

A functional perspective on group memberships: Differential need fulfillment in a group typology [☆]

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Abstract

The social motivation functions of intimacy, task, and social category groups were investigated. In two studies, participants were asked to consider the extent to which their group memberships fulfilled several needs. A factor analysis confirmed that the needs comprised three factors: affiliation, achievement, and identity. Intimacy groups were associated with affiliation needs, task groups were associated with achievement needs, and social category groups were associated with identity. A study using implicit measures reinforced those results, revealing the presence of the same implicit associations between group types and need fulfillments. A final study manipulated participants' need state through a priming procedure. Priming a specific need (affiliation, achievement, and identity) led to an increased accessibility of the group type that was best suited to meet that need (intimacy, task, social category, respectively). Results help clarify the functional aspects of groups and have implications for the perception and organization of group-level information.

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Groups are an indispensable aspect of social life and, accordingly, have been a cornerstone of social psychological research. Past research has centered on inter-group conflict, group dynamics, prejudice and stereotyping, and social identity. The primary purpose of the present research was to examine the perceived functional benefits of mem-

bership in various types of groups, especially in terms of a taxonomy of groups derived from our previous research (Lickel et al., 2000; Sherman, Castelli, & Hamilton, 2002). This group typology categorizes specific groups into broader types based on the perceived properties of those groups and the degree to which each group is perceived as comprising a meaningful social unit. In this article we propose that these distinct group types are functional in meeting important social needs, and that perceivers are therefore attuned to the functions served by those types of groups.

Although we are not the first researchers to explore the functions of various types of groups (e.g., Aharpour & Brown, 2002; Deaux, Reid, Mizrahi, & Ethier, 1995; Fiske, 1992; Prentice, Miller, & Lightdale, 1994), we believe our approach to be compelling for several reasons. The types of psychological needs that we associate with the group types

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are well-documented, basic social psychological motives supported by decades of research. Importantly, to our knowledge, the present studies are the first to demonstrate clear and consistent associations of the large variety of groups within each group type to a single, central social motive fulfillment. These data will serve to clarify the functional aspects of group types and spell out implications for the perception and organization of group-level information.

Types of groups

Our approach rests on a typology advanced by Lickel et al. (2000) that takes into account the perceived properties associated with various groups, with special focus on their perceived entitativity, the degree to which an aggregate of individuals is perceived as comprising a meaningful entity, or as possessing some underlying essence that makes them a group (Campbell, 1958). Lickel et al. (2000) sought to examine the different patterns of features associated with various groups. Participants rated a variety of groups on measures of perceived entitativity, similarity, interaction, common goals and outcomes, permeability, importance, size, and duration. Analyses showed that the groups could be divided into several major clusters, and that unique configurations of properties were associated with each type. The first cluster, *intimacy groups*, consisted of small groups with high levels of interaction, similarity, entitativity, and importance to their members. Membership in these groups is typically of long duration, and the groups are impermeable and are characterized by shared goals and outcomes. Examples of groups falling in this cluster are families, friends, street gangs, and fraternities.

A second cluster, *task groups*, included groups such as a labor union, members of a jury, co-workers, and student study groups. These groups are often fairly small, with high interaction, importance, and similarity. Like intimacy groups, members share common goals and outcomes. These groups are together for modest duration, and are rated as moderate in both permeability and entitativity.

The third cluster of groups consisted of *social categories*, such as Women, Blacks, and Jews. Social categories are large groups, with long lasting and relatively impermeable membership. Unlike intimacy and task groups, social categories are rated as being rather low in interaction, importance to members, and similarity between members, and they are perceived as lower in entitativity than intimacy or task groups.

Lickel et al.'s (2000) research laid the foundation for the present work by uncovering a clear group typology, with each type associated with a distinct pattern of perceived features that contribute to their perceived entitativity. Building on these findings, Sherman et al. (2002) studied the mental representation of information about groups of these three types through less explicit tasks. The indirect measures used in their studies substantiate that the group typology reported in Lickel et al. was not merely the product of

deliberative, analytic thinking but rather has the status of a cognitive structure that persons spontaneously use in processing information about group members.

Given that social perceivers recognize the same group types both explicitly and implicitly, the question naturally arises *why* are groups organized and categorized as they are. We propose that groups are organized according to their functional significance. Thus, different groups belong to categories based on the psychological needs or functions that they fulfill. In the current research, we explore the possibility that the perceived functions of intimacy, task, and social category groups, and in particular the needs that are fulfilled by membership in each type of group, contribute to the way that we perceive and organize information about groups of these types. In other words, the functionality of a group may guide our perceptions and representations of that group.

The functions of groups

It is clear that people enjoy various benefits from the groups to which they belong, and that memberships in different groups help to satisfy a variety of psychological needs. Based on an integration of basic principles across topic areas in social psychology, Mackie and Smith (1998) highlighted three primary motivational principles that appear across domains. One is a drive toward connectedness, or a feeling of belonging with others. We would expand this motive to include other *affiliation*-related needs, including emotional attachment and support. These needs are purely interpersonal as they can only be met through relationships with other people, most often relatively small, intimate groups like families, close friends, and roommates.

A second motive is the striving for mastery and reality testing sufficient to result in securing rewards, generating another fundamental class of psychological needs, namely, goal or *achievement* related needs such as mastery, success, and competence. Group memberships certainly help members fulfill such goal-related needs. For example, a sports team can accomplish goals and satisfy achievement needs that members could not achieve as easily, if at all, as individuals. However, goal-related needs are not as inherently social as affiliation needs. One can certainly meet some achievement needs as an individual, for example, by solving a difficult puzzle or lifting weights.

A third basic motivation is a desire for the maintenance and enhancement of self-identity and self-esteem. This basic motive is reflected in social identity theory and other theories of group membership that posit a close relationship between positive group identity and self-esteem. We call these *identity* needs. Although a sense of identity can be gained by individual means, fulfilling identity needs is often attained in group contexts as individuals define themselves in terms of their group memberships (Sedikides & Brewer, 2001).

