A TRIPARTITE MODEL OF GROUP IDENTIFICATION
Theory and Measurement

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Group identification is defined as member identification with an interacting group and is distinguished conceptually from social identity, cohesion, and common fate. Group identification is proposed to have three sources: cognitive (social categorization), affective (interpersonal attraction), and behavioral (interdependence). Inconsistent use of the term and problematic measurement mar existing literature on group identity and group identification. A new group identification scale, composed of three subscales that match the tripartite model for the cognitive, affective, and behavioral sources, is presented and its psychometric properties described.

Group identification (also called group identity, in-group identity, and intragroup identification) has appeared as a concept in a wide range of research over the past few decades (Bat-Chava, 1994; Brewer, 1979; Brewer & Kramer, 1986; Duck, Terry, & Hogg, 1998;

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Ellemers, Spears, & Doosje, 1997; Ellemers, Van Rijswijk, Roefs, & Simons, 1997; Terry & Hogg, 1996). A close reading of that literature, however, reveals general confusion about what, exactly, group identification is. In some contexts, it means social identity (Conover & Feldman, 1984; Miller, Gurin, Gurin, & Malanchuk, 1981); in others, it means cohesion (Duckitt & Mphuthing, 1998). It has been measured with many scales (e.g., Bouas & Arrow, 1996; Brown, Condor, Mathews, Wade, & Williams, 1986; Duck, Hogg, & Terry, 1995; Ethier & Deaux, 1994; Hinkle, Taylor, Fox-Cardamone, & Crook, 1989; Riordan & Weatherly, in press; Spears, Doosje, & Ellemers, 1997) and has also been invoked as an explanation with no attempt at measurement (e.g., Brewer, Weber, & Carini, 1995; Dawes, McTavish, & Shaklee, 1977).

Such differences in usage and measurement make it difficult to know what group identification means. Is it unitary or multidimensional? Is it a group-level construct, like cohesion? Is it an individual-level construct, like social identity? This article addresses such questions by integrating several bodies of literature and identifying members of interacting small groups as the locus of group identification. We note both the similarities and differences between group identification and related concepts and propose that group identification has three sources: cognitive, affective, and behavioral. We close by introducing a new group identification scale matching our theoretical view.

TRIPARTITE VIEW OF GROUP IDENTIFICATION

The first explicitly tripartite view of intragroup group identification is presented in Hinkle et al. (1989). This view, which equates group and social identification, was based on Tajfel's (1978) early social identity discussion. Hinkle et al. developed a scale to measure three proposed aspects of group identification: cognitive, evaluative, and affective. Factor analysis yielded three factors, which they labeled affective, cognitive, and correspondence between group and individual interests. Unfortunately, items on

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these scales do not map well to the labels. The items on the group/individual correspondence factor—"I feel uneasy with the members of this group" and "I feel held back by this group"—both seem affective and are the only reverse-scored items. Thus, we interpret this as a negative affect factor. One of two items loading on the cognitive factor, "I feel strong ties to this group," also emphasizes emotional connections over cognition.

Bouas and Arrow (1996) agreed that group identity includes cognitive and affective components but differed on the third element in their model. They defined group identity as "awareness of and attraction toward an interacting group of interdependent members, by self-identified members of that group" (pp. 155-156) and then decomposed this definition into cognitive, affective, and behavioral components. Social identity literature emphasizes the cognitive aspect—awareness of a group and self-categorization of oneself as a member (Tajfel, Billig, Bundy, & Flament, 1971). The cohesion literature emphasizes the affective aspect, focusing on interpersonal attraction (e.g., Festinger, Schachter, & Back, 1950; Piper, Marrache, Lacroix, Richardsen, & Jones, 1983; Turner, Hogg, Turner, & Smith, 1984). The common fate literature emphasizes the behavioral aspect by pointing to the importance of interdependence (Brewer & Kramer, 1986; Chen, 1996).

