Intuitive theories of group types and relational principles

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Abstract

Three studies investigated perceivers' beliefs about the principles by which different kinds of social groups govern interactions among group members. In Study 1, participants rated a sample of 20 groups on a set of group properties, including measures of relational principles used within groups. Results showed that people believe that interactions in different types of groups are governed by different blends of relational principles unique for each type of group. Study 2 experimentally demonstrated that perceivers could use minimal group property characteristics of different types of groups (i.e., extent of group member interaction, group size, duration, and permeability) to make inferences about the relational principles used in different types of groups. Study 3 demonstrated that relational style information influences people's judgments of a group's entitativity and collective responsibility.
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Introduction

Theories, which delineate how elements of a system function in relation to one another, are crucial tools in the scientific effort to understand human society and psychology. The complex social world that scientists attempt to understand also confronts non-scientists in everyday life. For lay people, however, the tremendous complexity of social life is not merely of academic interest but is instead of vital daily importance. Given the importance of groups in their lives, lay people may also have well-developed intuitive theories of how group life is organized and functions. Such theories would be useful for anticipating the behavior of group members and for guiding one's own behavior. In the present research, we sought to understand the extent to which people believe that different kinds of social groups (Lickel et al., 2000)

rely upon different relational principles to regulate interactions among group members (Fiske, 1991). Furthermore, we investigated the extent to which perceivers use relational style information to judge a group's entitativity and to make judgments of collective responsibility.

Intuitive theories of groups

Intuitive theories consist of people's beliefs about the entities that define a given domain and how those entities operate and relate to one another. These beliefs form an interconnected system of knowledge that can be used to make inferences about phenomena within the domain in which a particular intuitive theory can be applied (Gopnik & Wellman, 1994; Morris, Ames, & Knowles, 2001; Murphy & Medin, 1985). The idea that social perceivers possess and use intuitive theories in their comprehension of the social world is not new. Past research has studied people's theories about personality (Schneider, 1973) and the extent to which personal attributes can change (Dweck, 1995), as well as people's theories about

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others' mental states and their responsibility for their actions (Heider, 1958; Wellman, 1990). Recently, researchers have recognized the importance of people's intuitive theories of social groups (Hong, Levy, & Chiu, 2001; Lickel, Hamilton, & Sherman, 2001). For example, people appear to have an intuitive theory of some groups possessing an inherent, biologically based nature or essence, a belief that can influence people's perceptions of groups and their members (Haslam, Rothschild, & Ernst, 2000; Hirschfeld, 1995; Rothbart & Taylor, 1992; Yzerbyt, Corneille, & Estrada, 2001). Other work argues that people treat some groups as discrete causal agents (e.g., Morris, Menon, & Ames, 2001).

An intuitive taxonomy of social groups

Our work has focused on perceivers' intuitive taxonomy of different types of groups. Based on their participants' judgments, Lickel et al. (2000) empirically identified four basic clusters of groups: *intimacy groups* (e.g., families, friends, and romantic partners), *task groups* (e.g., committees and juries), *social categories* (e.g., Blacks, Jews, and women), and *loose associations* (e.g., people who live in the same neighborhood, people who like classical music). These group types differ along a number of dimensions in a fairly complex manner. That is, no single feature or property defined the distinctions among the types of groups—each group type was defined by a complex pattern of group properties. Thus, intimacy groups are believed to be small, long lasting, highly interactive, and difficult to enter or exit. Task groups are small and interactive groups, but are generally not as long lasting or as impermeable as intimacy groups. Social categories are large groups with long histories and impermeable boundaries, but only modest amounts of interaction among members. Loose associations are groups that involve low levels of interaction (and are often of short duration), and that can be easily joined or left. Moreover, the group types differed significantly in the extent to which they were perceived as meaningful, coherent entities. Across several studies, intimacy groups were rated highest in entitativity, followed by task groups, social categories, and loose associations.

Furthermore, the distinctions perceivers make among the different group types are implicitly employed when perceivers encode information about groups. Using an implicit categorization task, Sherman, Castelli, and Hamilton (2002) showed that the group types were spontaneously used as participants encoded information they were acquiring about group members. Thus, this folk typology (though by no means rigid or totally uniform across all individuals) is more than just a convenient way of consciously sorting groups into categories. Instead, it reflects perceivers' cognitive structures that are spontaneously used in processing and storing information

about group members. As with other cognitive structures, we expect that perceivers would have additional knowledge and beliefs about the different group types. For example, we know already that people associate different patterns of group properties or features with each type of group and that the group types vary in their perceived entitativity (Lickel et al., 2000).

The present research was designed to extend our understanding of this intuitive taxonomy of groups. Specifically, we investigated perceivers' beliefs about the ways in which different types of groups function, and in particular, their beliefs about the norms or rules by which interactions among group members are governed. We hypothesized that lay people believe that different types of groups structure interactions among group members according to distinct sets of relational principles.

Relational principles regulating social interactions

Investigation of the relational principles used to regulate social interactions and relationships has a long history in psychology, sociology, and anthropology (e.g., Clark & Mills, 1979; Deutsch, 1975). This work has been synthesized by Fiske (1991), who has argued (from both ethnographic and experimental research) that there are four basic relational principles that humans use to regulate social interactions[1]: *Market pricing* is guided by a calculation of the utility of interaction; efficiency and maximization are the key motivations. In *equality matching*, the goal is to maintain balance among interactants, though this balance may occur over multiple interactions in the form of turn taking. Decision-making is guided by equality—one person equals one vote. *Communal sharing* is marked by a fusion of the self to the group, generosity is the key motive in exchange, and decisions are ideally made unanimously. *Authority ranking* is guided by status differences between people. Decisions are made as a decree from a leader, and orders follow a chain of command. High status persons may appropriate the belongings of lower status persons but are also expected to care for and protect underlings.

