.75 ($SD = 0.91$).

Results and Discussion of Study 1

We conducted an exploratory principal factor analysis to identify emergent factor solutions and determine if the data supported alternative factor solutions. We used oblique rotation, which allows the factors to correlate, because the theory underpinning our model anticipates that the factors may be correlated. We used three criteria to determine which items to retain. First, we looked for factors with eigenvalues greater than 1.0 (the Kaiser–Guttman criterion). Often, however, this criterion overestimates the number of factors to retain (Floyd & Widaman, 1995). Therefore, for our second criterion, we made a plot of the eigenvalues in descending order to identify the scree or the point at which the slope of decreasing eigenvalues approaches zero. This indicates the point at which eliminating additional factors would not eliminate significant variance. Third, we retained only factors with two or more items loading at significant levels; we attributed an item to a given factor if the factor loading equaled or exceeded 0.40 (Floyd & Widaman, 1995).

The Kaiser–Guttman criterion initially indicated a four-component solution with eigenvalues greater than 1, but examination of the scree plot supported a two-component solution. Therefore, we specified a two-factor solution and, through an iterative process, removed items that had either low loadings on their primary component or high cross-loadings on the other component. This process resulted in a clean two-component solution with four items each representing the two dimensions; we show the retained items in Table 1. Coefficient alpha for the component that we labeled cognitive identification was .81, and was .84 for the component that we labeled affective identification. The components were moderately correlated ($r = .40$, $p < .01$), suggesting that although related, they were tapping into separate dimensions.

Study 2

The purpose of Study 2 was to confirm the dimensionality of the new measure and establish its construct and predictive validity. To do this, we administered the measure to a new sample and conducted confirmatory factor analyses, and we examined the relationships of the new identification measure with personality, organizational prestige, commitment, satisfaction, OCB, and two involvement behaviors. This allowed us to place cognitive and affective identification within a nomological network of related constructs. Additionally, we compared the predictive validity of the new measure with that of the most commonly used identification measure in the literature (Mael, 1989).

Table 1. Study 1 component loadings of the items.

Item	Affective identification	Cognitive identification
I feel happy to be a student in the university.	**.91**	.40
I am proud to be a student in the university.	**.88**	.36
It feels good to be a student in the university.	**.84**	.44
If I were forced to leave the university, I would be very disappointed.	**.77**	.20
My self-identity is based in part on my membership in the university.	.41	**.86**
My membership in the university is very important to my sense of who I am.	.29	**.85**
My sense of self overlaps with the identity of the university.	.39	**.82**
If the university were criticized, it would influence how I thought about myself.	.23	**.70**
Eigenvalue	3.97	1.58
% of variance	49.64	19.77

Note: The bold values indicate which factor on which the items load most strongly.

Method

Participants and procedure

Seven hundred forty-nine upper-level undergraduates enrolled in the College of Business at a large Midwestern university participated voluntarily. The sample was 57 per cent men and 84 per cent Caucasian. Whereas the identification target in Study 1 was the university as a whole, in this study, we asked the participants to consider their identification with the College of Business. We gathered the individual difference measures at different times over the previous two years and we matched these with the survey data.

Measures

We measured the two identification dimensions with the two 4-item measures developed in Study 1. Coefficient alphas were .83 and .87, respectively. We also measured identification by using a previously validated 6-item measure (Mael, 1989) to establish convergent validity of the new measures. Coefficient alpha for this scale was .85 in our sample.

We measured extraversion and neuroticism by using the Revised NEO Personality Inventory (Costa & McCrae, 1992). Each measure contained 12 statements, and participants responded using a 5-point scale. Coefficient alpha in our sample were .77 for extraversion and .80 for neuroticism. We measured these at different times from the rest of the variables. Specifically, 351 of the participants also participated in additional unrelated studies that measured personality in the two years prior to this study. On average, we collected the personality measures one year prior to the rest of the variables in this study.

We measured organizational commitment with eight items adapted from Mowday, Steers, and Porter (1979). A sample item is, "I am willing to put in a great deal of effort beyond that normally expected in order to help the College of Business be successful." Coefficient alpha in our sample was .90. We measured organizational satisfaction with seven items adapted from Hackman and Oldham (1980). A sample item is, "Generally speaking, I am very satisfied with the College of Business." Coefficient alpha in our sample was .84. We measured OCB with the interpersonal helping and loyal boosterism scales from Moorman and Blakely (1995). Sample items are, "Go out of your way to help other students with school-related problems" and "Encourage friends and family to attend the College of Business," respectively. Factor analysis indicated that these subscales were unidimensional in our sample, with an alpha of .95.

We assessed organizational involvement by asking participants to indicate the degree to which they had been involved in nine activities: organizations within the business school, student organization executive boards, and student organization committees, career advising/direction, workshops/seminars offered by the business school, mock interviewing, a job placement system, assistance from the career center staff, and the career center overall. Factor analysis indicated two factors; the first three items, which all dealt with student organizations, loaded on one factor; and the other six, which all dealt with professional development activities, loaded on the second factor. We called the first factor *organizational involvement*, and the second factor *professional development*, and they each had internal consistency reliabilities of .79.

We also included several control variables, including gender and tenure in the business school, because both have been significantly associated with identification in various studies. We also included a measure of perceived organizational prestige, as this has also been shown to be a significant predictor of identification in previous research. We measured organizational prestige with five items adapted from Mael and Ashforth (1992). A sample item is, "People in the university think highly of the College of Business." Coefficient alpha in our sample was .74.

Results

We first ran a confirmatory factor analysis on the identification items to examine whether the dimensions showed discriminant validity in this sample. The hypothesized two-factor solution showed excellent fit ($\chi^2_{19} = 43.51$, $NNFI = 0.99$,

$CFI = 0.99$, $RMSEA = 0.03$). This fit much better than a one-factor solution ($\chi^2_{20} = 888.15$, $NNFI = 0.58$, $CFI = 0.70$, $RMSEA = 0.24$), suggesting that the measures were again tapping into different dimensions of identification. Table 2 shows the means, standard deviations, and intercorrelations of all of the variables in the study. The identification dimensions showed a similar relationship ($r = .43$, $p < .01$) as found in Study 1. Cognitive identification correlated .61 ($p < .01$) and affective identification correlated .50 ($p < .01$) with the Mael identification measure.