Using each proposed component to generate predictions about the development of group identity, Bouas and Arrow (1996) tested their tripartite view in a longitudinal study of groups. They also examined individual differences in group identity conceived as an individual variable. Some support was found for patterns based on a changing contribution of common fate and interpersonal attraction over time; little support was found for predictions based on social identity. The strongest finding was evidence of individual differences among members in their propensity for high or low group identity. An individual's group identity score in one group correlated significantly ($r = .42$, $p < .0001$) with that same individual's group identity score in a second group. This suggests that although it may be useful to aggregate member scores to create an overall group identity score, identification varies among group members, or members assess group identity differently, or both.

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Building on Bouas and Arrow's (1996) findings, we have modified the tripartite view to construe cognitive, affective, and behavioral aspects not as components of a multidimensional construct but as multiple sources of group identification. We define group identification as member identification with an interacting group.

Scholars sometimes conflate two levels of group identity (see Bouas & Arrow, 1996; Worchel, 1996, for examples), using the same term to refer to the individual-level process of identification and to group-level identity that is collectively established and can be perceived by members and nonmembers. To retain these two senses but distinguish them linguistically, we propose that the term *group identification* be used to refer to the individual-level process, and the term *group identity* be used to refer to the distinctive identity of the group as a collective, analogous to the term *corporate identity*. We follow this convention in the rest of this article.

Although we view group identification as occurring at the individual level, the sources of group identification vary in level. The cognitive source taps how social identity and social categorization—aspects of individual cognition and the self—influence group identification. The affective source focuses on the contribution of interpersonal attraction (interpersonal level), and the behavioral source focuses on the group-level construct of cooperative interdependence. The sources are discussed below.

SOCIAL IDENTITY: THE COGNITIVE SOURCE

We see group identification as conceptually distinct from social identity, which refers primarily to people's identification with broad social categories such as race or gender but is also applied to interpersonal roles such as lover or husband (Deaux, Reid, Mizrahi, & Ethier, 1995). The social identity approach views group membership as a psychological state that leads to a collective representation of who one is and how one should behave (Hogg & Abrams, 1988). Although abundant research attests to the importance of this cognitive process of self-categorization, we view it as different from group identification for three reasons.

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Distinguishing group identification from social identity. First, according to our definition, group identification occurs in interacting groups. The social identity approach omits any requirement for group interaction (Lau, 1989). Some theorists prefer not to call categories of unconnected individuals groups (e.g., Merton, 1949). The emphasis of the social identity literature on the "group in the individual's head" is quite different from the grounded experience of an individual interacting in an actual small group.

A second reason we see social identity as distinct from group identification focuses on the intergroup versus intragroup distinction. Social identity emphasizes self-categorization: Based on shared attributes with others, one defines oneself as a member of a social category (Flippen, Hornstein, Siegal, & Weitzman, 1996; Tajfel et al., 1971). A need for self-esteem motivates one to attain positive distinctiveness for that social category, producing consequences such as in-group bias (Brewer, 1979). Categorization creates an in- versus out-group distinction. Minimal group paradigms that rely on this effect (Jackson & Sullivan, 1987; Tajfel et al., 1971) focus on social identity's impact on intergroup relations. Group identification, however, relates more to intragroup processes: how members identify with each other and with their own group without regard to out-group members. Out-groups may influence group identification but are not necessary to it. A singer may identify with a choir she has joined, for example, without classifying nonmembers (the rest of the congregation or choirs at other churches) as out-group members.

A third reason to view group and social identification as operatively different focuses on the historical construal of the concepts. In its early conception, social identity was seen as a dichotomy: One was either a category member or not (Turner, 1982). In recent years, the term *group identification* has been used almost interchangeably with *social identity* (e.g., Ellemers, Spears, et al., 1997; Spears et al., 1997). However, studies that consistently use the term social identity tend to refer to category membership (e.g., Jackson, Sullivan, Harnish, & Hodge, 1996), whereas group identification is most frequently conceptualized and measured as a continuous variable (e.g., Brown et al., 1986; Hinkle et al., 1989; Riordan &

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Weatherly, in press; Spears et al., 1997). Historically, the literature has treated social identity as a matter of membership and its consequences and group identification as a matter of attachment to a group, which may vary in strength. In this matter, we again find group and social identification to be conceptually distinct.