Work by Fiske (e.g., Fiske, Haslam, & Fiske, 1991) documents people's use of these relational styles, and Haslam (1994) has developed a questionnaire to assess people's perceptions of the degree of each relational style used within a particular social relationship. In the present research, we used this framework to assess beliefs about how social interactions are governed in different types of groups.

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[1] We will use the terms relational principle and relational style interchangeably. Both are also intended to be synonymous with the term "relational model" (Fiske, 1991).

Types of groups and relational principles

Given the distinctions among group types, how might perceivers' intuitive theories of those types represent the nature of interaction rules typical of each type? One possibility would be a direct matching between group type and relational style, such that each type of group is seen as employing a single, characteristic, and relational style. However, most groups require the use of more than one interaction principle to guide at least some of their interactions, and so they could not operate using a single relational style. It would thus seem unlikely that perceivers would believe this to be the case.

A second possibility focuses on the central role of social interaction in this analysis. Relational principles, in essence, are concerned with the nature of interaction between persons and the rules by which such interactions are governed. One key feature differentiating group types is the extent to which members interact with each other (Lickel et al., 2000). Therefore, the extent to which any given relational style is linked to a group type could be a function of the extent of interaction perceived among group members: the more group members interact, the more *all four* relational styles should be evident. Although this rationale is plausible and it may have merit, we do not find it completely convincing. Group types do differ in the extent of perceived interaction, but the degree of group member interaction is only one of several properties that differentiate the group types from each other. They also differ in size, duration, and in the permeability of their boundaries, among other variables. Therefore the extent of interaction alone is probably not sufficient to predict perceivers' beliefs about the relational style profile of each group type. Thus, we hypothesized that people perceive each group type as being characterized by a particular unique profile of relational style usage and we formulated the following specific hypotheses about the relational style profile of each group type.

Intimacy groups are important to their members and provide closeness and attachment to others. Members intrinsically value each other for who they are, not merely for what they get out of the relationship. Therefore, we predicted that communal sharing would be the most important relational style characterizing people's beliefs about interactions in intimacy groups. In addition, given a belief that equality of membership is important in intimacy groups, a concern about balance in outcomes among group members, reflected in equality matching, should also be a part of people's intuitive theory of intimacy groups. In contrast, we predicted that people would not perceive that market pricing and authority ranking are important principles regulating interactions among members of intimacy groups.

Task groups exist because there is a job to be done. They often have a hierarchical structure, with a clear leader and differentiation of roles among members. These features imply that authority ranking should be an important principle regulating interactions in such groups. In addition, members are willing to invest effort in a task to the extent that they get something in return, and to the extent that the group functions in an equitable manner. Therefore, market pricing and equality matching would be relevant guidelines for governance within such groups. Conversely, the selfless quality of communal sharing should be less prominent in task groups.

Social categories are very large groups that, as entire groups, are too large and disconnected to function as an organized unit in many circumstances. For the entire social category to act (e.g., in a social movement, protest, and intergroup conflict), governance of their group requires a strong leadership hierarchy. Thus, we hypothesized that authority ranking would be an important relational style in people's theories about social categories. In contrast, given the group's size, other relational styles should be less prominent in people's beliefs about interactions among members of social categories.

Loose associations, such as people living in a neighborhood or people at a movie theater, typically function as a group only for purposes that are restricted in focus and only temporarily important (e.g., concern over some new development in a neighborhood; a need to exit a theater because of fire). Interactions in such groups (often driven by personal self-interest) might therefore be guided largely by the utilitarian concerns reflected in market pricing. In contrast, the close bonding represented in communal sharing and the leadership structure that would allow authority ranking to be an effective governing principle should not be evident in this group type. Therefore, we predicted that these two relational styles would not be a central part of people's theories of loose associations.

We conducted two studies to test these hypotheses. Study 1 surveyed people's beliefs about the relational styles that are characteristic of each group type. Participants rated 20 groups on the extent to which relations in each group would be governed by the principles represented by each relational style. Study 2 used an experimental approach to investigate people's intuitive theories of group types. Participants read schematic descriptions of four different groups, designed to parallel the typical group property profile of an intimacy group, a task group, a social category, and a loose association. For each group description, participants rated the extent to which the various relational styles would govern interactions among group members. We hypothesized that this manipulation of generic descriptions of group types would generate relational style inferences parallel to the relational style ratings made of the exemplars of the four types of groups that we presented in Study 1.

Relational principles and inferences about groups

In Study 3, we focused on a different (though related) question. Specifically, perceivers may use knowledge of a group's relational style to infer other group attributes from that information. For example, we know that groups differ in the degree of entitativity they are perceived to possess. Does information about different relational principles lead perceivers to infer different degrees of group entitativity? Our reasoning suggested that it would. Because communal sharing is often described as entailing a fusing of the self to the group, groups characterized by communal sharing should be perceived as high in entitativity. Conversely, because in market pricing interactions individuals are motivated to maximize their individual outcomes, groups characterized by this interaction style should be viewed as low in entitativity. We hypothesized that groups characterized by equality matching and authority ranking would be viewed as intermediate in entitativity.