Hypotheses 1 and 2 predicted that extraversion is positively related to affective identification and neuroticism is positively related to cognitive identification. We tested these hypotheses by first examining the zero-order correlations and then through multiple hierarchical regression. In the regression equations, we entered the control variables in the first step and the personality variables in the second step. The results of these equations can be found in Table 3. Extraversion was significantly correlated with affective identification ($r = .21$, $p < .01$), but not with cognitive identification ($r = .08$, *ns*). In the regression equation with affective identification as the dependent variable, extraversion was still a significant predictor ($\beta = .16$, $p < .01$). Thus, Hypothesis 1 was supported. Neuroticism was significantly correlated with cognitive identification ($r = .15$, $p < .01$), but not with affective identification ($r = -.05$, $p < .01$). In the regression equation with cognitive identification as the dependent variable, neuroticism was still a significant predictor ($\beta = .20$, $p < .01$). Thus, Hypothesis 2 was supported.

Table 2. Study 2 means, standard deviations, and intercorrelations.

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Cognitive ID	3.20	0.85	(.83)										
2. Affective ID	4.28	0.61	.43**	(.87)									
3. Male ID scale	3.42	0.73	.61**	.50**	(.85)								
4. Neuroticism	2.47	0.58	.15**	−.05	.07	(.80)							
5. Extraversion	3.71	0.52	.08	.21**	.20**	−.19**	(.77)						
6. Prestige	4.02	0.62	.15**	.41**	.21**	−.15**	.17**	(.74)					
7. Commitment	3.78	0.64	.47**	.70**	.63**	−.02	.20**	.44**	(.90)				
8. Satisfaction	3.83	0.62	.25**	.54**	.36**	−.16**	.20**	.52**	.66**	(.84)			
9. OCB	3.60	0.84	.28**	.36**	.39**	.00	.18**	.37**	.51**	.46**	(.95)		
10. Org involvement	0.98	1.06	.17**	.18**	.20**	.04	.16**	.11**	.21**	.16**	.23**	(.79)	
11. Prof development	1.27	0.86	.16**	.15**	.21**	.05	.16**	.09*	.22**	.19**	.21**	.51**	(.79)

$N = 749$ for all correlations except those involving variables 4 and 5, where $N = 351$. Coefficient alpha is on the diagonal.
*$p < .05$;
**$p < .01$.

Table 3. Study 2 regression of the identification dimensions on extraversion and neuroticism.

	Cognitive identification	Affective identification
Gender	−.01	−.02
Tenure	−.08	−.09
Prestige	.12*	.39**
Extraversion	.10	.16**
Neuroticism	.19**	.05
F	3.82**	14.80**
R^2	.05	.18

$N = 351$.
*$p < .05$;
**$p < .01$.

Hypothesis 3 predicted that the two identification dimensions would contribute uniquely to (a) commitment, (b) satisfaction, (c) OCB, and (d) organizational involvement. We tested this with multivariate regression (Table 4), with the control variables in the first step and the two identification dimensions in the second step. Because regression controls for each of the other independent variables in the model, the beta weights reflect the independent prediction of each independent variable. Additionally, because the measures showed a moderate intercorrelation, this provides a relatively stringent test of the hypotheses. Supporting Hypothesis 3(a), both cognitive ($\beta = .23$, $p < .01$) and affective identification ($\beta = .57$, $p < .01$) were significant, accounting for 44.5 per cent of the variance in organizational commitment over and above the controls. Supporting Hypothesis 3(b), both cognitive ($\beta = .07$, $p < .05$) and affective identification were significant ($\beta = .41$, $p < .01$), accounting for 17.6 per cent of the variance in satisfaction beyond the controls. Supporting Hypothesis 4(c), both cognitive ($\beta = .18$, $p < .01$) and affective identification ($\beta = .22$, $p < .01$) were significant, accounting for 10.4 per cent of the variance in OCB beyond the controls. For organizational involvement activities, only affective identification ($\beta = .15$, $p < .01$) was significant, accounting for 3.1 per cent of the variance. For professional development activities, both cognitive ($\beta = .13$, $p < .01$) and affective identification ($\beta = .09$, $p < .05$) were significant, accounting for 3.2 per cent of the variance. Together, these results provide partial support for Hypothesis 3(d).

Hypothesis 4 predicted that affective identification would account for incremental validity in attitudes and behaviors over and above the most commonly used measure of organizational identification. We tested this by running the same regressions as those used for Hypothesis 3, but with the Mael identification measure as one of the control variables. In three of four cases, affective identification accounted for incremental variance. For commitment, both cognitive ($\beta = .07$, $p < .05$) and affective identification ($\beta = .47$, $p < .01$) were significant, accounting for an additional 15.4 per cent of the variance. For satisfaction, affective identification was significant ($\beta = .36$, $p < .01$), accounting for an additional 8.6 per cent of the variance. For OCB, affective identification was significant ($\beta = .12$, $p < .01$), accounting for 1.0 per cent additional variance. Similarly, affective identification was significant for organizational involvement ($\beta = .10$, $p < .01$). Neither dimension was significant for professional development behaviors. These results provide partial support for Hypothesis 4. Moreover, they suggest that the Mael scale is more cognitive than affective in nature, which is consistent with the bivariate relationships.

Finally, we examined our research question related to the dynamic nature of identification—whether one dimension is a necessary precondition for the other. To examine this question, we collected additional data from 152 of the Study 2 participants one year after they had completed the initial survey. We asked them to complete the identification measures again. Coefficient alpha for the two dimensions was .84 for cognitive and .90 for affective. A comparison of those who completed the survey both years with those who only completed the survey the first year revealed no significant differences in gender, perceptions of prestige, or either identification dimension in year 1. As

Table 4. Study 2 regression of outcomes on identification.