Cognitive sources of group identification. By distinguishing social and group identification, we do not intend to imply the constructs are unrelated. Rather, we view the cognitive process of self-categorization that is central to social identity theory as a source of group identification. Categorizing oneself as a member of a group is an important cognitive source of group identification.

According to the social identity literature, one's social identity depends on membership in social categories and evaluations of these memberships (Deaux et al., 1995). Deaux and colleagues identified five identity categories, which have different evaluative parameters. Group members bring social identity categories and their evaluative parameters to the group context. One's social identity can either cross-cut (differ from) or overlap with the social identities of other members (Brewer, 1995). To the extent that the social categories being cross-cut are salient to members, cross-cutting could create cognitive conflict, making identification among a group of dissimilar members difficult.

Although Bouas and Arrow (1996) found little support for the effect of cross-cutting versus overlapping social identities on group identification, other studies suggest that group identification is weaker if members' social identities differ. Studies using arbitrary (e.g., overestimators versus underestimators) rather than demographic categories found that cross-cutting social identity within a group inhibits group identification (Gaertner, Mann, Murrell, & Dovidio, 1989; Marcus-Newhall, Miller, Holtz, & Brewer, 1993). Ethier and Deaux (1994) studied Hispanic students moving from home to university. They found ethnic involvement at home tended to lead to students "re-mooring" their social identity at university by getting involved in campus friendships consistent with a Hispanic identity. This shows that previous social identities can influence group identification in a new context. Taken together, these

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findings suggest that the cognitive process of self-categorization can either facilitate or hinder the emergence of group identification.

Hogg and Hains (1996) have shown that social identity affects the type of attraction toward a group and argue that social identification yields depersonalized social attraction based on prototypicality. Depersonalized social attraction is similar to Brewer and Gardner's (1996) group level of self-representation, which leads to an intergroup frame of reference and is likely in common identity groups, in which attraction is to the group rather than its members (Prentice, Miller, & Lightdale, 1994). Hogg and Hains argue that interindividual similarity yields interpersonal social attraction. Interpersonal attraction is similar to Brewer and Gardner's (1996) interpersonal self-representation level, which leads to appropriate role behavior and occurs more in common bond groups, in which attraction is to members rather than the group itself (Prentice et al., 1994).

Depersonalized attraction is an affective consequence of cognitive judgments about joint membership and evokes an intergroup reference frame. Because group identification is an intragroup process, interpersonal attraction is just as important in promoting it. We turn next to this affective source.

COHESION AND INTERPERSONAL ATTRACTION: THE AFFECTIVE SOURCE

Cohesion has been conceptualized in many ways (Drescher, Burlingame, & Fuhriman, 1985; Evans & Jarvis, 1980; Hogg, 1987; Mudrack, 1989; Stokes, 1983), but nearly all definitions include interpersonal attraction (Cartwright, 1968). Some have used cohesion interchangeably with group identification (Duckitt & Mphuthing, 1998). We agree that cohesion is a source of group identification but argue the two constructs are not interchangeable.

Defining cohesion. Perhaps the most well-known definition of cohesion is Festinger et al.'s (1950): "the total field of forces that act on members to remain in the group" (p. 164). This force field has two sources: (a) the group's attractiveness and (b) the group's

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ability to help members achieve their goals. Scholars who take a therapeutic perspective have defined cohesion as connectedness evidenced by working together toward a common therapeutic goal (Budman, Soldz, Demby, Davis, & Merry, 1993). The industrial-organizational literature includes definitions such as commitment to a group task (Goodman, Ravlin, & Schminke, 1987), whereas sports psychologists favor definitions that include quality of teamwork, attraction to group, unity of purpose, and valued roles (Yukelson, Weinberg, & Jackson, 1984).