What, then, is the relationship between the group types and needs types? In proposing a functional relationship

between the group types and categories of needs, we do not suggest that any group and need type pairings are mutually exclusive. All three types of needs are probably fulfilled by membership in almost any type of group (perhaps in a context specific manner). Moreover, it is also undoubtedly the case that groups within each of the three major types fulfill other needs for their members that we are not considering. Nevertheless, we hypothesize that there is a systematic relation between the group types and the basic human needs identified by Mackie and Smith (1998).

First, we expect that intimacy groups, based on their high degrees of importance, perceived entitativity, similarity among members, and interaction, generally fulfill needs more than do the less important and less cohesive task and social category groups. More importantly, we predict an interaction between group type and need type, indicating *relative need fulfillment* (a specific ordering of need fulfillment within each group type). We propose that intimacy groups will be relatively more associated with affiliation needs than with achievement or identity needs. Interactions with fellow members of intimacy groups are most likely to help satisfy the highly interpersonal, affiliation-type needs. Next, we predict that task groups will be relatively more associated with motives for mastery and achievement than with affiliation or identity motives. Although achievement motives can sometimes be satisfied without help from a group, membership in task groups seems to most frequently aid in the fulfillment of these needs. Finally, we propose that social categories will be relatively more associated with needs for identity than with the other two types of needs. In understanding oneself in broader societal contexts, social category memberships seem to be especially valuable.

Previous research provides indirect support for our hypotheses about the needs paired with each group type. Research on attachment and attachment styles (Bowby, 1958; Gardner, Pickett, & Brewer, 2000; Hazan & Shaver, 1994), belongingness (Baumeister & Leary, 1995; Maslow, 1962; Sternberg, 1988), and comfort, love, and support more generally (e.g., Rushton, 1989; Stevens & Fiske, 1995) have highlighted the connection between affiliation needs and intimacy group memberships. Similarly, research on the need for mastery (McClelland, 1951; McClelland, Atkinson, Clark, & Lowell, 1953; White, 1959) classifies it as a basic motive most notably fulfilled in task groups. Finally, research on social identity theory (Tajfel, 1978; Tajfel & Turner, 1979), optimal distinctiveness theory (Brewer, 1991, 1993), and self-categorization theory (Oakes, Haslam, & Turner, 1994; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) most often examines the identity needs served by social category group memberships.

It is important to note, however, that our analysis focuses not on the *actual* relations of group types and need fulfillment but rather on perceivers' *beliefs* about those relations. Thus, the studies herein do not attempt to measure what people actually do when they are seeking the fulfill-

ment of particular needs. Rather, these studies address people's beliefs about which groups serve to fulfill which types of needs.

In sum, the purpose of the present studies was to investigate the relations between group types and the psychological functions that they are perceived as serving. We hypothesize that intimacy groups are relatively most associated with affiliation needs; membership in task groups is relatively most associated with achievement needs; and social categories are relatively most associated with identity needs.

With this conceptual framework in mind, we conducted two questionnaire studies in which participants either rated needs in terms of the extent to which each was fulfilled by intimacy, task, and social category groups (Study 1) or listed particular groups in response to the three need types (Study 2). Study 3 used an implicit measure, demonstrating that participants are implicitly, as well as explicitly, aware of the functions of various groups. Study 4 manipulated specific needs through a priming procedure and showed predicted effects on the accessibility of groups that would meet the primed need.

Study 1

Method

Participants

Five hundred fifty students enrolled in an introductory psychology course at Indiana University participated in the experiment and received credit toward partial completion of a course requirement.

Materials

The questionnaire packet consisted of three sections. In each section, participants rated the degree to which their membership in one of the three types of groups fulfilled each of a variety of social needs. The 28 needs that were included in each section are: support, comfort, connectedness, acceptance, belonging, avoid loneliness, affiliation, mastery, achievement, success, sense of worth, cooperation, need to feel valued, competence, avoid failure, status, accomplish goals, individuality, dignity, pride, self-esteem enhancement, self-respect, self-esteem maintenance, distinctiveness, uniqueness, character, sense of self, and sense of identity.¹ We purposely sought to select specific needs that would fall into each of the three types: affiliation, achievement, and identity; but there are clearly some needs that could conceivably have overlapped two, or even all three, need categories. Participants responded on a 10-point scale with endpoints of 0 ("does not fulfill need at all") and 9 ("fulfills need a great deal") with the midpoint labeled "moderately fulfills need."

¹ This list of needs and the particular needs from the factor analyses will be elaborated in General discussion.

Procedure

Participants were run in groups of 12–70 in a large classroom. They were given the questionnaire and read a short introduction to the study, explaining that various groups tend to fulfill various needs for their members. Participants were told that the study was concerned with which needs are best fulfilled by which groups.

After reading through the description of the experiment, participants completed three sections of the questionnaire. In each section, they read examples of intimacy groups, task groups, or social categories. In other words, participants were given no description of the three types of groups (which might have included properties of the groups, etc.), but were given only examples of specific groups within each type. The examples of intimacy groups were “family, friends, romantic partners, and any other very close group of people (including things like fraternities).” The examples of task-oriented groups were “study groups, sports teams, co-workers, juries, or group-project groups assigned in classes.” The examples of social categories were “ethnicity, nationality, religion, race, or age.” All participants were reminded that these were just examples of groups within each type, and that many more specific groups might exist. Participants then listed their own group memberships that fit into each of these types. After writing their group memberships for one of the types, participants rated the degree to which their membership in that type of group fulfilled each of the 28 needs. For example, a participant might first read about and list intimacy groups and then rate need fulfillment (for all 28 needs) for intimacy groups, followed by the same pattern for task groups, and then again for social categories. The order in which these sections were presented was random. As there were no significant differences in responses due to presentation order, this factor will not be discussed further.

Results and discussion

Factor analyses

To determine the needs that the three group types are perceived to fulfill, we conducted exploratory factor analyses for the 28 needs for each of the three group types. Using a principal components analysis method and a Varimax rotation with Kaiser normalization, three factors (eigenvalues greater than 1) were extracted for each of the group types. Inspection of the scree tests for each analysis showed an elbow greater than 40 degrees (Cattell & Dreger, 1976) between the third and fourth factors. For intimacy groups, the three-factor solution explained 60.70% of the variance, for task groups 64.65%, and for social categories 68.54%. Only those items that clustered together on all three of the factor analyses were included in each factor. The items with principal factor loadings greater than .60 on each factor are shown in Table 1.