	Commitment	Satisfaction	OCB	Organizational involvement	Professional development activities
Gender	−.02	.04	.10**	.12**	.08*
Tenure	−.01	−.02	.02	.19**	.17**
Prestige	.12**	.28**	.14**	.02	.02
Cognitive identification	.23**	.07*	.18**	.07	.13**
Affective identification	.57**	.41**	.22**	.15**	.09*
F	181.85**	86.27**	30.86**	14.12**	10.80**
R^2	.56	.38	.18	.09	.07

$N = 724$.
*$p < .05$;
**$p < .01$.

expected, however, there was a significant difference in tenure ($p < .01$), such that the students who participated only in year 1 had slightly higher tenure in the school (3.38 years, $SD = 0.54$) than those who participated in both years (3.00 years, $SD = 0.28$). This was because the students who participated in year 1 included students who graduated after year 1 and thus could not participate in year 2.

In order to determine a causal direction between the dimensions, we would need to satisfy three conditions: (i) show covariance between the dimensions, (ii) establish temporal precedence of one dimension before the other, and (iii) remove alternative explanations for the results (Cook & Campbell, 1979). To test whether people develop first one kind of identification and then the other, we first examined the bivariate correlations across years and then ran polynomial regressions for the year 2 dimensions on both of the year 1 dimensions (i.e., year 2 affective identification was regressed on year 1 cognitive and affective identification, their interaction term, and the squared terms, as was year 2 cognitive identification). We then plotted the results by using response surface methodology (Edwards & Parry, 1993).

The bivariate correlations for this subsample indicated that the strongest correlation was cognitive identification across years ($r = .52$, $p < .01$), followed by affective identification across years ($r = .26$, $p < .01$). The correlation of the cognitive dimensions across years was significantly higher than the correlation of affective identification across years ($z = 2.68$, $p < .01$). This indicates that in our data, cognitive identification was more stable over time than affective identification.

In the polynomial regression analyses, neither dimension in year 1 added incremental variance to the other dimension in year 2 (while controlling for year 1 values of the other dimension). The interaction term, however, was significant in predicting year 2 affective identification, and the squared term for year 1 affective identification was significant in both equations. We present graphically the surface plots in Figures 1 and 2. The cognitive identification surface indicates that the highest levels of year 2 cognitive identification were predicted by high levels of year 1 cognitive identification and low levels of year 1 affective identification (the top right corner of the plot), whereas the lowest levels were predicted by low levels of year 1 cognitive identification and moderately high levels of affective identification (near the bottom left corner of the plot). The significant squared term for year 1 affective identification is evident in the U curve from left to right, especially at high levels of year 1 cognitive identification.

We also tested the slopes and curvature along the $Y = X$ line (from the front corner to the back corner of the plot) and the $Y = -X$ line (from the left corner to the right corner of the plot) by using the LMATRIX function of SPSS. This function creates linear combinations of coefficients representing both the slope and the curve of these lines and
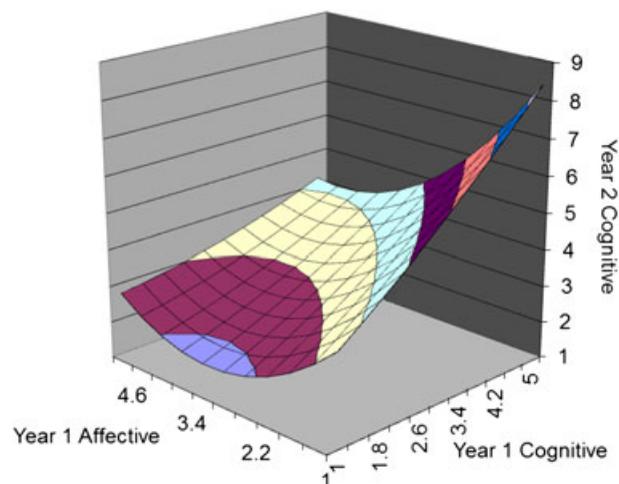

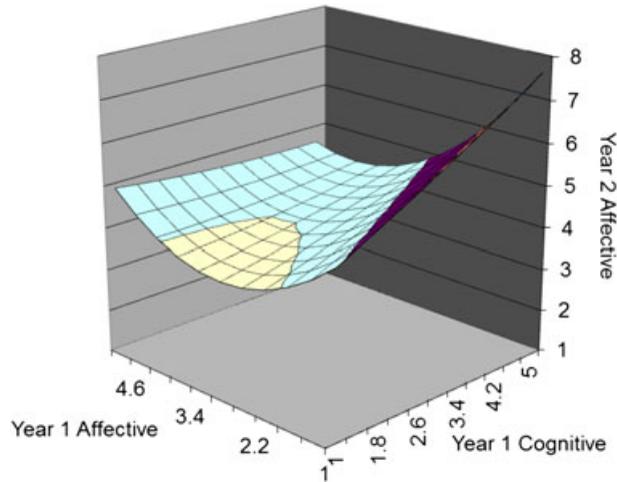Figure 1. Surface plot of year 2 cognitive identification.

Figure 2. Surface plot of year 2 affective identification.

are tested in terms of whether they differ significantly from 0. For the $Y = X$ line, the slope was not significant ($b = -.93$, $SE = .62$, ns) but the curve was ($b = .18$, $SE = .09$, $p < .05$), indicating a significant U shape from front to back. For the $Y = -X$ line, the slope was significant ($b = 3.24$, $SE = 1.19$, $p < .01$) but the curve was not ($b = .62$, $SE = .34$, ns), indicating a positive linear slope from left to right.

Similarly, the affective identification surface shows the highest levels of affective identification at high levels of year 1 cognitive identification and low levels of affective identification, and the lowest levels at low levels of year 1 cognitive identification and moderate levels of year 1 affective identification. The U curve associated with year 1 affective identification is not as steep as in the cognitive surface, but it is clear, especially at high levels of cognitive identification. Tests of the $Y = X$ line indicated that neither the slope ($b = -.99$, $SE = .55$, ns) nor the curve ($b = .15$, $SE = .08$, ns) was significant, reflecting a flat line from front to back in the surface. Tests of the $Y = -X$ line, however, were significant for slope ($b = 2.50$, $SE = 1.05$, $p < .05$), but not for the curve ($b = .54$, $SE = .30$, ns), indicating a positive linear slope.