In reviewing the cohesion literature, Cota, Evans, Dion, Kilik, and Longman (1995) classify conceptions of cohesion as either unidimensional or multidimensional. Unidimensional approaches delineate cohesion's parameters but may underrepresent it. Scholars such as Hogg (1992) and Zaccaro and Lowe (1988) criticize studies that equate cohesion with interpersonal attraction, for example, for their inappropriately narrow conception of cohesion. Multidimensional approaches provide a richer representation but may contain extraneous aspects. Cota et al. (1995) offer a two-dimensional view, distinguishing among cohesion's (a) primary aspects that apply to all groups and (b) secondary aspects that apply to specific types of groups. Primary aspects of cohesion are interpersonal attraction that yields resistance to disruption and consensus among members about behavioral rules and values.

Distinguishing group identification from cohesion. Group identification differs from cohesion in that it involves individual cognition and is meaningful at the individual level (Bouas & Arrow, 1996), whereas cohesion exists at the group and interpersonal levels. This is true whether cohesion is defined as a force field or as an attraction network that resists disruption. Secondary aspects have even less overlap with group identification. Risk-taking, for example, which Cota et al. identify as a secondary aspect in therapy groups, might affect group identification but is not an aspect of it.

Relating cohesion and interpersonal attraction to group identification. We view interpersonal attraction as a source of group identification. Kerr and Kaufman-Gilliland (1994) reason that group

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identification develops as a result of affective bonds among group members. Viewing these bonds as a source of group identification is consistent with our view that the development of cohesion and group identification should overlap.

How does the affective component contribute to group identification? If members are attracted to one another, they may prefer to spend more time together as interaction leads to goal attainment (Sherif, 1967). If they interact cooperatively to attain shared goals, then this collection of individuals who feel mutual attraction has become a group of interdependent members. Flippen et al. (1996) have shown that interdependence has an even greater causal link to in-group formation than similarity does. Similarity may be responsible for the initial attraction, which leads to repeated positive interaction resulting in interdependence. With interdependence established, an in-group is formed. Thus, similarity yields interpersonal attraction, which in turn results in an interacting, interdependent group. Interaction then strengthens self-identification as a member.

The importance of perceived similarity, a cognitive judgment, in promoting interpersonal attraction shows how closely cognition and affect are linked. Together, they can promote identification with social collectives in the absence of interaction. They can also promote identification with collectives to which one does not belong—fan identification with sports teams is one example. However, we view group identification as an intragroup process influenced by a third group-level source, interdependence.

INTERDEPENDENCE: THE BEHAVIORAL SOURCE

Interest in group identification as an antecedent of cooperation has focused on common fate (Brewer & Kramer, 1986; Kramer & Brewer, 1984). Researchers propose that interdependent outcomes will evoke group identification, an idea supported by some research on social dilemmas (Brewer & Kramer, 1986; Chen, 1996; Kramer & Brewer, 1984). Shared outcomes are not the only form of interdependence, however, and may in fact be the weakest form

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(Brown, 1988). Although Bouas and Arrow (1996) found some support for the impact of common fate on group identification, group members in their study shared many kinds of interdependence. Thus, we broaden the behavioral source of group identification to include outcome and behavioral interdependence—the need to coordinate actions among members in pursuit of group objectives.

Distinguishing group identification from interdependence. Behavioral interdependence (we use the term to describe the process as well as any shared outcome dependent on the process) is a source of group identification, not group identification itself. Much research supports this assertion.

Flippen et al. (1996) found interdependence to be a stronger basis for in-group formation than similarity. Because group formation is a necessary prerequisite for group identification, this result implies that interdependence is an antecedent of group identification. Pettigrew (1997) looked at interdependence as part of the contact hypothesis (Allport, 1954). He found contact involving intergroup friendships—not coworkers or neighbors—reduced prejudice toward the groups involved in the friendships and other out-groups. Friendship produces interdependent contact without competition, a feature that may be absent in neighborhood or organization contacts.