After examination of the items within each factor, it was possible to interpret the factors in a meaningful way. The three factors matched our theoretical reasoning about what needs correspond to the different group types, and have been labeled “Affiliation,” “Achievement,” and “Identity,” respectively. The items that constitute the first factor represent a function of affiliation. Membership in the group provides members with feelings of connectedness, acceptance, comfort, belonging, and support. The items that constitute the second factor, which we have labeled “achievement,” are all related to achievement and achievement-related concepts (i.e., achievement, success, accomplish goals, mastery, and competence). The items loading on the third factor (i.e., identity, uniqueness, distinctiveness, and individuality) are all related to a sense of identity.

Table 1
Factors extracted from exploratory factor analysis, Study 1

	Intimacy groups			Task groups			Social categories		
	1	2	3	1	2	3	1	2	3
Connectedness	.748			.746			.804		
Acceptance	.721			.791			.753		
Comfort	.803			.736			.734		
Belonging	.753			.726			.677		
Support	.780			.653			.622		
Achievement		.831			.739			.767	
Success		.816			.820			.803	
Accomplish goals		.714			.791			.808	
Competence		.635			.682			.686	
Mastery		.754			.657			.618	
Sense of identity			.758			.801			.763
Uniqueness			.806			.801			.806
Distinctiveness			.637			.758			.729
Individuality			.769			.690			.766
Variance explained		60.70%			64.65%			68.54%	

Mean need ratings

To determine which type of group was reported as best fulfilling which type of need, a 3×3 repeated measures ANOVA was done on the mean need ratings. As predicted, there was a main effect of group type, $F(2, 1920) = 119.85$, $p < .0001$, with intimacy groups fulfilling needs overall to a greater extent than the other groups. There was also a main effect of need type, $F(2, 1920) = 156.08$, $p < .0001$, indicating that affiliation needs are fulfilled generally by all group memberships significantly more so than achievement or identity needs. Perhaps this reflects the fact that affiliation needs have a more interpersonal, social nature than do achievement needs or identity needs, both of which can be fulfilled by individual as well as group action.

More importantly for our conceptual argument, there was a significant group type \times need type interaction, $F(4, 1920) = 163.46$, $p < .0001$. As seen in Fig. 1, the pattern of the interaction follows our predictions. Because predictions, based on previous research, were made a priori for the ordering of means, within-subject contrasts were done for the need-group pairings. Affiliation needs were reported to be fulfilled relatively more in intimacy groups than in task groups ($F(1, 546) = 557.50$, $p < .0001$) or social categories ($F(1, 546) = 391.022$, $p < .0001$). Achievement needs were seen as more fulfilled by task groups than by intimacy groups ($F(1, 547) = 20.44$, $p < .0001$) or social categories ($F(1, 547) = 172.19$, $p < .0001$). Finally, identity needs were more associated with social categories than with task groups ($F(1, 543) = 20.99$, $p < .0001$), but they were also more associated with intimacy groups than with social categories ($F(1, 543) = 65.94$, $p < .0001$). Social categories are the group type least likely to fulfill needs for members, and identity needs are the need type least likely to be fulfilled by group memberships. These main effects obscure what is a relatively strong association between social categories and identity need fulfillment.² Thus, in examining the means and controlling for the large main effects, the predicted group and need type pairings are revealed.

These results provide an important first step in exploring our hypotheses about the perceived functions of groups. It

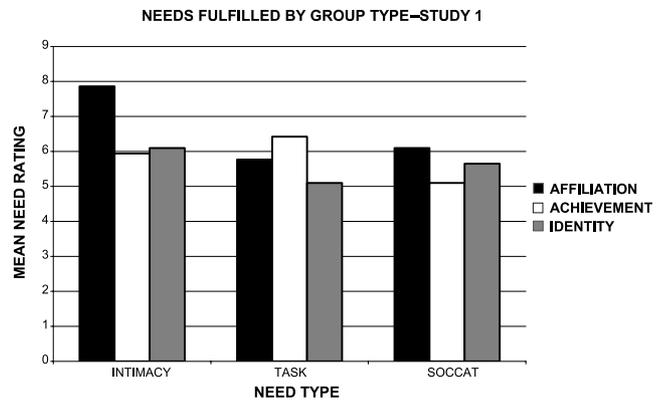


Fig. 1. Needs fulfilled by group type—Study 1.

is clear that groups are seen as providing ways to meet social needs, and that different categories of groups are seen as providing the most ideal ways to meet three important and prevalent social needs.

Study 2

Study 2 employed a different methodology to test our hypotheses about group functionality. Study 2 was essentially a reversal of Study 1. That is, rather than presenting participants with groups and then measuring need fulfillment, in Study 2 we presented participants with the list of 14 needs retained from the factor analysis in Study 1 and asked them to provide the names of up to three groups that fulfill each need. These self-generated groups were then coded in terms of group type. We predicted a group type main effect analogous to Study 1, such that intimacy groups would be listed with highest frequency overall. We also predicted a comparable interaction such that affiliation needs would prompt the listing of intimacy groups, achievement needs would prompt participants to list task groups, and identity needs would prompt the listing of social category groups, relative to the other possible combinations.

Method

Participants

Participants were 67 undergraduates enrolled in an introductory social psychology course at Indiana University. They participated voluntarily during class time and were compensated with extra credit toward their final grade in the course.

Materials

The cover page explained that membership in different types of groups is expected to fulfill various needs. Participants were then shown each of the 14 needs from the factor analyses in Study 1 plus the additional affiliation need “emotional attachment.” This resulted in the presentation of six affiliation needs, five achievement needs, and four identity needs. Participants were then asked to list up to three groups that most fulfill each need. For example, the

² To further consider the issue of relative need fulfillment controlling for the substantial main effects of group and need type, and as an additional way to examine the group type \times need type interaction, we compared the mean need fulfillment for each predicted need-group type pair (e.g., social categories fulfillment of identity needs) to the average need fulfillment of the other two needs for that group (e.g., the average social category fulfillment of affiliation and achievement needs). We then calculated a difference score between those two numbers and compared that difference score to the difference scores for the other groups’ fulfillment of that need compared to their fulfillment of the other needs (i.e., the difference between identity need fulfillment by intimacy groups compared to the average affiliation and achievement need fulfillment by intimacy groups, and the difference between identity fulfillment by task groups compared to the average affiliation and achievement need fulfillment by task groups). In all cases (most importantly for social categories’ fulfillment of needs), relative need fulfillment was significantly higher for the predicted need/group type pairings (i.e., affiliation needs/intimacy groups; achievement needs/task groups; identity needs/social categories).

first question asked: What groups help you most fulfill your need for comfort? Participants were to list up to three groups to which they would turn for this specific need fulfillment. This procedure was repeated 15 times, once for each psychological need. The needs were listed in one fixed order.