Together, these surfaces point to a critical role for year 1 cognitive identification in facilitating identification for both dimensions in year 2. High levels of year 1 affective identification were not necessary for bringing about high levels of either identification dimension in year 2; indeed, the highest levels of year 2 identification was when *low* levels of year 1 affective identification were coupled with high levels of year 1 cognitive identification. Thus, it appears that in our data, cognitive identification may be a precondition for developing high levels of affective identification, but not vice versa.

Study 2 Discussion

The purpose of Study 2 was to validate the new measures of cognitive and affective identification in a different sample through examining their relationships with personality antecedents, related attitudes, and outcomes. Cognitive identification was predicted by neuroticism, and affective identification was predicted by extraversion, even when controlling for organizational prestige and the other individual variables. Notably, although it was a control variable, prestige showed a much stronger relationship with affective identification than with cognitive identification.

The two identification dimensions showed independent predictive validity of every proposed related attitude and outcome, except for organizational involvement (which was predicted by affective identification alone). In fact, supplementary hierarchical regressions revealed that the dimensions accounted for roughly equal amounts of variance in

the attitudes and behaviors we examined. This should sound as a caution to identity researchers who examine iden-tification solely as a cognitive construct, because the emotional significance that people attach to their identities has at least as much predictive value as the cognitive dimension alone. Additionally, affective identification accounted for incremental variance over and above the most commonly used existing identification measure in predicting job attitudes and behaviors.

Although an alternative explanation for the findings in this study may appear to be common method variance because the measures were all self-reports, we suggest that two characteristics of the data argue against this. First, as can be seen in Table 2, many of the correlations between the variables are near zero, suggesting that common method variance was not necessarily a problem. Second, common method variance could not account for the fact that the identification measures provided independent predictive validity of most of the outcomes. By definition, variance that is shared by the predictors in simultaneous regression becomes attributed to neither one (Cohen & Cohen, 1983). We also followed several steps suggested by Podsakoff et al. (2003) to remove concerns about com-mon method bias. Specifically, we ran partial correlations controlling for the smallest observed correlation as a proxy for common method variance and still found our effects. Additionally, Harman's single factor test revealed that there was more than one factor that fit the data. Therefore, the observed relationships are more likely due to true covariation between the constructs rather than to common method bias.

We also examined the development of identification over time to determine whether one dimension was a necessary precondition for the other. Surface modeling indicated that it is likely that cognitive identification served as a precondi-tion for developing high levels of affective identification. One explanation for this result is that when people clearly define themselves as members of a group (i.e., high cognitive identification), but do not feel good about that group membership (i.e., low affective identification), they enter a state of identity disequilibrium. Such a state is unpleasant for individuals and will motivate them to increase their affective identification. They may do that by seeking out positive aspects of their group that make them feel proud, happy, and generally good about their group membership.

However, sometimes individuals cannot find aspects of a group membership that make them feel good. These individuals strongly define themselves as group members, but do not feel good about their membership in that group. In other words, such individuals are stuck in a group they do not like very much. The way to resolve this imbalance is by somewhat paradoxically strengthening their cognitive identification with the group even more. Strengthening one's cognitive identification and self-categorization with a group is pleasurable because it has the effect of demarcating the group boundary more clearly, which gives the group an exclusive feel, if only in one's own mind. This may explain why individuals with strong cognitive identification and weak affective identification tended to have the highest level of cognitive identification in the subsequent period.

Study 3

We conducted Studies 1 and 2 on relatively homogeneous samples of undergraduate students. Thus, questions arise regarding the external validity of our findings and specifically whether they will generalize to employees in work settings. Therefore, in Study 3, we examined the new identification measures in a field sample of full-time workers by investigating the relationship between cognitive and affective identification and a reduced set of antecedents and outcomes.

Method

Participants and procedure
One hundred fifty-six employees of a large Midwestern university participated in the study. We recruited them through an e-mail request sent to a randomly selected group of members of two university unions, and we

compensated them $10 each for their participation. The participants held jobs in administrative or secretarial work (37 per cent), research activities (17 per cent), information technology (15 per cent), curriculum and development (11 per cent), communications and coordination (10 per cent), accounting (4 per cent), and other types of work (6 per cent); 73.1 per cent were women, 70.3 per cent were married, the mean age was 43.5 years ($SD = 9.9$), and their mean tenure at their current job was 9.8 years ($SD = 8.9$). Because tenure has been shown to be a valid predictor of identification in previous research, we entered it as a control variable in the multivariate regression analyses. Participants completed the personality survey first and then two weeks later completed the other measures.

Measures

We assessed cognitive and affective identification by using the measures developed in Study 1. In this study, we asked the participants to consider both their membership in their department and with the university as a whole. Thus, they completed each measure twice: once with the department as the target of identification and once with the university as a target. Coefficient alphas for cognitive identification were both .88 for the department as a target and for the university as a target; alphas for affective identification were .90 for the department as a target and .84 for the university as a target.

As in Study 2, we measured extraversion and neuroticism by using the 12-item scales of the NEO-PI-R. Coefficient alphas in this sample were .77 for extraversion and .85 for neuroticism. We measured job satisfaction with a 5-item measure from Brayfield and Rothe (1951). Coefficient alpha in our sample was .89.

Results and Discussion of Study 3

Table 5 displays the means, standard deviations, and intercorrelations of the study variables. Interestingly, the correlation between the two identification dimensions varied depending upon the target. With the department as the target of identification, the dimensions correlated at only .24 ($p < .01$), but with the university as the target, they correlated at .44 ($p < .01$). This may suggest that as the referent becomes more proximal, cognitive and affective identification become more distinct from each other. Although not hypothesized, this appears to be consistent with construal level theory (Liberman, Trope, & Stephan, 2007), which proposes that as the psychological distance between an individual and an object increases, the individual's perceptions of that object become more abstract and global. In the case of identification with close (department) and distant (university) targets, this would suggest that individuals distinguish less between cognitive and affective identification at higher levels.