We also assessed the extent to which knowledge of a group's relational styles could be used to make inferences about collective responsibility. Collective responsibility occurs when all members of a group are blamed for undesirable actions committed by a single group member and has been shown to be related to perceptions of entitativity (Lickel, Schmader, & Hamilton, 2003). Therefore, we hypothesized that the pattern for collective responsibility ratings would be parallel to that for entitativity ratings. These hypotheses were tested both in Study 1, in which participants rated the relational styles, entitativity, and the collective responsibility for a sample of 20 groups, and also in Study 3, in which we experimentally manipulated participants' perceptions of the relational style used in a group.

Study 1

Study 1 examined two aspects of people's intuitive theories about group types. First, we determined the extent to which people believe that different types of groups are characterized by distinct patterns of rela-

tional styles. Second, we investigated the ways in which relational principles were related to perceptions of group entitativity and collective responsibility.

Method

Participants

Participants were 86 undergraduate students at the University of Southern California who participated in the study for course credit.

Materials and procedure

Materials for the study were contained in a questionnaire packet. Each page of the questionnaire contained a single rating scale and a sample of 20 groups that participants were to rate. The same 20 groups were used for each survey item, and included five intimacy groups (members of a family, close friends, two people in a romantic relationship, members of a campus fraternity, and members of a local street gang), five task groups (members of an airline flight crew, co-workers assigned to a project, members of a local environmental organization, members of the cast of a play, and members of a jury), five social categories (citizens of Poland, citizens of the United States, Women, Blacks, and Jews), and five loose associations (people at a bus stop, people in the audience of a movie, people who like classical music, students in a large lecture class, and students at a university).

Participants rated these 20 groups on 16 measures (all measures used nine point scales). Five items assessing group properties—group size, duration, permeability, group member interaction, and importance of the group to its members—were drawn from Lickel et al. (2000). The four relational styles (market pricing, equality matching, communal sharing, and authority ranking) were assessed by eight items drawn from a scale developed by Haslam (1994), with two items assessing each relational style. Because our focus was on perceptions of groups rather than interpersonal relationships, these items were adapted slightly to refer to groups rather than individual persons. Table 1 shows the wording of the items used in the study. Responses to the two items for each relational style were averaged to create composites

Table 1
Relational style items, Study 1

Communal sharing	"What's mine is yours" would be true of the relationship between people in the group
	If a person in the group needed help, another person in the group would cancel plans to give it
Equality matching	If one person in the group did something for another person in the group, the other would try to do the same thing in return next time
	If a member of the group shared something with another person in the group, they would divide it down the middle
Authority ranking	One person in the group would take most of the initiatives for the group
	One person in the group would tend to lead
Market pricing	People in the group would act toward others in the group in a purely rational way
	People in the group would keep track of how much reward they are getting for the amount of time, effort, or money they expend in the group

for each group. The reliability of these measures was as follows: Communal sharing ($\alpha = .84$), equality matching ($\alpha = .77$), market pricing ($\alpha = .27$), and authority ranking ($\alpha = .78$). The reliability for the two market pricing items adapted from Haslam's (1994) scale was low. However, both items showed the same pattern across the four types of groups and, in any event, low reliability should only work against confirmation of our predictions. In Study 2, we adapted Haslam's (1994) full six-item measure of market pricing which had higher reliability.

Two general measures of perceived entitativity were included ($\alpha = .60$). These items assessed the extent to which each group was perceived to be unified ("To what degree is this group an aggregate of individuals versus a single unit?") and the extent to which it qualified as a group ("One thing that all groups have in common is that each one is a collection of people. However, not all collections of people are considered to be groups. In the space next to each collection of persons below, write a number that represents your opinion about the extent to which it qualifies as a group."). Finally, participants rated the extent to which membership in each group would entail collective responsibility if one member of the group committed a wrongdoing ("When an individual commits an extremely undesirable act, such as committing a crime, we sometimes believe that other persons besides this individual should feel a sense of responsibility for the event. For each of the groups below, rate how responsible a member of the group should feel if another member of the group committed a serious negative act."). For each of the survey items, the presentation order of the groups was randomized to control for order effects in rating the groups; two different item orders were used to control for possible order effects among the items.

Results and discussion

Relational style profiles of different types of groups

We first analyzed the extent to which people perceive that different patterns of relational styles are associated with different types of groups. Each participant rated five exemplars from each of the four group types. We averaged responses to the two questions that indexed each relational style, and then created a composite score for each group type on each variable by averaging each participant's ratings on that variable for the five groups of each type.

These data were entered in a 4 (Group-Type) × 4 (Relational Style) repeated measures analysis of variance, which produced significant main effects of group type, $F(3, 255) = 340.13$, $p < .001$, and relational style, $F(3, 255) = 52.27$, $p < .001$.[2] Pairwise comparisons among

group types (collapsing over relational style) showed that intimacy groups received the highest rating on the totality of relational styles, followed by task groups, social categories, and loose associations (all differences significant, $p < .001$).[3] This main effect indicates that people expect high levels of interaction (of all styles) in intimacy groups, followed by task groups, etc. Pairwise comparisons among relational styles (collapsing over group type) showed that communal sharing was rated lower than all other relational styles, $p < .001$. Furthermore, market pricing was rated lower than equality matching, $p < .05$.