Coding

Two independent coders, blind to hypotheses, coded the groups listed according to group type. Overall, the raters showed high consistency (94%). A third coder resolved any disagreements. Missing data and groups that did not clearly fit into one of the three types comprised only 4% of all cases, leaving a total of 964 groups listed.

Results and discussion

We calculated the proportion of the total listed groups that were coded as intimacy groups, task groups, and social categories for each need type. As in the previous study, we expected that more intimacy groups would be listed than task groups or social categories. This prediction was confirmed. Of the total groups listed, 55% ($n = 1295$) were intimacy groups, 34% ($n = 801$) were task groups, and 11% ($n = 269$) were social categories ($\chi^2(2, n = 2365) = 668.0, p < .001$). This result is consistent with the main effect from Study 1, namely that intimacy groups fulfill all needs to a greater extent than do task groups and social categories.

Again, the theoretically critical result is the particular types of groups listed for each particular type of need. The pattern of frequencies was consistent with the interaction observed in Study 1. Intimacy groups were listed much more frequently in response to affiliation needs (77%; $n = 762$) than in response to achievement needs (32%; $n = 242$) and identity needs (47%; $n = 291$). Task groups were listed in response to achievement needs more frequently (61%; $n = 461$) than affiliation needs (16%; $n = 153$) and identity needs (30%; $n = 187$). Finally, social categories were listed in response to identity needs more frequently (23%; $n = 142$) than to affiliation needs (7%; $n = 70$) and achievement needs (7%; $n = 57$). Clearly, the pattern of frequencies of group type listings in response to each need type is supportive of our hypotheses.

To examine the interaction, a χ^2 test was conducted. Recall that the needs presented followed a 6:5:4 ratio. Thus, the expected frequencies in the χ^2 test were set to reflect the 6:5:4 ratio of affiliation, achievement, and identity needs. The test was highly significant, $\chi^2(4, n = 2365) = 531.3, p < .001$. The only cells that represented greater than expected values were affiliation need/intimacy group, achievement need/task group, and identity need/social category. Thus, Study 2 replicates the pattern observed in Study 1, again revealing the predicted pattern of relative need fulfillment within each of the three types of groups.

The results from Studies 1 and 2 provide compelling support for the predicted pattern of relations between group types and the fulfillment of social needs. However, the fact

that this evidence comes exclusively from explicit questionnaire studies somewhat limits its reach in that the explicit questionnaires may be subject to demand characteristics, social desirability, and any effects of conscious consideration. If the three group types are strongly and spontaneously associated with the need types, these associations ought to emerge with more unobtrusive measures as well. Thus, in Study 3 we used implicit measures to test the magnitude and significance of these associations of different needs with different group types. A demonstration that these associations are spontaneous and not subject to conscious control would substantially bolster our conceptual position. Accordingly, in our next study we tested the hypothesis that perceivers possess an implicit, nonconscious structure of associations between group types and social needs.

The Lickel et al. (2000) studies identified group types by using explicit measures. The Sherman et al. (2002) studies then demonstrated that the existence of these same group types emerged when implicit measures were used. In an analogous way, with respect to the association between group types and social needs, Study 3 investigated the same group type-function associations using an implicit measure that Studies 1 and 2 showed with explicit measures. We assessed the group-need associations using the Go/No-go Association Task (Nosek & Banaji, 2001) as an implicit measure.

Study 3

Overview and predictions

The Go/No-go Association Task (GNAT; Nosek & Banaji, 2001) is an implicit pairing task in which participants respond with a key press to certain pairings of categories while simultaneously ignoring other categories presented. This procedure provides an unobtrusive measure of association and is related closely to the IAT (Greenwald, McGhee, & Schwartz, 1998). Both the GNAT and the IAT procedures assume that sorting well-associated categories together is easier than the grouping together of two categories that are not closely associated. The key differences between the IAT and the GNAT are that the GNAT allows the examination of a single category without requiring the use of a contrast category, and the GNAT does not rely on reaction time latencies as the primary dependent measure, but utilizes a response deadline so that one can examine sensitivity in a signal detection theory (SDT) analysis. This sensitivity (d') represents associative strength and is operationalized as the individual's ability to differentiate between the signal (critical categories) and noise (distracters/foils). The fact that the GNAT can assess a single target category without requiring any contrast category made it an especially ideal measure with which to further test our hypotheses.

Specifically, it was predicted that participants would be most accurate with the following pairings: intimacy groups + affiliation needs, task groups + achievement

needs, and social categories + identity needs, relative to all other combinations of pairings. That is, it was predicted that the need types would be most readily associable with the specific associated group types as identified in Studies 1 and 2 and would result in greater ease of differentiating between signal and noise in a GNAT (signal detection) paradigm.

Method

Participants

Participants consisted of a total of 127 students enrolled in an introductory psychology course at Indiana University. Students participated for credit toward partial completion of a course requirement.

Stimuli

Need items. Five items were used for each of the need type categories. The five affiliation need items were: comfort, belonging, support, trust, and acceptance. The items that represented achievement needs were: ability, success, achievement, mastery, and goal. Finally, the identity needs were: identity, distinctiveness, individuality, uniqueness, and similarity. In general, the needs were selected from the larger sets in Studies 1 and 2. However, because the program required single word need terms and an equal number of needs in each need category, some of the 15 need items are slightly different from those used in the previous studies.