Table 5. Study 3 means, standard deviations, and intercorrelations.

	Mean	SD	1	2	3	4	5	6	7	8
1. Cognitive ID (department)	2.84	0.99	(.88)							
2. Affective ID (department)	3.87	0.82	.24**	(.90)						
3. Cognitive ID (university)	2.62	0.94	.58**	.18*	(.88)					
4. Affective ID (university)	4.02	0.64	.18*	.42**	.44**	(.84)				
5. Neuroticism	2.49	0.65	.21**	−.22**	.17*	−.09	(.84)			
6. Extraversion	3.50	0.53	.05	.19*	.11	.22**	−.30**	(.79)		
7. Job satisfaction	3.86	0.85	.13	.65**	.06	.34**	−.31**	.26**	(.89)	
8. Gender[1]	1.27	0.45	.01	.01	.00	−.17*	−.01	−.04	.00	
9. Tenure	9.75	8.90	.11	−.02	.08	.06	−.14	−.09	.01	−.01

$N = 156$. Coefficient alpha is on the diagonal.
[1]Gender was coded as 1 = *female*, 2 = *male*.
*$p < .05$;
**$p < .01$.

The bivariate correlations of the identification measures with the personality factors were largely similar to those found in Study 2. Extraversion was positively correlated with affective identification with both the department ($r = .19$, $p < .05$) and the university ($r = .22$, $p < .01$), but was not significantly correlated with cognitive identification with either target, lending additional support for Hypothesis 1. With the department as the target of identification, neuroticism showed a significant positive correlation with cognitive identification ($r = .21$, $p < .01$). Interestingly, neuroticism also showed a significant *negative* correlation with affective identification ($r = -.22$, $p < .01$). With the university as the target of identification, neuroticism was positively related to cognitive identification ($r = .17$, $p < .05$) but unrelated to affective identification ($r = -.09$, *ns*). This lends additional support for Hypothesis 2.

Regressing the identification measures on the personality factors also replicated Study 2. Controlling for gender, tenure, and extraversion, neuroticism significantly predicted cognitive identification with the department ($\beta = .28$, $p < .01$) and the university ($\beta = .26$, $p < .01$). Although not hypothesized, extraversion also predicted cognitive identification with the university ($\beta = .21$, $p < .05$), but not with the department. Extraversion significantly predicted affective identification with the university beyond the controls and neuroticism ($\beta = .23$, $p < .01$), but did not significantly predict affective identification with the department ($\beta = .13$, *ns*). Thus, Hypotheses 1 and 2 were largely supported. We then regressed job satisfaction on the identification measures at both levels (department and university), and only affective identification with the department was a significant predictor ($\beta = .62$, $p < .05$). This was similar to Study 2, where affective identification accounted for most of the variance in satisfaction. Thus, Hypothesis 3(b) was partially supported in this study.

General Discussion

The purpose of this series of studies was to examine two dimensions of social identification—cognitive and affective—and highlight their relationships with personality antecedents and attitudinal and behavioral outcomes. Because no measures that expressly measured these dimensions existed, we developed new 4-item measures that were shown to be reliable, empirically distinct, and possess both construct and predictive validity.

This research makes several contributions to social identification research. First, we have outlined two motives for social identification that are associated with the two dimensions of identification. Consistent with past theorizing, we describe why people identify with social groups (self-enhancement and uncertainty reduction; Hogg, 2000; Reid & Hogg, 2005; Tajfel & Turner, 1979) and how these cause people to identify either cognitively or affectively with social groups. Key to this conceptualization is the affective dimension of identification. Although from its inception, social identity theory identified affect as being a primary component of identification, organizational researchers tended to downplay this dimension while emphasizing the cognitive dimension. This may at least partially explain why a significant number of studies failed to support the self-enhancement motive of social identification (Rubin & Hewstone, 1998). By including this neglected affective dimension of social identification, we reconcile original conceptualizations of social identities with current ones, resulting in a more complete understanding of the construct.

This research is the first to explicitly measure cognitive and affective forms of identification. Empirically, we showed that this was a meaningful distinction and that individuals could reliability differentiate between these different forms of identification. In fact, although related, there is considerable independence between cognitive and affective identification (i.e., they only share about 16 per cent of variance in common). If existing measures are primarily cognitive, they may be under-predicting attitudes and behaviors. Indeed, we found that our measures of cognitive and affective identification provided incremental prediction of work attitudes and behaviors over the most commonly used measure of identification. This suggests that the use of a more differentiated conception of identification may not only enable the creation of more sophisticated theoretical models but can also yield stronger empirical prediction.

Nearly all research on organizational identification assumes that identification motivates individuals to exert themselves on the job (Ashforth & Mael, 1989). Yet, this relationship is not always significant (Michel & Jehn,

2003), and when it is, the relationship has been found to be relatively weak (Riketta, 2005). The weak association between identification and employee performance has exposed organizational identification to criticism for being a construct that is theoretically interesting, yet inconsequential within organizations (Riketta, 2005). Our results suggest that rather than being weak, the relationship has been left unobserved because until now identification measures have excluded the affective aspect of identification.

Our results also help place cognitive and affective identification into a broader nomological network of constructs. Although a number of constructs we investigated have been investigated before (e.g., satisfaction, citizenship behaviors), some have not been studied before (e.g., personality). The significant relationship between identification and personality suggests that identification research might profit from a movement into new directions. In particular, the association of extraversion with affective identification via the self-enhancement motive and neuroticism with cognitive identification via the uncertainty-reduction motive was replicated across two samples.

Two of the studies examined the relationships of the identification dimensions with satisfaction. Both of these studies found that when various forms of satisfaction (organizational and job) were regressed on both dimensions, affective identification was the strongest predictor. Thus, it appears that the cognitive sense of social identification is not closely related to one's sense of satisfaction, but the emotional significance one attaches to one's social identity is. The identification dimensions were also significantly related to commitment, OCB, and organizational involvement.