As predicted, these main effects were qualified by a significant interaction, $F(9, 765) = 106.95$, $p < .001$, indicating that the pattern of relational style ratings differed depending on the type of group that was being rated. To more precisely understand the extent to which each type of group had a unique profile of relational style ratings, we conducted a series of six repeated measures analyses comparing each of the group types to each of the others in pairwise fashion. A significant interaction on a repeated measure analysis indicates that perceivers believe that qualitatively different *patterns* of relational style usage characterize group member relations in the two groups being compared. In line with our predictions, there was a significant interaction between group type and relational style (all $F(3, 255) > 27.00$, all $p < .001$) in every one of the six analyses comparing each pair of groups. These results demonstrate that each group type was characterized by a unique relational style profile.

Fig. 1 shows the relational style profile for each type of group. The overall descending slope reflects the main effect of group type discussed earlier. This finding is consistent with the possibility that differences between group types might reflect simple quantity of interaction, with groups with high levels of interaction (e.g., intimacy groups) being perceived as using all of the relational principles to a large extent. However, what is more striking are the distinct patterns represented in the profiles for different group types, as documented by the six significant pairwise interactions. Furthermore, these distinct patterns are largely consistent with our hypotheses. Intimacy groups were perceived to be characterized by high levels of communal sharing and equality matching, moderate levels of authority ranking, and relatively low levels of market pricing. Task groups, as predicted, were perceived to be regulated by high levels of market pricing and authority ranking and low levels of communal sharing. Social categories were perceived to be regulated by moderate levels of equality matching, lower levels of market pricing and authority ranking, and much lower levels of communal sharing. Finally, loose associations

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[2] All repeated measures analyses in Studies 1–3 use the Greenhouse-Geisser sphericity adjustment.

[3] All post hoc tests in Studies 1–3 use the Sidak adjustment for multiple comparisons.
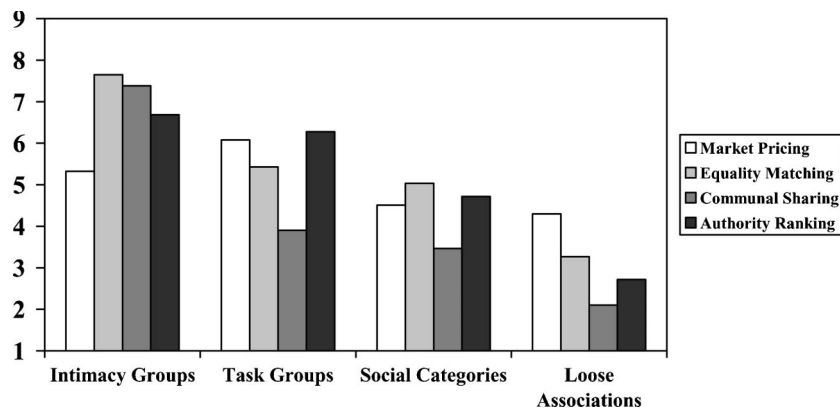
Fig. 1. Relational style ratings of group types, Study 1.

were perceived to be regulated by relatively high levels of market pricing, with lower levels of equality matching, authority ranking, and communal sharing.

To more formally examine the extent to which participants' ratings match our predictions about these patterns, we conducted contrast analyses in which contrast weights were applied to the ratings of communal sharing, equality matching, market pricing, and authority ranking that correspond to our predictions for each type of group. Thus, the weights for the intimacy group profile were $3 \times$ communal sharing $+ 1 \times$ equality match ing $- 2 \times$ market pricing $- 2 \times$ authority ranking. The weights for the task group profile were $-4 \times$ communal sharing $+ 1 \times$ equality matching $+ 1 \times$ market pricing $+ 2 \times$ authority ranking. The weights for the social category profile were $-1 \times$ communal sharing $- 1 \times$ equality matching $- 1 \times$ market pricing $+ 3 \times$ authority ranking. The weights for loose association profile was $-1 \times$ communal sharing $+ 0 \times$ equality matching $+ 2 \times$ market pricing $- 1 \times$ authority ranking. A large positive number (significantly greater than zero) indicates that the actual profile fits the predicted profile, whereas a small (or negative) number indicates that the actual profile did not fit the predicted profile.

We used these planned contrasts to address two different questions. First, following the most typical use of such contrasts, weighted contrasts were performed for each group type to determine if the contrast was significantly greater than zero. These tests evaluate the extent to which our hypothesis for a given group type, as represented in the weights for that group type, was in fact manifested in the pattern of relational style means for that group type. The results of these contrasts consistently supported our hypotheses. The predicted weighted contrast was significantly greater than zero for all four group types ($p < .001$ for intimacy groups, task groups, and loose associations; $p < .05$ for social categories). In other words, the pattern of means specified in our hypotheses for each group type was present to a statistically significant degree.

Second, we also used these contrast weights to conduct additional tests that are pertinent to our hypothe-

ses. Similar to the logic of discriminant validity, we determined the extent to which the weights for a given group type fit the pattern of means for its group type better than they fit the means for other group types. To address this, we used the weights for a given group type (e.g., intimacy groups) and applied them as weights in contrasts for each of the other group types (task groups, social categories, and loose associations). If our hypotheses are correct, then the weights for one group type should not fit the data as well for the other group types. With one exception, the results of these analyses supported our predictions. Specifically, the weighted contrasts for intimacy groups, task groups, and loose associations fit the data for their corresponding group types to a significantly greater degree ($p < .001$ in all cases) than they fit the data for any other group type. The contrast weights for social categories fit the data for social categories better than for the data from intimacy groups and loose associations. The lone exception was that the contrast of social categories was not significantly greater than the contrast result when these weights were applied to the data for task groups. Thus, overall, 11 of 12 contrast tests supported our predictions.