Groups. Each group category was represented by 10 exemplars. The groups presented were as follows: *intimacy groups*: family, friends, roommates, romantic partner, sorority, fraternity, street gang, siblings, mates, and cousins; *task groups*: jury, co-workers, study group, orchestra, labor union, campus committee, construction crew, musical band, project team, and sports team; *social categories*: Jews, Catholics, Asians, Italians, women, elderly, student, Hoosiers, Americans, and teenagers.

GNAT. Each GNAT consisted of seven trial blocks (an example of the trial blocks is presented in Table 2). In the first block, participants responded by pressing a key when a social group was presented, but not when a non-group foil (i.e., fruit) was presented. The group used in the study served as the sole between-subjects variable with 44 participants presented with intimacy groups, 42 with task groups, and 41 with social categories. This first block of trials served to familiarize participants with the groups that were being used in the experiment.

The second, fourth, and sixth blocks (30 trials each) required participants to respond to one of the need types, and the other need types served as foils. For example, participants responded by pressing a key when achievement needs were presented, but not when either affiliation or identity needs were presented. Prior to each of the need type trial blocks, participants studied the five need items to which they

Table 2
Example GNAT (studies 3a–3c)

Block	Group	Affiliation	Achievement	Identity
1	<i>Yes</i>	—	—	—
2	—	<i>Yes</i>	No	No
3	Yes	Yes	No	No
4	—	No	<i>Yes</i>	No
5	Yes	No	Yes	No
6	—	No	No	<i>Yes</i>
7	Yes	No	No	Yes

Note. Dashes indicate that the category was not presented during the particular trial block. Italics are used for uncombined blocks, and bold letters are used for combined blocks.

were to respond. These blocks served as practice to familiarize participants with the need types and to give them the opportunity to differentiate among the three need types used.

Combined blocks. Of primary importance were the combined trial blocks (blocks 3, 5, and 7; 65 trials each) in which participants responded by pressing a key when either a social group or one specific need type (e.g., task groups + achievement needs) was presented, but not when the other two need types were presented (e.g., affiliation or identity). As seen in Table 2, one of the combined blocks required participants to respond only to the groups and affiliation needs (with achievement and identity needs serving as foils), the next combined block required responses for the groups and achievement needs (with affiliation and identity needs as foils), and the third combined block required responses for either the groups or identity needs (with affiliation and achievement needs as foils). The order of the blocks was counterbalanced so that one-third of the participants completed the groups + affiliation needs block first, one-third the groups + achievement needs first, and one-third the groups + identity needs first.

Feedback. Participants received feedback regarding their performance on each trial. When participants either responded within the response window by pressing the key when the critical items were presented, or did not press the key when a foil item was presented, they were presented with a green O to indicate that the response (or lack of response) was accurate. When the key was pressed during the presentation of a foil item, or if participants failed to respond within the response window with a key press to a critical item, a red × was presented on screen.

Response deadline. For the practice trials in which participants differentiated between groups and fruit, or between one of the need types and the other two, each item was presented for 1000 ms (with a 150 ms inter-stimulus interval). Items presented during the critical combined trial blocks were presented on screen for 600 ms (with a 150 ms ISI). Presentation time for the critical trials were based on the findings of Nosek and Banaji (2001) for the ideal range for response deadlines using the GNAT.

Procedure

Participants completed the experiment in groups of up to six. They were told that they would see various words on the computer, and that their task was to press the B key on the keyboard when a word belonged to an assigned category. They were given examples of what some of the categories might be, and were shown particular words that might be presented as belonging to the category, as well as words that might appear as foils. They were told that the task moved very quickly and that it was okay if they made mistakes, but that they should try to respond as quickly and accurately as possible. The experimenter then led participants to individual cubicles to complete the GNAT.

Results and discussion

In signal detection theory (SDT), d' (d-prime) serves as an index of sensitivity in the discrimination of targets (signals) from distracters/foils (noise). Sensitivity is calculated by taking the difference between the z -scored proportions of hits (correct responses for signal items) and false alarms (incorrect positive responses for noise items). The underlying assumption is that participants should more easily differentiate between signal and noise when the components of the signal are strongly associated as compared to when the components are either not related or are negatively related (Nosek & Banaji, 2001). For example, to the extent that intimacy groups are associated with affiliation needs, participants should show greater sensitivity in responding to those items when paired than when intimacy groups are paired with either achievement or identity needs. Thus, greater sensitivity (i.e., higher d' scores) indicates a stronger association between the two categories that are paired.

Sensitivity scores (d') were calculated for the nine pairings representing the different group types paired with each of the need types. These scores were then submitted to a 3 (Group Type: intimacy, task-oriented, or social category) \times 3 (Need Type: affiliation, achievement, and identity) mixed-measures ANOVA with repeated measures on the second factor. The analysis revealed a significant main effect for Group Type ($F(2, 124) = 3.95, p < .05$) indicating only that participants found it easier to pair all of the needs with social categories as compared to task-oriented groups ($p < .05$). More importantly, the analysis also revealed a significant Group Type \times Need Type interaction, $F(4, 248) = 6.71, p < .001$. To further probe this interaction, we conducted follow-up analyses examining the Need Type d' scores within each group type.

As expected, participants showed greater sensitivity to the pairing of intimacy groups with affiliation needs ($d' = 1.11$) than when intimacy groups were paired with either achievement ($d' = .71$) or identity ($d' = .83$) needs, $F(2, 248) = 7.79, p < .01$. Further, simple contrasts comparing the means indicated that intimacy groups were more readily associated with affiliation needs than with either achievement needs ($F(1, 248) = 14.85, p < .01$) or identity needs ($F(1, 248) = 7.14, p < .01$). Also in support of the pre-

dictions, participants showed greater sensitivity to the pairing of task groups with achievement needs ($d' = .89$) than when these groups were paired with either affiliation ($d' = .69$) or identity ($d' = .64$) needs, $F(2, 248) = 3.26, p < .05$. Simple contrasts comparing the means again indicated that task groups were associated more with achievement needs than with affiliation $F(1, 248) = 3.33, p = .06$, or identity needs $F(1, 248) = 4.99, p < .05$. When social categories were paired with identity needs, participants showed greater sensitivity in differentiating between signal and noise ($d' = 1.16$) than when these groups were paired with either affiliation ($d' = .89$) or achievement ($d' = .98$) needs, $F(2, 248) = 3.30, p < .05$. Simple contrasts indicated that social categories are more readily associated with identity-related needs than with either affiliation needs ($F(1, 248) = 6.38, p < .05$) or achievement related needs ($F(1, 248) = 2.81, p = .09$).