Limitations

Clearly, one concern in this series of studies could be common method variance. Our purpose in these studies, however, was to examine the value of conceptualizing identification as separate dimensions. Thus, our interest was more on establishing the construct validity of the new measure than on providing strict tests of the relationship of identification with other constructs. Additionally, as Podsakoff et al. (2003, p. 887) pointed out, it is not always possible to separate sources and methods in psychological research. In particular, they note, "researchers examining the relationships between two or more employee job attitudes cannot obtain measures of these constructs from separate sources." Therefore, where possible, we separated the measurement of predictor and criterion variables in time. Notably, as pointed out in the discussion of Study 2, the near-zero correlations between some of the variables, and the fact that the identification measures provided independent predictive validity of many of the outcomes, argue against common method variance as an alternative explanation.

A second limitation of this series of studies is that all three samples were drawn from people in university communities. The concern of the homogeneity of the samples is alleviated somewhat by the fact that the sample in Study 3 was full-time university employees and not students. It may be, however, that the external validity of the findings may be limited if people in university communities are somehow different in their identification and thus are not fully representative of the wider population of organizational members.

Directions for Future Research

Conceptually, social identities are not merely cognitive constructions. People also attach varying levels of emotional significance to their social identities. Yet, most research on social identification—particularly in organizational settings—has ignored the affective dimension of social identification. We hope that our research, and in particular our development of reliable and valid measures of cognitive and affective identification, will spur further research that examines both dimensions of social identification. We offer five suggestions for future research.

First, social identity and self-categorization theories assert that social identities are enacted on the basis of situational cues. We suggest that an interesting avenue of research would be to examine the unique effects of these situational cues on the two dimensions. Some cues may cause both dimensions to become salient (Ashforth & Johnson,

2001), whereas others may stimulate only one of the dimensions. For example, a threat against a social group from an outgroup may stimulate both dimensions, but an ingroup conflict may stimulate only one.

Second, the theories assert that people hold multiple social identities. For example, an individual may enact one social identity when at work, but another when out to lunch with friends. It would be interesting to examine whether different social identities held by the same person vary in their levels of cognitive and affective identification. One social identity may be very cognitively self-defining, but hold little emotional significance for the individual.

Third, the multiple identities that people hold vary in terms of psychological distance and are often nested within each other (Ashforth & Johnson, 2001). In Study 3, we found that the correlation between the two dimensions was lower with the department as the target of identification than it was with the organization as the target. Consistent with construal level theory (Liberman, Trope, & Stephan, 2007), this may suggest that when the targets of identification are psychologically closer, the identification dimensions become more distinct from each other. We encourage future research that would investigate how the dimensions relate to each other at varying levels of psychological distance in other ways that construal levels are conceptualized. This could include targets of identification that vary in temporal construal (present vs. future or past targets) and physical distance (co-located vs. dispersed targets).

Fourth, very little social identity research has examined the effects of social identities on non-attitudinal outcomes. It may be that one of the dimensions has a stronger relationship with these sorts of outcomes than the other. Although we examined two types of behaviors in this study (OCB and involvement), other behaviors that are critical to organizational functioning may also be affected by the two dimensions. In particular, it would be interesting to see research that outlines the effect of the identification dimensions on performance, absenteeism, and turnover.

Finally, research on social identity threat has found that external threats to an ingroup can cause members to actually increase their identification with the threatened group. This appears to be the case even if the ingroup is of low status or carries a social stigma (Derks, van Laar, & Ellemers, 2009). To date, no research has examined whether threats have differential effects on cognitive and affective identification. It could be that a threat may cause members to cognitively define themselves more strongly as group members while simultaneously feeling less pride in their threatened group membership. Social identity threats may also interact with personality in predicting changes in identification. Members high in neuroticism may enhance their cognitive identification more under identity threat than those low in neuroticism, and extraverted members may decrease their affective identification more than introverted members.

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Appendix 1: Comprehensive list of published organizational identification measures[3]

1. Gouldner (1957)

   Would you leave your college if you were offered a job at Harvard or Princeton (at a lower salary, same salary, higher salary, wouldn't leave)?

   Although there are probably reasons for this, it really is bad that salary is so low. (strongly agree, strongly disagree)

   It is unfortunate, but true that there really are few people around here with whom one can share his professional interests. (strongly agree, strongly disagree)

   About how many faculty members do you feel you know well? (1–5, 5–10, 10 or more)

2. Hall et al. (1970)

   This organization is a large family in which I feel a sense of belonging.

   (COGNITIVE) I feel a strong sense of identification with this organization.

   (AFFECTIVE) I feel pride in being part of this organization.

   I feel that this organization is recognized as a leader in applying good principles.

3. Hall and Schneider (1972)

   The company has a fine tradition of worthwhile accomplishment.

   (AFFECTIVE) I feel a sense of pride in working for the company.

   I feel the company is doing an important job in advancing technology.

4. Rotondi (1975)

   (AFFECTIVE) I take pride in being a part of this organization.

5. Cheney (1983) OIQ

   I would probably continue working for this organization even if I did not need the money.

   In general, the people employed by this organization are working toward the same goals.

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[3]There are many items that have been referred to as "identification" that we are unsure whether they tap identification or a related construct. We did not label these as either "cognitive" or "affective."

(AFFECTIVE) I am proud to be an employee of this organization.

This organization's image in the community represents me well.

(COGNITIVE) I often describe myself to others by saying "I work for this organization" or "I am from this organization."

(COGNITIVE) I try to make on-the-job decisions by considering the consequences of my actions for this organization.

(COGNITIVE) We at this organization are different from others in our field.

I am glad I chose to work for this organization rather than another company.

I talk up this organization to my friends as a great company to work for.

(COGNITIVE) In general, I view this organization's problems as my problems.

I am willing to put in a great deal of effort beyond that normally expected to help this organization to be successful.

I become irritated when I hear others outside this organization criticize the company.