In sum, the results of these contrasts document that: (a) the pattern of means for each group type conformed to our predictions and (b) with one exception, these patterns were meaningfully different from each other.[4]

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[4] For converging evidence, we also used each group's relational style ratings as inputs into a k-means clustering analysis. This clustering analysis identified four group clusters and was remarkably consistent with the findings in Lickel et al. (2000). The same basic clusters of intimacy groups, task groups, social categories, and loose associations were evident, with only three groups falling into different clusters in the present analysis than in Lickel et al. (2000). Thus, clustering based on perceivers' beliefs about how people in groups regulate interactions with one another matches the group clustering results based on patterns of structural properties and clustering results based on participants' responses in a free-sort task.

Relational styles as predictors of entitativity and collective responsibility

We next analyzed the extent to which people's beliefs about relational principles predict their perceptions of entitativity and collective responsibility. The data for these analyses consisted of each participant's ratings of the 20 groups on the measures of relational styles, entitativity, and collective responsibility. Because of the nested design (i.e., each participant rated 20 groups), this analysis must account for the lack of independence among the 20 observations contributed by each participant. In what follows, we discuss correlational analyses and results of hierarchical linear modeling that account for this nested design.

To construct a correlation table, we calculated a set of correlations from each participant's ratings of the groups and then determined the median correlation coefficient for each variable pair (e.g., the median correlation between communal sharing and collective responsibility) from the 86 participants. Table 2 shows these median correlation coefficients. We would note first that the four relational styles are positively intercorrelated. This finding parallels the main effect of group type on relational style ratings reported earlier—groups that are rated high on one type of relational style are likely to be rated high on other relational style as well. Note, however, that ratings of equality matching and communal sharing were particularly highly correlated ($r = .86$). Fiske (1992) has argued that these relational styles are psychologically distinct. However, the present research indicates that people believe that it is very likely that a group using a particular level of communal sharing is also likely to use a corresponding level of equality matching.

To more closely examine the extent to which perceptions of different relational styles predicted judgments of entitativity and collective responsibility, we used hierarchical linear modeling to determine the unique relationship of each relational style to entitativity and collective responsibility. HLM is a statistical method that accounts for nested data. In the current study, group ratings are nested within individuals. For these analyses all variables were Z-transformed such that standardized coefficients are reported. Predictor variables were entered as participant-centered, and models were specified with a random effect for variables when analysis of variance components revealed significant variability.

These HLM results significantly clarify the relationship between each of the relational styles to entitativity and collective responsibility. With regard to entitativity, when entered as simultaneous predictors, communal sharing ($\gamma = .29$, $p < .001$), equality matching ($\gamma = .27$, $p < .001$), and authority ranking ($\gamma = .20$, $p < .001$) all were strong predictors of entitativity, whereas market pricing was much less strongly related ($\gamma = .06$, $p < .05$). These predictors also remained significant when controlling for basic structural properties of the groups (i.e., size, duration, permeability, and degree of group-member interaction). With regard to collective responsibility, communal sharing was the dominant predictor ($\gamma = .49$, $p < .001$), whereas equality matching ($\gamma = .19$, $p < .001$) and authority ranking ($\gamma = .14$, $p < .001$) were less strongly predictive of collective responsibility, and market pricing was not a predictor ($\gamma = -.01$, *ns*). These results also held when controlling for basic structural properties of the groups (i.e., size, duration, permeability, and degree of group–member interaction). This analysis clearly documents that groups believed to be governed by communal sharing are likely to be perceived as highly entitative groups. Also, in groups believed to be governed by communal sharing, members will most likely be held responsible for the wrongdoings of a fellow group member. However, these analyses indicate that equality matching and authority ranking may also be predictors of both entitativity and collective responsibility even when controlling for perceptions of communal sharing.

There is, however, some need for caution in making this interpretation. As noted earlier, communal sharing was very highly correlated with equality matching (and all of the relational styles were to some degree correlated). Therefore, firm conclusions about the independent role of each relational style may be premature. In Study 3, to provide more conclusive evidence on this issue, we experimentally examined the effect of relational style information on judgments of entitativity and collective responsibility. Before doing so, however, in Study 2 we provide experimental evidence regarding our primary focus, namely, people's beliefs about the mix of relational styles used in different types of groups.

Table 2
Correlations among variables, Study 1

	Collective responsibility	Market pricing	Equality matching	Communal sharing	Authority ranking
1. Entitativity	0.68	0.42	0.69	0.72	0.59
2. Collective responsibility	—	0.38	0.73	0.80	0.55
3. Market pricing		—	0.50	0.37	0.43
4. Equality matching			—	0.86	0.59
5 Communal sharing				—	0.55
6. Authority ranking					—

Study 2

Study 1 provided evidence that each type of group is associated with a unique relational style profile. However, these results were generated from participants' ratings of specific exemplars of the different types of groups. Thus, we do not know the extent to which the relational style inferences were driven by participants' beliefs about the properties associated with the group types (e.g., size, degree of group–member interaction, etc.) versus other variables that we did not measure in the study. Therefore, in Study 2, we investigated the extent to which participants would make consistent relational style inferences when provided with only a schematic description of a group's properties. In this way, we sought to ensure that the association between group types and relational styles was based on the properties of the group types, rather than on idiosyncratic elements of the specific groups rated in Study 1. We hypothesized that, when provided with a description of the general properties of a particular type of group, perceivers would infer that the group would be regulated by the particular pattern of relational styles observed in Study 1. To test this hypothesis, we manipulated descriptions of the size, duration, permeability, and level of interaction of four hypothetical groups, and asked participants to use this information to assess the extent to which they believed that interactions among group members would be perceived to be regulated by each relational principle.