These results provide clear and compelling evidence that the different group types identified by Lickel et al. (2000) are implicitly associated with the fulfillment of different needs. Specifically, intimacy groups are most strongly associated with affiliation needs, task groups with achievement needs, and social categories with identity needs. Although intimacy groups may provide greater overall fulfillment of identity needs than do social categories, the relative associations of social categories to the three types of needs can be examined using the GNAT design. Thus, social categories do supply a sense of identity relatively more than they fulfill either affiliation or achievement needs, lending support to the hypothesis proposed at the outset of these studies.

It should be noted that the groups used in Study 3 were likely a mix of ingroups and outgroups for our participants. Clearly there should be strong associations between one's ingroups and the needs that these groups fulfill. It is also likely that at least some outgroups should be strongly associated with the needs fulfilled by these groups. This is in part because of participants' experiences with these outgroups and their members, and in part because of the similarity of certain outgroups to one's own ingroup (e.g., other religions, other political parties). Unfortunately, we have no way of knowing which groups were ingroups or outgroups for specific participants. However, the question of the strength of association between needs and group types for both ingroups and outgroups is one that should be investigated.

Study 4

The first three studies demonstrate strong and consistent relations between different group types and the fulfillment of specific group needs. These associations were shown with both explicit and implicit measures. However, these studies were correlational in nature and thus have some limitations. In Study 1, demand characteristics are a possibility. We gave definitions and examples of the group types and asked participants which needs were best fulfilled by each type. Perhaps the expected associations became clear. Such

a possibility seems unlikely in Study 2, where participants provided the names of specific groups that would fulfill various needs. No mention of group types was made. Study 3, in using an implicit measure, is not subject to a demand interpretation. In addition, it is possible that, when participants encountered all 3 group types, one after the other during Study 1, and were told to rate the needs fulfilled by each group type, they compared these types. Such comparisons could possibly have altered their responses. This consideration is not a potential problem in Studies 2 and 3.

A related issue involves the possibility of a semantic constraint interpretation. That is, the words affiliation, friendship, connectedness, etc., or the words achievement, task, success, etc., are close to each other in meaning and often occur together in natural language. The fact that each group type label is closest to certain needs in semantic space might account for the association of group types and needs on rating scales, but this does not ensure that these needs are best fulfilled by the group type that is semantically closest. However, we do not feel that there is a clear semantic association between our group types and needs. No doubt, each group type and each specific group fulfills several functions, and the identification of groups belonging to the same type (e.g., French and Presbyterian) is hardly obvious.³

Nevertheless, it is important to demonstrate in an experimental way that the arousal of different needs creates a difference in the specific groups that participants are likely to think about. To this end, we aroused need states by a priming technique used by Bargh, Gollwitzer, Lee-Chai, Barndollar, and Trötschel (2001), who subtly primed the needs of affiliation and achievement. Those need states then caused participants to behave in ways that would satisfy those needs. Our goal was to demonstrate that the arousal of our three need states would affect the accessibility of groups to which participants belonged. Groups that would fulfill each need should be activated by the need state.

Method

Participants

One hundred twenty-four Indiana University students who were enrolled in an introductory psychology course participated in the experiment in return for partial course credit. The data from four participants were excluded from the analyses because they failed to follow directions. Thus, analyses include the data from 120 participants.

³ Several additional tests of our hypotheses were conducted, but were not included due to concerns about manuscript length. In one such study, participants were presented with specific groups (e.g., sorority, co-workers, and gender) and rated each specific group on the extent to which it fulfilled each of several specific psychological needs. Neither general group type nor need type was mentioned. Again we observed significant relations between intimacy groups/affiliation needs, task groups/achievement needs, and social categories/identity needs. It is difficult to see how the matching of specific groups and specific needs could be semantically forced.

Procedure

On arrival at the laboratory, participants received a brief oral introduction to the experiment, and they were taken to individual cubicles, each equipped with a personal computer. All experimental instructions, conditions, stimuli, and data collection were provided via professional experimental software, MediaLab v2004 Research Software (Jarvis, 2004). The instructions of the experiment were self-paced, and participants advanced the instructions by pressing the mouse button or a response key. Participants were told that they were to take part in two unconnected experiments. It was explained that the first task (the priming task) was being used simply to clear their minds of all their thoughts of the day so that they could focus on the second task.

Needs priming. Participants were randomly assigned to one of three priming conditions or to a control condition. Participants unscrambled 20 sets of scrambled words to construct, for each set, a single sentence, by typing the words using the keyboard. Each scrambled set presented the participant with five words, four of which were to be used to construct a coherent sentence. The order of the scrambled sets was randomized for each participant. Participants in the affiliation prime received 10 scrambled sets that were designed to prime affiliation needs (e.g., “we other each cause support”—We support each other). Participants in the achievement prime received 10 scrambled sets that were designed to prime achievement needs (e.g., “clip stars for reach the”—Reach for the stars). Participants in the identity prime received 10 scrambled sets that were designed to prime identity needs (e.g., “are who understand you radio”—Understand who you are). Participants in all three priming conditions received an additional ten sets of scrambled words as filler items. These sets did not relate to affiliation, achievement, or identity needs (e.g., “shoes stars she black wore”—She wore black shoes). Participants in the control group received 20 sets of filler items.

Group listing task. At the conclusion of the priming task, it was explained to participants that a group is at least 2 people (but could be many more than 2) who share something in common. For the next 5 min, participants were asked to list on the screen groups to which they belong. Participants were asked to list one group per screen and to press Enter after each group they listed. It was encouraged that they list as many groups as they could, and to try to list at least 15–20 groups to which they belong. At the end of the experiment, during the debriefing, participants were asked to speculate on the purpose of the experiment. No participant showed awareness or suspicion about the relation between the priming task and the group listing task. There was no awareness that specific motives were made accessible by the priming task that might make the listing of certain groups more likely. Previously, Bargh et al. (2001) primed achievement motives and used a funnel debriefing procedure, which showed no participant awareness of the relation

between the priming task and subsequent achievement-related behavior.