I have warm feelings toward this organization as a place to work.

I would be willing to spend the rest of my career with this organization.

I feel that this organization cares about me.

The record of this organization is an example of what dedicated people can achieve.

I have a lot in common with others employed by this organization.

I find it difficult to agree with this organization's policies on important matters relating to me (R).

(COGNITIVE) My association with this organization is only a small part of who I am (R).

I tell others about projects that this organization is working on.

I find that my values and the values of this organization are very similar.

I feel very little loyalty to this organization (R).

I would describe this organization as a large "family" in which most members feel a sense of belonging.

(COGNITIVE) I find it easy to identify myself with this organization.

I really care about the fate of this organization.

6. Brown et al. (1986)

   (COGNITIVE) I am a person who considers the organization important.

   (COGNITIVE) I am a person who identifies with the organization.

   (COGNITIVE) I am a person who feels strong ties with the organization.

   (AFFECTIVE) I am a person who is glad to belong to the organization.

   (COGNITIVE) I am a person who sees myself as belonging to the organization.

   (COGNITIVE) I am a person who makes excuses for belonging to the organization.

   (COGNITIVE) I am a person who tries to hide belonging to the organization.

   I am a person who feels held back by the organization.

   (COGNITIVE) I am a person who is annoyed to say I'm a member of the organization.

   (COGNITIVE) I am a person who criticizes the organization.

7. Mael and Ashforth (1992)

   (COGNITIVE) When someone criticizes my organization, it feels like a personal insult.

   (COGNITIVE) I am very interested in what others think about this organization.

   (COGNITIVE) When I talk about this organization I usually say "we" rather than "they."

   (COGNITIVE) This organization's successes are my successes.

   (COGNITIVE) When someone praises this organization, it feels like a personal compliment.

   (COGNITIVE) If a story in the media criticized this organization, I would feel embarrassed.

8. Vandenberg, Self, and Seo (1994)

   I feel a sense of "ownership" for this organization rather than being just an employee.

   I talk up the organization to my friends as a great organization to work for.

   I am proud to tell others that I am a part of this organization.

I am willing to put in a great deal of effort beyond that expected in order to help this organization be successful.

I would accept almost any type of job assignment to keep working for this organization.

I find that my values and the values of this organization are similar.

This organization really inspires the very best in me in the way of job performance.

I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.

I really care about the fate of this organization.

(COGNITIVE) For me this is the best of all possible organizations for which to work.

 9. Jetten, Spears, and Manstead (1996)

(COGNITIVE) I feel strong ties to my organization.

10. Huo et al. (1996)

(AFFECTIVE) I am proud to think of myself as a member of the organization I work for.

11. Abrams, Ando and Hinkle (1998)

(COGNITIVE) I feel strong ties with this company.

This company is important to me.

(AFFECTIVE) I feel proud to be a member of my company.

(AFFECTIVE) I often regret that I belong to this company.

(AFFECTIVE) I feel a strong sense of belonging to this company.

(COGNITIVE) Belonging to this company is an important part of my self-image.

(AFFECTIVE) I am glad to be a member of this company.

12. Riordan and Weatherly (1999)

(COGNITIVE) It is important to me that others think highly of my organization.

(COGNITIVE) It is important to me that others do not criticize my organization.

It is important to me that my organization is successful.

(COGNITIVE) It is important to me that I am a member of my organization.

It is important to me that my organization is acknowledged for its success.

In my organization there is a lot of team spirit among the members.

13. Millward and Brewerton (1999)

Working for this organization is important to me.

My job is important to me.

I am willing to work extra hours without pay to finish the job.

(COGNITIVE) I feel that I belong in this organization.

I am satisfied with my job.

14. Scott and Timmerman (1999) Short form of OIQ

I am willing to put in a great deal of effort beyond what is normally expected to help my (work team/department, employing organization, occupation, or personal interest) be successful.

I feel very little loyalty to my (target) (R).

I really care about the fate of my (target).

I try to make relevant decisions by considering the consequences of my actions to my (target).

15. Bergami and Bagozzi (2000)

(COGNITIVE) Please indicate the extent to what degree your self-image overlaps with this organization's image. (not at all/very much)

(COGNITIVE) Please describe your relationship with this organization by using the following diagrams. Imagine that the circles at the left represent your own personal identity (what describes you as a unique individual), while the circles at the right represent the identity of this organization. Which diagram best describes the level of overlap between your own identity and this organization's identity? (Far apart/complete overlap)

16. Martin and Epitropaki (2001)

(AFFECTIVE) I am quite proud to be able to tell people who it is I work for.

(COGNITIVE) I feel myself to be a part of the organization.

17. Tyler and Blader (2001)

My work is important to the way I think of myself as a person.

(COGNITIVE) When someone praises the accomplishments of my work organization, it feels like a personal compliment to me.

(COGNITIVE) When I talk about where I work I usually say "we" rather than "they."

I feel a sense that I personally belong to where I work.

(COGNITIVE) I feel that the problems of my organization are my own personal problems.

(COGNITIVE) When someone from outside criticizes my organization, it feels like a personal insult.

I feel like a valued member of my work organization.

When something goes wrong in my work setting, I feel a personal responsibility to fix it.

The organization for which I work says a lot about who I am as a person.

I do not feel like an important part of my work setting (r).

18. Bartel (2001)

(COGNITIVE) To what extent does your own sense of who you are (i.e., your personal identity) overlap with your sense of what the organization represents (i.e., the organization's identity)? (not at all/to a great extent)

19. Reade (2001) Local organizational identification

This company has a reputation for providing excellent products.

This company stands out as a leader in the consumer products industry.

20. Reade (2001) Global organizational identification

This company's products enjoy a good reputation worldwide.

This company is a worldwide leader in the manufacture of consumer products.

21. Smidts, Pruyn, and van Riel (2001)

(COGNITIVE) I have strong ties with this organization.

I experience a strong sense of belonging to this organization.

(AFFECTIVE) I feel proud to work for this organization.

I am sufficiently acknowledged in this organization.