Method

Participants

Participants were 31 female and 17 male undergraduates at the University of California, Santa Barbara who participated in the study for course credit.

Materials and procedure

The materials consisted of a questionnaire containing schematic descriptions of four groups. The groups were described by information about four basic properties: their size, duration, permeability, and the amount of interaction that existed among their members. These properties were chosen because in earlier work (Lickel et al., 2000) they were the primary components of the group property profiles that differentiated the clusters of groups. Each property profile corresponded to that of a different type of group. Thus, participants rated four different hypothetical groups, each described by a different pattern of properties.

Participants were told that the study concerned perceptions of how people in different types of groups relate to one another and that they would read descriptions of four groups and rate each one on a series of rating scales. Participants were then presented with the four group descriptions, which consisted of four brief statements describing the four group properties. Thus, the intimacy group profile described the group as being small in size, existing for a long time, being very difficult to enter and leave, and interacting frequently. Another group was described as being small in size, existing for a moderate amount time, being moderately difficult to enter or exit, and having high group–member interaction, a set of properties belonging to task groups. A third group was described as being large in size, existing for a long time, being very difficult to enter and leave, and having a moderate level of interaction among its members, which is the pattern of properties associated with social categories. The fourth group was described as being small in size and short in duration, being relatively easy to enter and leave, and having a low amount of interaction among its members, which is the set of properties ascribed to loose associations. The order in which these group descriptions were presented was fully counterbalanced. In the analyses described below, we use the label of the group that corresponds to the properties in the description, but this label was not provided to participants in the study.

Participants were asked to rate each of the four group descriptions on a questionnaire designed to assess the four relational styles (Haslam, 1994). This was the same questionnaire from which items in Study 1 were drawn. However, in Study 2 the entire 24-item questionnaire (again modified slightly to refer to the relational style used among people in a group rather than toward an individual person) was used. Six items in the questionnaire assessed each of the four relational principles. Ratings on the six items for each relational principle were averaged into composites: Communal sharing ($\alpha = .94$), equality matching ($\alpha = .78$), market pricing ($\alpha = .61$), and authority ranking ($\alpha = .81$). We also examined the correlations amongst the relational styles and found that the patterns largely replicated Study 1. Communal sharing and equality matching were highly correlated ($r = .73$, $p < .001$), communal sharing and market pricing were uncorrelated ($r = -.02$, *ns*), and authority ranking, equality matching, and market pricing were moderately intercorrelated ($rs = .25$–$.37$, p's $< .05$).

Results and discussion

To test the extent to which the schematic group descriptions were used by perceivers to make inferences about how members of the group would be likely to relate to one another, we conducted a 4 (Group Type Described) × 4 (Relational Style) repeated measures analysis of variance. This analysis revealed significant main effects for the type of group description, $F(3,141) = 63.942$, $p < .001$, and relational style, $F(3,141) = 5.905$, $p < .001$. Pairwise comparisons among group types (collapsing over relational style) showed that the intimacy group description was rated highest on the use of relational principles, followed by the task group description,

the social category description, and the loose association description; all differences except that between the task group description and the social category description were significant, $p < .001$. As can be seen in Fig. 2, these findings clearly parallel the results obtained in Study 1. Again, group types with higher levels of social interaction among the members of a group led to ascribing higher levels of use of all the relational principles to regulate social interactions. Pairwise comparisons among relational styles (collapsing over group type) showed that communal sharing was perceived as being used less than the other relational styles ($p < .05$), while the average ratings of the other three relational styles did not differ. This result also parallels the results obtained in Study 1.

More importantly, these main effects were qualified by a significant interaction, $F(9, 423) = 30.893$, $p < .001$, showing that the different group descriptions generated qualitatively different patterns of ratings for the four relational principles. To clarify this interaction, we conducted a series of six 2 (Group-Type Described) × 4 (Relational Style) repeated-measures analyses of variance. As in Study 1, these six repeated measures analyses enabled us to compare the patterns of ratings associated with each pair of group types. All but one of these pairwise comparisons yielded a significant interaction, all F values > 21.15, p values $< .001$. The exception was the comparison between the relational style ratings for the task group description and the social category description, for which the interaction was not significant, $F(3, 141) = 1.027$, $p = .38$.

As in Study 1, we tested our specific hypotheses by conducting planned contrast analyses in two phases. The first analyses determined if the weighted planned contrast for each group type was significantly greater than zero. The weighted contrasts for intimacy groups, task groups, and loose associations supported this hypothesis. Thus, for these three groups, the pattern of means conformed to those specified in our hypotheses. Unlike Study 1, the weighted contrast for social categories did not differ significantly from zero.

The second phase determined whether the weights for each group type fit the pattern of means for that type better than those weights fit the data for other group types. The results provided considerable, but not complete, support for our hypotheses. The weighted contrast for intimacy groups was significantly greater than when these weights were applied to the data for any other group type. Similarly, the contrast for loose associations was significantly greater than the comparable value when these weights were applied to the data for any other group type. The weighted contrast for task groups was significantly greater than when these weights were applied to the data for intimacy groups, but not for social categories or loose associations. Finally, the results of comparable tests for social categories yielded no significant differences for any group types. In sum, the pattern of means for each group type largely conformed to our predictions. However, it should be noted that our hypotheses were least supported for social categories and we suggest that more work is required to fully understand how perceivers think about how people defined by a common social category regulate social interactions with one another.