Sherif (1967) studied how interdependence and shared goals affect group process and found that cooperative interdependence in pursuit of shared goals yields a well-defined group structure. Sherif and Sherif (1969) also argued that interdependent interaction is crucial to intragroup attraction. This work emphasizes the interdependent process of achieving shared goals (Hogg & Abrams, 1988). Duck (1977) found interdependence and shared experiences lead to long-term liking. The experience of interdependence in attaining outcomes leads to these consequences. These studies together indicate that interdependence causes in-group formation, a necessary backdrop for attraction to a group and categorization of oneself as a member. In this way, the three sources work together to promote member identification with an interacting group.

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Relating group identification and behavioral interdependence. Because past studies lack operational agreement on group identification, assessing the effects of behavioral interdependence is difficult. Below, we discuss relevant literature, noting how group identification was measured.

Cooperation may result from group identification (Dawes et al., 1977), and common fate manipulations have increased cooperation in social dilemmas (Brewer & Kramer, 1986; Kramer & Brewer, 1984). The effects of interdependence on cooperation are also shown by evidence that pledging increases contributions to public goods (Chen & Komorita, 1994), but only if the pledges promote interdependence by having participants contribute the mean or minimum amount pledged (Chen, 1996). Chen suggests that pledging elicits cooperation because it promotes group identification, as measured by the Hinkle et al. (1989) scale.

Other research also supports behavioral interdependence as a source of group identification. Lott and Lott (1965) found interaction that mediates goal achievement produces interpersonal attraction, a common construal of cohesion (Hogg & Abrams, 1988). Berkowitz and Walster (1976) argue a group is defined by equitable interdependence among individuals. The link between interdependence and cohesion, group formation, and group identification is found in many theories, ranging from learning theory (Lott & Lott, 1965) to equity theory (Berkowitz & Walster, 1976) to social identity theory (Flippen et al., 1996). The support found for this notion in the literature lends credibility to behavioral interdependence as a source of group identification.

MEASURING GROUP IDENTIFICATION

To resolve the conceptual confusion about group identification, we have distinguished group identification from related constructs and proposed an integrative view of group identification as member identification with small interacting groups, which results from but is not identical to affective ties, cognitive categorization processes, and interdependent behavior and outcomes. We have also proposed

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an explicit distinction between the individual-level process of group identification (the focus of this article) and a group-level construct of group identity as something that the group as a whole establishes. Our tripartite conception of group identification, however, does not match existing scales used to measure the construct. The items that make up the three factors in the Hinkle et al. (1989) scale match neither our definition nor Hinkle et al.'s own tripartite conceptualization.

The unidimensional scales we are aware of have other problems. A measure of group identification in one study (Spears et al., 1997), for example, consisted of virtually the same items, with minor adjustments, as those used to measure group commitment in another study by the same authors (Ellemers, Spears, et al., 1997). The latter study reported that group identification promotes group commitment. Perhaps, group identification and commitment are related. Perhaps, they are the same thing. But, our data will be of little use in illuminating psychological processes if there is no consistency between the words we use and the instruments that measure the constructs to which the words refer.

Another unidimensional scale has been developed by Riordan and Weatherly (in press). They define group identification as a cognitive connection between an individual and a work group, consistent with our view of group identification as an intragroup process. Their scale successfully discriminates this cognitive conception of identity from the related constructs of group cohesion and group communication. Unfortunately, the items in their group identification scale do not match their definition very well. Three of the five items measure the importance of how outsiders view and respond to the group, and a fourth measures the importance of group success—which, in work groups, is often defined by out-group members as well.

We are sympathetic to the measurement problem, having ourselves used measures of group identification that were a poor fit with our stated conceptualization (Bouas & Arrow, 1996; Bouas & Komorita, 1996). To address this problem, Arrow and Carini have developed a scale that corresponds to our theoretical definition of

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the construct and that factors into meaningful subscales that reflect the proposed sources of group identification.