Results and discussion

First, each of the groups listed by participants in the group listing task was coded by four judges (blind to condition) as an intimacy group, task group, social category, loose association, or as a non-codeable response, based on the results of Lickel et al. (2000). The coders demonstrated high consistency (89%). A group listing response that was ambiguous (e.g., “E-mail”), unclear as to the type of group (e.g., “golf”), or that obtained inconsistent codes between judges was discussed further until 100% agreement was reached (this occurred in approximately 150 of the 1302 responses).⁴

For the main analyses, we examined the first 10 responses that participants made on the group listing task. Overall, as revealed through a single factor repeated measures analysis of variance (ANOVA) that included the data of the control condition, participants listed the three types of groups at different rates, $F(2, 242) = 5.42$, $p < .01$. Irrespective of condition, participants were more likely to list intimacy groups (.41) in their first 10 codeable responses than they were to list social categories (.23), $t(242) = 3.32$, $p < .01$. Participants were also more likely to list task groups (.36) in their first 10 codeable responses than they were to list social categories, $t(242) = 2.40$, $p < .05$. No difference was observed between their tendency to list intimacy groups and task groups. These results parallel the findings of the previous studies.

The proportion of each group type listed in the first 10 responses for each priming condition are shown in Table 3. The greatest proportion of intimacy groups listed was in fact among participants in the affiliation priming condition (.50), the greatest proportion of task groups listed was among participants in the achievement priming condition (.44), and the greatest proportion of social categories listed was among participants in the identity priming condition (.30). This pattern conforms exactly to predictions.

To test the specific hypothesis, we conducted a planned contrast in which the three cells for which we predicted the highest proportion for the three priming conditions (i.e.,

⁴ Because we were interested in the effects of the priming of the three needs conditions (affiliation, achievement, and identity) on the mental activation of groups typically believed to meet those needs, we were not concerned with, and did not include in our primary analysis, either loose associations or non-codeable responses. Nevertheless, we can draw the same general conclusions with or without the inclusion of loose associations and non-codeable responses. When testing our primary hypothesis (the proportion of intimacy groups listed is greatest among participants in the affiliation priming condition, the proportion of task groups listed is greatest among participants in the achievement priming condition, and the proportion of social categories listed is greatest among participants in the identity priming condition) using participants' first 10 responses and allowing for loose associations and non-codeable responses, we again found the same result $t(261) = 2.39$, $p < .01$.

Table 3

Mean proportion of intimacy groups, task groups, or social categories listed by participant in their first 10 responses by priming condition

Priming condition	Proportion listed		
	Intimacy	Task	Social category
Affiliation	.50	.26	.24
Achievement	.38	.44	.18
Identity	.38	.32	.30
Control	.36	.42	.22

Note. Affiliation ($n = 29$), Achievement ($n = 31$), Identity ($n = 30$), and Control ($n = 30$).

affiliation prime—intimacy group, achievement prime—task group, identity prime—social category) were compared to the other six cells. The expected pattern of data was strongly supported $t(261) = 2.75$, $p < .01$. The control condition was not included in this contrast. As can be seen in Table 3, the results of the control condition appear to be most similar to those responses made by participants in the achievement priming condition. Importantly, in no case does the proportion of a group type listed by control condition participants exceed that of the proportion that we expected to be highest for the three priming conditions.⁵

In sum, this overall pattern of data demonstrates that priming specific needs by the scrambled sentences task activated cognitive representations of specific groups that typically function in ways that meet those needs (as indicated in Studies 1–3), and this priming influenced the groups that participants listed in the group listing task.

General discussion

The current line of research has its roots in earlier work demonstrating that people perceptually recognize distinct types of groups (Lickel et al., 2000; Sherman et al., 2002). Why then is it important and useful for perceivers to differentiate among types of groups? That question served as the basis for this paper, and one answer was uncovered herein—that the different group types serve very different functions for their members. Thus, distinguishing among group types is important and useful for knowing how and where to look to get various social needs satisfied.

In two questionnaire studies using explicit measures, intimacy groups were rated as more likely to fulfill affiliation needs than were task groups or social categories. Task groups were seen as more likely to fulfill achievement needs than were intimacy groups or social categories. Finally, social categories were rated as more likely to fulfill identity needs (but only relative to the other need fulfillments, see Footnote 2) than were intimacy groups or task

⁵ The use of the first 10 responses listed is, of course, arbitrary. One might expect that the priming effect would be strongest for the very first group listed. Therefore, we also did this same analysis, using only the first codeable response of each participant from the groups listing task. This analysis produced the same pattern of data and the same significant results.

groups. Our implicit association data from Study 3 showed that these groups and needs are implicitly, as well as explicitly, linked in memory. Finally, in Study 4, we manipulated need state and demonstrated the effects of an activated need on the accessibility of the group type that had been judged as most relevant for meeting that need. Taken together, these results provide further insight into the importance of differentiating among different types of groups. The current results correspond nicely with the findings of Sherman et al. (2002), showing that groups of the same type are represented together in memory. Our results expand on this work by suggesting that this organization is related to and may be based on the specific psychological needs that are seen as being met by each of the three types of groups.

The results of our studies support a functional perspective regarding the needs that different groups provide for their members. The relations between intimacy groups and affiliation needs and between task groups and achievement needs were very strong and consistent. The relation between social categories and identity needs was not as clearly demonstrated. In Study 1, identity needs were perceived to be fulfilled more by intimacy groups than by social categories. One factor complicating the predicted pattern was the main effect of group type: intimacy groups were rated as fulfilling all needs to a very large extent, and social categories were seen as fulfilling needs to a much lesser extent than the other group types. Due to the closeness and importance of intimacy groups, these results are not surprising. Likewise in Study 3, the data supporting the linkage of social categories and identity needs were somewhat weaker than the associations of intimacy groups with affiliation needs and task groups with achievement needs.

How can we reconcile the overall lack of need fulfillment by social categories with the plethora of theories and data attesting to the social identity functions of social categories (Tajfel & Turner, 1979)? Several possibilities occur to us.