(AFFECTIVE) I am glad to be a member of this organization.

22. Bhattacharya and Elsbach (2002) Short form of Mael and Ashforth

(COGNITIVE) My organization's successes are my successes.

(COGNITIVE) When someone praises my organization, it feels like a personal compliment.

(COGNITIVE) When someone criticizes my organization, it feels like a personal insult.

23. Jetten, O'Brien, and Trindall (2002)

(COGNITIVE) I am pleased to work for this organization.

24. Foreman and Whetten (2002) Cognitive Identification

In general, I believe that this type of organization. . .

. . .is the lifeblood of the community.

. . .has outlived its usefulness.

. . .has forgotten how important their members are.

. . .is of little value to small customers.

. . .is struggling to find its niche.

25. Foreman and Whetten (2002) Pragmatic identification

Compared to similar businesses, this type of organization, in general. . .

. . .has staff and managers with superior professional skills.

. . .offer greater opportunity for customers and members to influence the way things are done.

. . .are more innovative in developing new products and services.

. . .better understand their customers' needs and concerns.

. . .are more supportive when members and patrons have financial problems.

. . .are better managed and operated.

. . .have a friendlier and more helpful atmosphere.

26. van Knippenberg et al (2002)

    (COGNITIVE) I identify strongly with this organization.

    (COGNITIVE) When someone criticizes this organization, it feels like a personal insult.

    (COGNITIVE) I feel strong ties with this organization.

27. Van Dick and Wagner (2002)

    In any case, I want to stay in the staff of the present school.

    I do not like my organization very well.

    I would rather be in another organization.

28. Roccas (2003)

    (COGNITIVE) Being a part of this organization is an important part of my identity.

    (COGNITIVE) When I talk about other members of this organization I usually say "we" rather than "they."

    (COGNITIVE) It is important to me that I am a member of this organization.

29. van Leeuwen, van Knippenberg and Ellemers (2003) Study 1

    (COGNITIVE) I identify with my organization.

    I see myself as a typical member of my organization.

    (AFFECTIVE) I like being part of my organization.

    I feel committed to my organization.

30. van Leeuwen, van Knippenberg, and Ellemers (2003) Study 2

    (COGNITIVE) I feel strong ties with my organization.

    I see myself as a typical member of my organization.

    (AFFECTIVE) I like being part of my organization.

31. Randel and Jaussi (2003)

    (COGNITIVE) When others from this organization are successful, I feel that all of us from this organization have been successful.

    (COGNITIVE) I share in the successes of others within this organization.

    (COGNITIVE) When others within this organization are recognized for their accomplishments, I feel like I have accomplished something too.

32. Christensen et al. (2004). On 9-point scales, the items assessed (a great deal/not at all)

    How much do you agree with the attitudes and values of other organization members?

    How important is personifying these values and attitudes to you?

    How important is it for you to be similar to other organization members?

33. Gautam et al. (2004) Short form of the OIQ

    I would probably continue working for [organization] even if I did not need the money.

    (AFFECTIVE) I am proud to be an employee of [organization].

    (COGNITIVE) I often describe myself to others by saying "I work for [organization]" or "I am from [organization]."

    (AFFECTIVE) I am glad I chose to work for [organization] rather than another Company.

    I am willing to put in a great deal of effort beyond that normally expected to help [organization] to be successful.

    I have warm feelings toward [organization] as a place to work.

    I have a lot in common with others employed by [organization].

    I tell others about projects that [organization] is working on.

34. Van Dick, Wagner, Stellmacher, and Christ (2004)

    (COGNITIVE) I identify myself as a member of this organization.

    (COGNITIVE) Being a member of this organization reflects my personality well.

    I like to work for this organization.

    I think reluctantly about this organization.

    (COGNITIVE) Sometimes I'd rather not say that I'm a member of this organization.

My organization is positively judged by others.

I work for this organization above what is absolutely necessary.

35. Polzer (2004) Study 1

(COGNITIVE) I identify with this organization.

36. Polzer (2004) Study 2

(COGNITIVE) I identify with this organization.

(AFFECTIVE) I am glad to belong to this organization.

I feel held back by this organization.

I think this organization worked well together.

I see myself as an important part of this organization.

I do not fit in well with the other members of this organization.

I do not consider the organization to be important.

I feel uneasy with the members of this organization.

(COGNITIVE) I feel strong ties to this organization.

37. Hogg et al. (2005)

I feel that I am similar to other organization members.

I like other organization members.

I feel I fit well in this organization.

(COGNITIVE) Being a member of this group is important to me.

(COGNITIVE) I identify with this organization.

I feel a sense of belonging to this organization.

(COGNITIVE) I feel strong ties with this organization.

I feel committed to this organization.

I match very well to the distinctive features of this organization.

38. Harris and Cameron (2005)

(AFFECTIVE) In general, I am glad to be a member of this organization.

(AFFECTIVE) I often regret that I am a member of this organization.

(AFFECTIVE) I don't feel good about being a member of this organization.

(AFFECTIVE) Generally, I feel good when I think about myself as a member of this organization.

I have a lot in common with other people in this organization.

I feel strong ties to other people in this organization.

I find it difficult to form a bond with other people in this organization.

I don't feel a sense of being 'connected' with other people in this organization.

(COGNITIVE) I often think about the fact that I am a member of this organization.

(COGNITIVE) Overall, being a member of this organization has very little to do with how I feel about myself.

(COGNITIVE) In general, being a member of this organization is an important part of my self-image.

(COGNITIVE) The fact that I am a member of this organization rarely enters my mind.

39. Boen, Vanbeselaere, and Cool (2006)

I feel very connected to this organization.

(AFFECTIVE) I am proud that I can work for this organization.

This organization means a lot to me.

40. Edwards and Peccei (2007)

(COGNITIVE) My employment in the organization is a big part of who I am.

(COGNITIVE) I consider myself an organization person.

What the organization stands for is important to me.

I share the goals and values of the organization.

(COGNITIVE) My membership in the organization is important to me.

(COGNITIVE) I feel strong ties with the organization.