To further examine the degree of convergence between Study 1 and 2 we analyzed the extent to which the ratings for each relational principle within each group type in Study 2 were correlated with the parallel ratings in Study 1. These analyses yielded positive Spearman's ρs of .80 for the ratings of the relational principles for intimacy groups in Study 2 compared to Study 1, .80 for task groups, .40 for social categories, and .80 for loose associations. Thus, although we note some exceptions, it appears that even schematic descriptions of different types of groups led perceivers to infer patterns of relational styles that would characterize how members of each group relate to one another. Thus, Study 2 establishes the generalizability of the findings based on participants' ratings of the 20 specific groups in Study 1 and provides experimental evidence that perceivers are able to move inferentially from group properties that
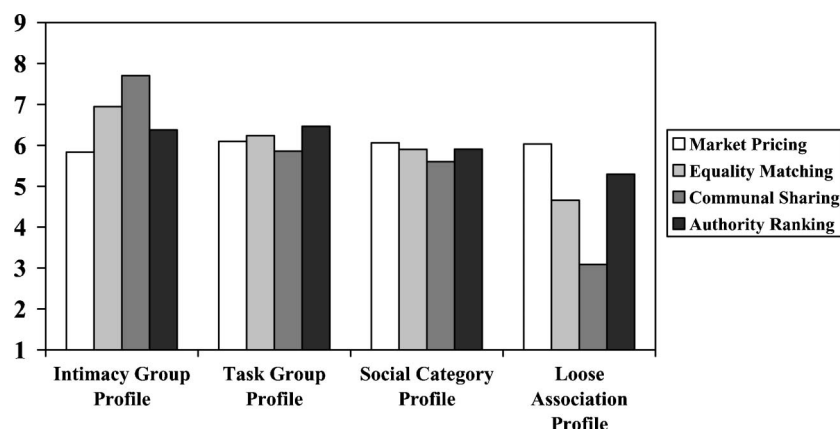

Fig. 2. Relational style ratings of group descriptions, Study 2.

define a given group type to the pattern of relational principles that is likely to define how interactions in the group are regulated.

Study 3

The findings from our first two studies show that people's beliefs about relational principles are part of their system of beliefs about social groups. Furthermore, perceivers appear to believe that each type of group uses a complex mix of relational principles for governing interactions among group members. There does not appear to be a single "signature" relational style that each type of group uses in overwhelming preference to all other relational styles.

We hypothesize that the way in which a group structures social interactions amongst group members is an important cue to its entitativity and may also affect other judgments about the group, including collective responsibility. However, the results of the first two studies paint a more complicated picture of how relational style information may be related to entitativity and collective responsibility. Because perceivers expect that groups are generally managed by a mix of relational styles, it becomes more difficult to make strong causal inferences about the links from any one relational style to entitativity or collective responsibility. Study 1 also indicated that people's ratings of communal sharing and equality matching are very highly correlated. This finding raises some concern about the claim by Fiske (1991) that these relational styles are psychologically distinct. Because of this high correlation we were cautious in Study 1 about our HLM analyses that linked each of the relational styles to entitativity and collective responsibility. To address these questions, Study 3 experimentally tested whether relational style information affects judgments of entitativity and collective responsibility. The study also allowed us an opportunity to more clearly disentangle equality matching and communal sharing.

Method

Participants

Thirty-three female and 15 male introductory psychology students at the University of California, Santa Barbara participated in the study as a course requirement.

Materials and procedure

The materials for Study 3 were contained in a packet that presented descriptions of four hypothetical groups. For each group, a set of six statements described the interactions among the group's members. These sets of statements were adapted from Haslam (1994) to represent the four relational styles, and were the same items

on which participants rated different types of groups in Study 2. The sequence in which the group descriptions were presented was fully counterbalanced. Following its description, each group was rated on several types of properties. Our discussion will focus on perceivers' inferences of entitativity and collective responsibility.[5] With regard to entitativity, participants rated each group on the extent to which it qualified as a group, the degree to which it was perceived as a unified group rather than as an aggregate of individuals, and its cohesiveness ($\alpha = .65$). Using the same item as in Study 1, participants also rated the extent to which membership in each type of group would entail collective responsibility for wrongdoings.

Results and discussion

Entitativity

Our first analysis examined the effect of the relational style manipulation on participants' entitativity ratings of the four group descriptions. As predicted, the main effect of relational style used to describe the group was significant, $F(3, 141) = 29.61$, $p < .001$. Post hoc tests revealed that the group described as using communal sharing in interactions among group members was rated significantly ($p < .05$) higher in entitativity (6.92) than the other groups. Equality matching (5.49) was second highest in entitativity, followed by authority ranking (4.74), and finally market pricing (4.29). Equality matching was higher ($p < .05$) higher than market pricing, but the authority ranking description did not significantly differ from the equality matching or market pricing descriptions. Thus, it is clear that different relational principles imply differing degrees of group entitativity.

Earlier we noted that in Study 1 two of these relational styles, communal sharing, and equality matching, were very highly correlated, and this limited our interpretation that communal sharing was the strongest independent predictor of entitativity. The experimental results obtained in this study clearly demonstrate that, though highly correlated, these two relational styles are not equivalent: communal sharing leads to higher levels of perceived entitativity than does equality matching.