PARTICIPANTS AND GROUPS USED FOR INITIAL SCALE DEVELOPMENT

Across five rounds of data collection, 965 college students at the University of Oregon completed five different sets of trial items in sessions for which they received credit in an introductory psychology class. Consistent with our tripartite conception of group identification, we wrote items to tap affective, behavioral, and cognitive sources of group identification. After factor-analyzing items from each round of data collection, we deleted items that did not load together with other items designated as belonging to the same subscale, and we added new trial items. Students were directed to complete the scale for a group they belonged to that had 3 to 25 members; they rated each statement on a 7-point scale, with 1 = *strongly disagree* and 7 = *strongly agree*. Out of 56 items tested, we selected 13 that had face validity and together factored into a structure consistent with our tripartite model. This scale included 5 affective items, 5 behavioral items, and 3 cognitive items (Henry, Arrow, & Carini, 1998).

CONSTRUCT VALIDITY

To check for construct validity, the 290 students in the fifth round of data collection completed the scale twice, once for a group that was highly important to them and once for a group that they belonged to but did not consider very important. Order was counterbalanced, and students filled out several other, unrelated questionnaires in between the two group identification scales. Respondents were 70% female and 30% male, 76% Caucasian and 14% Asian, with the remaining 10% split among Hispanic, African American, and Native American.

The groups that students identified as important groups were typically athletic teams, religious groups such as Bible study groups, groups of friends, and academic groups such as study groups.

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Together, these accounted for 70% of the groups. Most common for the unimportant groups were academic groups, groups at work, and housemates, which together accounted for 75% of groups.

Comparisons between scores for important and unimportant groups indicated that the scale discriminated well between those groups that we would expect people to identify with strongly and those that they should identify with less strongly. The mean for the important groups was 5.93 (SD = .93); the mean for the unimportant groups was 3.89 (SD = 1.07). This difference was reliable at the $p < .0001$ level, $t(289) = 24.9$.

PROBLEMS WITH THE SCALE

In the next round of data collection, in which 179 students completed the scale, the factor structure of the initial 13-item scale did not replicate satisfactorily. Although the behavioral items separated out as a distinct factor, the affective and cognitive items loaded together on a single factor. When a three-factor solution was forced, the third factor was not conceptually meaningful. The scale included only 3 reverse-scored items, another weakness, and the cognitive scale had only 3 items. Two of the cognitive items—"Others think of me as a member of this group" and "Others think of us as a real group"—also seemed problematic because they emphasized categorization by nonmembers (a failing we criticized in the Riordan & Weatherly [in press] scale) rather than the thoughts of the member completing the scale.

REVISED SCALE

To address these problems, we revised the scale to balance the reverse- and direct-scored items for each subscale and substitute some new cognitive items. Students from the University of Oklahoma completed the original scale plus reverse-worded versions of the direct items and a few new cognitive items. The Hinkle et al. (1989) scale was also included, so that we could check for convergent validity. From the items completed, we selected 4 each (2 direct, 2 reverse) for each subscale, for a total of 12 items. Nine of

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TABLE 1: Factor Pattern for Arrow-Carini Group Identification Scale 2.0, Oklahoma and Oregon Data

	Factor		
Subscale	*Affective*	*Behavioral*	*Cognitive*
Affective			
1. I would prefer to be in a different group (R)	.73 (.25)		(.52)
4. Members of this group like one another	.82 (.73)		
7. I enjoy interacting with the members of this group	.78 (.63)		
10. I don't like many of the other people in this group (R)	.89 (.89)		
Behavioral			
2. In this group, members don't have to rely on one another (R)		.84 (.79)	
5. All members need to contribute to achieve the group's goals		.86 (.83)	
8. This group accomplishes things that no single member could achieve		.71 (.80)	
11. In this group, members do not need to cooperate to complete group tasks (R)		.73 (.81)	
Cognitive			
3. I think of this group as part of who I am			.74 (.92)
6. I see myself as quite different from other members of the group (R)			.77 (.37)
9. I don't think of this group as part of who I am (R)			.77 (.77)
12. I see myself as quite similar to other members of the group			.75 (.92)
Variance explained by each factor, ignoring other factors	3.61 (3.21)	3.06 (3.08)	3.41 (3.53)

NOTE: (R) indicates a reverse-scored item. Numbers in parentheses refer to Oregon data set.

the items from the original scale were included (with 3 changed to reverse wording), and 3 of the cognitive items were new.