(1) One issue concerns the homogeneity and majority group status of our sample. Our participants were largely Caucasian, middle class, college students who presumably get little social identity leverage from their majority social category group statuses. Indeed, studies have shown that minority group members are more likely to rely on group membership in granting feelings of distinctiveness and a sense of identity (McGuire, McGuire, Child, & Fujioka, 1978), and that minority group members self-stereotype to a greater degree than do members of majority groups (Simon & Hamilton, 1994). Moreover, according to Brewer (1991, 1993), minority groups are better able to provide an optimal level of distinctiveness and a strong ingroup identity than are larger, more diverse groups. Large majority groups generally fail to engage a great deal of social identification. Because smaller groups provide greater satisfaction of both assimilation and differentiation needs, members of smaller groups are more likely to identify with their groups (Abrams, 1994; Brewer, Manzi, & Shaw, 1993). Members of majority groups, such as our participants, may

be less reliant on their social category memberships for the fulfillment of identity needs.

(2) Relatedly, members of lower status groups are more likely to identify with their group than are members of higher status groups (Deaux, 1995). Again, there was a disproportionate number of high status members in our participant population, and the extent to which their identity needs were met through memberships in their social categories may have been small. In a more diverse population, social categories may have been viewed as much more meaningful for fulfilling identity needs.

(3) Another possibility is that the specific identity needs that defined our identity factor (distinctiveness, uniqueness, identity, and individuality) may not ideally reflect the functions of identification focused on by social identity theory and self categorization theory (Tajfel & Turner, 1979; Turner et al., 1987). In these theories, important benefits of personal identification with an ingroup include attaining and maintaining self-esteem (Tajfel & Turner, 1979), self-understanding through depersonalization and self-stereotyping (Turner et al., 1987), and uncertainty reduction (Hogg & Mullin, 1999). Although many of the more traditional (e.g., self-esteem related) identity needs were included in our long list of needs in Study 1, they neither significantly loaded onto our “identity” factor nor formed a separate factor of their own.

On the other hand, it is quite possible that our rather weak findings regarding the functional significance of social categories may reflect something more fundamental about the functions served by different types of groups. Perhaps social categories do in fact play a much smaller role in psychological need fulfillment than do intimacy or task groups. Our results indicated that all three group types served identity needs equally well. However, social categories did not serve affiliative or achievement needs as much as did intimacy and task groups. These findings may question the emphasis that current social psychological theory and research places on social categories. Indeed, people spend most of their daily lives living in and interacting with intimacy groups and task groups. It may be that the circumstances under which one’s social categories are salient and influential are more constrained than researchers have assumed. In fact, some of our previous results are compatible with this view. Social categories are viewed as being less entitative than intimacy and task groups (Lickel et al., 2000), and perceivers may have less well articulated theories about social categories—their general properties and how they function—than the other two group types (Lickel et al., 2000; Lickel, Rutchick, Hamilton, & Sherman, in press). Recent work supports this possibility. Plaks, Shaffer, and Shoda (2003) found that low entitativity groups were more weakly connected to goal fulfillment than were high entitativity groups. Given the Lickel et al. (2000) findings that social categories are perceived as significantly lower in entitativity than task groups or intimacy groups, perhaps it is not surprising that social categories are less strongly

associated with the fulfillment of a specific underlying need or motive than are task groups and intimacy groups.

Comparisons of functions served by group types

As noted earlier, we are not the first researchers to propose a typology of groups and to specify the functions served by various group types. Deaux (1995; Deaux et al., 1995) identified five major types of groups that, in general, although without perfect correspondence, can be aligned with the three major types identified by Lickel et al. (2000). As in the Lickel et al. studies, Deaux (1995) ascribed discrete sets of properties to the groups within each type, emphasizing the boundaries of the typology. More recently, Deaux et al. (1995) have suggested that specific groups within their group types serve distinct functions. Aharpour and Brown (2002) have also studied the discrete functions of belonging to groups of different types, types that share some similarities with those identified by Lickel et al. (2000). However, they tested only the functions of task and social category groups, omitting intimacy groups from their analysis. Further, the identification functions that they tested have relatively little overlap with the functions identified in other approaches.

In comparing these approaches with our own work, several points are noteworthy. First, our typology is empirically derived from perceivers' judgments (Lickel et al., 2000), whereas the other group distinctions are more heavily guided by theoretical and intuitive analyses. Second, the nature of the group functions emphasized by the different frameworks vary considerably. Aharpour and Brown (2002) and, to a lesser extent, Deaux et al. (1995) have focused on the variety of identity functions provided by group memberships, and have associated different identity functions with different group types. The group functions highlighted in our analysis are empirically grounded, basic psychological needs. They are individual needs that, we argue, are often met through the groups to which one belongs, as opposed to the inherently intergroup or collective needs such as ingroup cooperation and outgroup competition (cf. Deaux et al., 1995). Third, the work of Deaux et al. (1995) and Aharpour and Brown (2002) attempts to identify different functions that groups within the same group type fulfill. In contrast, our approach seeks to identify a common functional significance shared by all groups of the same type. That is, our goal is to understand the functional significance of the category system that we know, from previous research, perceivers use in their perceptions of a broad array of social groups. Finally, as far as we are aware, ours is the only group typology for which there is evidence substantiating that perceivers spontaneously use the group type distinctions on a variety of indirect measures of category use in social information processing (Sherman et al., 2002).

Future directions

As mentioned earlier, our concern in the present set of studies is with *perceptions* and cognitive representations of

group types and functionality, rather than with any *actual* properties of groups. It will be critically important to examine and understand what these functional representations imply for actual social behavior. Future research might examine whether the actual functions and need fulfillments served by the different group types correspond to the perceptions of group types and their functions uncovered in these studies. For example, psychological need states could be induced in participants, and the type of group to which they actually turn for need fulfillment could be assessed. Because perceptions of groups and their functions will clearly affect actual behavior toward groups, the perceived need type and group type pairings found herein should closely match the results of such manipulation studies. Likewise, the extent to which interactions with members of various group types actually reduce the different kinds of need states should be determined. Finally, there may also be biasing factors (e.g., salience effects, differential frequencies of group types) that undermine, at least in some cases, the correspondence between perceived and actual functions served by different group types. These biases also warrant investigation in future studies.

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