Collective responsibility

As we have just seen, relational styles vary in the extent to which they foster perceptions of entitativity. If so, then those relational styles may also influence judgments closely related to entitativity, such as collective responsibility judgments. Consistent with this hypothesis, a one-way analysis of variance demonstrated that groups described by different relational styles were

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[5] Results for the other variables—judgments of group size, duration, permeability, interaction among the members of the group, and importance to the group members—are available from the first author.

ascribed very different levels of collective responsibility, $F(3, 141) = 48.91$, $p < .001$. Post hoc analyses indicated that the group described by communal sharing was given significantly ($p < .05$) higher ratings (7.04) of collective responsibility than were groups described by the equality matching (4.98), authority ranking (4.46), and market pricing (2.85) relational styles. The equality matching and authority ranking descriptions were given statistically equivalent ratings, and the group described by market pricing was assigned significantly ($p < .05$) lower collective responsibility ratings than the other descriptions.

General discussion

These studies further our understanding of people's intuitive theories of groups in several novel ways. First, the research is the first to document people's beliefs about the mix of relational styles used across the range of social groups from loose associations to social categories to task and intimacy groups. Not only do people believe each type of group generally uses a distinct mix of relational principles (as shown in Study 1) but people may associate these distinct relational style profiles even with very schematic descriptions of each type of group (Study 2). Second, the research is the first to demonstrate with both correlational (Study 1) and experimental (Study 3) evidence that relational style information affects judgments about the entitativity and collective responsibility of groups.[6] Finally, Study 1 provided novel information about the correlation of different relational styles across different types of groups. In particular, we discovered in Study 1 that perceivers view the use of communal sharing and equality matching in groups as highly correlated. Although we agree with Fiske that these relational styles are distinct, their high intercorrelation (at least in a sample of North American perceivers) suggests that researchers should take special care to design studies that can cleanly disentangle the effect of each relational principle. Thus, in summary, these studies demonstrate that perceivers have robust views about how different types of groups organize social relations among group members and also that perceivers use relational style information to make important social judgments pertaining to groups and their members. Below, we raise several further questions that can be addressed

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[6] In Study 3, we experimentally manipulated relational style information and demonstrated effects on judgments of collective responsibility and entitativity. However, it is important to recognize that in everyday settings the basic structural properties of different types of groups (e.g., group size, duration, permeability, and degree of interaction) may influence the relational styles used in a group and therefore these properties may distally (and perhaps directly) influence the perceived entitativity and collective responsibility of the group.

using the current research as a springboard (see Haslam, 2004, for other current work on relational models theory).

One question that warrants further research is the way in which membership in different kinds of groups and the use of different relational styles operate to fulfill people's needs and motivations. In an earlier paper (Lickel et al., 2000), we suggested that different kinds of groups might serve different needs. Recently, Johnson et al. (2003) found evidence for this—specifically that intimacy groups serve the need for attachment and belonging, task groups a need for achievement, and social categories a need for identity. Pickett, Silver, and Brewer (2002) also showed that the group types differed in meeting needs of assimilation versus differentiation from others. Interestingly, Fiske (1991) argued that each relational style is linked to a particular fundamental motivation and way of defining the self. In his view, nurturance needs would be fulfilled through communal sharing, power through authority ranking relationships, achievement through market pricing interactions, while under other circumstances a need for equality would be met through equality matching.

These hypotheses about the needs served by different relational styles correspond to some degree with the empirical findings of the needs served by different group types. For example, Fiske's hypothesis that communal sharing interactions meet a need for attachment and nurturance is consistent with Johnson et al.'s (2003) finding that people view intimacy groups as meeting attachment needs. Other findings from these two lines of work are not parallel, however. For example, Fiske (1991, p. 44) argued that race and ethnic identities are defined by communal sharing. Johnson et al. (2003) found that people believe that social category memberships do serve a need of defining one's identity, but also found that this is probably distinct from attachment or nurturance provided by communal sharing. It will be fruitful to further investigate how both different relational styles and group types serve different needs.

Another key issue concerns the cultural universality of the group types that we have been investigating in our work. Our findings indicate that, at least in the US, particular types of groups are perceived to be governed by certain combinations of relational principles. However, in other cultures there may be different types of social groups that use a particular mix of relational principles to govern interactions among group members. For example, in cultures high in power distance (Hofstede, 1980), authority ranking may be a more central way of defining group types than in more egalitarian societies. Cross-cultural work should study the generalizability and variation in perceivers' intuitive taxonomy of social groups.

A final issue addressed in our work concerns the role of relational style information as a cue to judgments of

entitativity. In this paper, we show that groups differ not only in the degree of interaction among group members but also in the nature, or style, of that interaction. Our past work (Lickel et al., 2000) indicated that people's perceptions of the degree of interaction among members of a group are strongly correlated with perceptions of the group's entitativity. The results of Study 3 demonstrated a strong effect of the *nature* (relationally) of group members' interaction on perceptions of entitativity. In future research, it will be important to disentangle the extent to which degree of interaction versus the kind of interaction (i.e., communal sharing versus other relational styles) are used by perceivers to form impressions of a group's entitativity.

In this paper, we have sought to integrate research investigating people's beliefs about the nature of social groups (e.g., Hong et al., 2001; Lickel et al., 2000) with work investigating the principles by which people govern social interactions (e.g., Clark & Mills, 1979; Fiske, 1991; Haslam, 1994). Clearly, there are connections between the way in which two people structure a social interaction and the larger group membership in which that interaction is embedded. As we have described in this paper, there is a complex and interesting interplay between these levels of social structure and a corresponding complexity in people's understanding of that interplay.

Acknowledgments

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