The resulting Group Identification Scale 2.0 is reproduced in Table 1. To check for stability of factors, we also had University of Oregon students complete the new scale and the Hinkle et al. (1989) scale. Factor loadings for the Oregon data collection are shown in parentheses in Table 1. For ease of inspection, we have grouped items from the three subscales together, although they are interspersed in the instrument. The proportion of variance explained by each rotated factor (ignoring the other factors, which all have some

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shared variance) ranged between 26% and 30% (see Table 1). The eigenvalues of the first three orthogonal principal components (unrotated) explained 64% of the variance in each sample.

PARTICIPANTS

The 420 University of Oklahoma students were 51% female and 49% male, with mean age 19.7 years, ranging from 17 to 49. Ethnicity was 77% European American, 7% African American, and 4% Asian American, with the remaining 12% divided among Hispanic, Native American, mixed ethnicity, foreign nationals, and not specified. The 320 University of Oregon students were 65% female and 35% male, with mean age 19.3 years. Ethnicity was 81% European American, 11% Asian-Pacific, and 3% African American, with the remaining 5% divided among Hispanic, Native American, and multiple or not specified.

DISCRIMINATION AMONG THE SUBSCALES

The three subscales in the group identification scale are not orthogonal. Correlations between the subscales (see Table 2) indicate that the affective and cognitive sources have high overlap, whereas the behavioral source is more distinct. Because of the correlation among subscales, we chose oblique rotation, using the SAS Promax program, to examine the factor structure of the scale. The rotated factor pattern, with three factors specified, is shown in Table 1 for the Oklahoma and Oregon groups. Loadings not shown were below .30, Gorsuch's (1983) minimum. Correlations between the factors are shown in Table 2.

With two exceptions, the scale items passed the following three criteria for both the Oklahoma and Oregon data sets: (a) the item should load on the same factor as the other items in the same subscale; (b) loading on this factor should be at least .40 (using the cutoff Gorsuch suggests as a more conservative minimum); and (c) if the item also loads on a second factor, there should be at least a .10 difference in the strength of the loading. The two problematic items were Item 1, keyed as an affective item, which loaded with

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TABLE 2: Correlations and Internal Consistency of Subscales and Correlations Among Factors for Oklahoma and Oregon Data Sets

	Oklahoma Data Set (N = 420)				*Oregon Data Set (N = 320)*			
	Affective	*Behavioral*	*Cognitive*	*Total*	*Affective*	*Behavioral*	*Cognitive*	*Total*
Correlations and internal consistency for subscales								
Affective	(.84)				(.79)			
Behavioral	.31	(.80)			.31	(.83)		
Cognitive	.55	.33	(.78)		.66	.33	(.76)	
Total	.78	.70	.84	(.89)	.80	.71	.85	(.85)
Correlations among rotated factors								
Behavioral	.30				.26			
Cognitive	.50	.29			.45	.25		

NOTE: Figures in parentheses give internal consistency as measured by Cronbach's alpha for standardized variables.

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the cognitive items in the Oregon data set, and Cognitive item 6, which dropped below the .40 minimum in the Oregon data set. Both items are reverse-scored, and in our experience, it is especially difficult to write reverse-scored items that load consistently with the direct-scored items in the same scale. Because the affective and cognitive scales are highly correlated, it is not surprising that maintaining differentiation between items in the two scales is difficult. Although the two sources of group identification are conceptually distinct, they are closely linked in the pattern of responses when measuring group identification. Specification of two factors indicated that a combined affective-cognitive factor with a second behavioral factor was a better solution for the Oregon data than a three-factor solution.

RELIABILITY

The internal consistency of the subscales was assessed using Cronbach's alpha. Results are shown in Table 2 for both Oklahoma and Oregon groups.

CONVERGENT VALIDITY

The correlation between scores on the group identification scale and the Hinkle et al. (1989) scale was .83 for the Oklahoma data and .85 for the Oregon data. We interpreted the Hinkle et al. items as primarily measuring the affective source of group identification, and in line with this interpretation, scores on this scale correlated more highly with our affective subscale (.83/.84 for the Oklahoma and Oregon data sets) than with our behavioral (.41 for both data sets) and cognitive (.69/.79 for Oklahoma and Oregon) subscales.

USEFULNESS OF THE SCALE ACROSS POPULATIONS

We have demonstrated reasonable stability of the factor structure across two college student populations in different regions of the United States. Respondents used the scale to report on the sources of group identification for a variety of different small groups.

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For researchers, one practical limitation of the scale is that it presumes the existence of a real group that is perceived to exist not only by a researcher but also by its members. For this reason, it is not well-suited for assessing group identification in the ad hoc, minimal groups used in many experiments. When a colleague tried the scale in this setting, participants were prone to leave questions blank or protest that the questions did not make sense. For these minimal groups, constructs such as social identity, perceived similarity, or self-categorization are more appropriate. In our view, group identification emerges only when people perceive themselves to be members of an actual group and should not be applied to collections of people who lack behavioral interdependence or any concrete connection to one another.

The usefulness of the scale for group members in broader community samples and in organizational settings, both within the United States and in other English-speaking communities, is yet to be determined. We hope that colleagues who use the scale with different populations will report on its usefulness with respondents other than college students.

CONCLUSIONS

Although group identification has been a popular construct in recent years, research on group identification has suffered from conceptual confusion and poor measurement. Researchers from different theoretical traditions have used the term to mean different things, and even researchers within the same tradition do not always use the term consistently. Group identification has been evoked as an explanatory factor with no attempt to measure it (e.g., Brewer et al., 1995), and when group identification is measured, researchers frequently use ad hoc scales that do not reflect their theoretical definitions.

We have attempted to clarify these matters by developing both an integrative theoretical conception of group identification and a measurement instrument that matches that conception. Our tripartite model integrates three ostensibly separate bodies of literature

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that have used the term group identification. The social identity literature has focused on identification as self-categorization. The cohesion literature has focused on interpersonal attraction. The common fate literature emphasizes interdependence among group members. We propose that each perspective describes a conceptually distinct source of group identification, and our scale measures the strength of these three sources.

The tripartite view can be used as a guide to generate predictions for future research. In particular, we are interested in the consequences of the cognitive, affective, and behavioral sources for group functioning. Both the cognitive and affective sources could promote adherence to group norms (Hogg & Hains, 1996; Seashore, 1954) and in-group bias (Duck et al., 1998; Tajfel et al., 1971). The behavioral source may be the most likely to yield benefits in group performance, as outcome interdependence has been associated with cooperation (Dawes et al., 1977) in previous research. In groups with high demographic diversity, the cognitive source of group identification may be weak. The key to promoting group identification in such groups is, we believe, an emphasis on the behavioral sources of group identification and a de-emphasis on demographic characteristics on which members differ.

Worchel's (1994) model of group development proposes that groups cycle through distinct phases, including a group identification phase. Characterizations of the different phases suggest that during this phase, affective and cognitive sources should be strong, but behavioral sources may be weak. The next phase, group productivity, should be characterized by increased contribution of the behavioral source of group identification, while the cognitive source wanes throughout this phase and the next phase of individuation. Our group identification scale would be useful in testing these predictions. We also expect that the development of group identification will differ in groups that meet primarily face to face compared to distributed groups whose communication is computer-mediated, as indicated by prior work (Bouas & Arrow, 1996). Underlying these differences may be differential contributions of the three sources of group identification for groups using different communication media.

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It is our hope that the development of an explicit theory of group identification will stimulate more systematic thinking and research on the topic. In addition, more attention to measurement issues across research studies and programs will help us to build a literature that provides clearer and more cumulative findings about the sources, the development, and the consequences of group identification.

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