

Antecedents of entitativity in categorically and dynamically construed groups

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Abstract

The extent to which a set of people is perceived as a meaningful group, as one entity, is called entitativity. In this paper, we propose that there are two qualitatively different group construals, or ways of thinking, about groups: as dynamic groups or as categorical groups. Two experiments investigated this distinction. An analogy was used to induce these construals by having participants think of the same group (the group “bees”) either dynamically (as the interacting members of a hive) or categorically (as the members of the species). We then gave participants information about a social group and assessed the impact of the construal manipulation on how that information was processed. Study 1 showed that perceivers recall and report different perceptual cues (similarity and interaction characteristics, respectively) when groups are thought of in these different ways. Study 2 showed that judgments of entitativity are differentially based on a group’s similarity versus interaction under these different group construals. The results suggest that group construals change the properties on which entitativity is based. Copyright © 2008 John Wiley & Sons, Ltd.

Imagine that you are a reporter in the Gaza Strip. One day, moving through the city, you come upon a line of riot police facing off with a crowd of protesters. Some hold banners and chant slogans. Many are masked, and some seem ready to incite the crowd to violence. Suddenly, someone throws a stone at the line of police. The crowd roars, a barrage of stones follows, and the police crouch behind their riot shields and begin to advance.

In observing this scene, one possibility is to think of the protesters as “Palestinian protesters:” young, angry, poor, potentially violent. You would see them as a group because they are the same *type* of person, because they have characteristics in common. Alternatively, you could focus on the *relationships* among and functions of the group members: who directs their activities? What values are they advocating? What common objectives do they hope to achieve? In this case, you would see them as a group because of the actions they are taking, because of what they are doing. As this example illustrates, the same group—the same collection of individuals—can be perceived in different ways, depending on the mindset of the perceiver. In this paper, we examine how these different mindsets influence how a collection of individuals comes to be seen as a group. We propose that the perceiver’s way of thinking determines the antecedents that drive the perception of a coherent social target. Specifically, in contrast to types of *groups* that exist as such in the world, we propose that there are different *ways of thinking* about groups.

Campbell (1958) argued that the perception of sets of people as meaningful social entities occurs to varying extents, and that this variation could be empirically examined. He termed this quality “entitativity,” the degree to which a social aggregate has real existence. Drawing on research in perception, he proposed that the same cues that lead aggregations of nonhuman objects to be perceived as entities could be applied to social perception, and he described a set of principles of perceptual organization that specify these cues. These principles included *pregnance*, the degree to which objects in an

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aggregate make up an organized pattern with a closed boundary; *common fate*, the degree to which objects move together in the same direction over time; *similarity*, the degree to which the objects in the grouping share some property or properties; and *proximity*, the physical closeness of two objects.

The tasks that Campbell posed were clear: developing a systematic way to detect the presence of relevant cues, determining which of the hypothesized perceptual cues actually lead to perceiving entitativity in social groups, and assessing the nature of the consequences of perceiving group entitativity. In the past decade, increased attention has been focused on these issues (for reviews, see Brewer & Harasty, 1996; Hamilton, Sherman, & Rodgers, 2004).

ENTITATIVITY AND SOCIAL PERCEPTION

With some exceptions (e.g., Brewer & Harasty, 1996), much of the research that pursued the questions posed by Campbell investigated the consequences of entitativity in various domains of social perception, such as judgments of threat (Abelson, Dasgupta, Park, & Banaji, 1998; Dasgupta, Abelson, & Banaji, 1999) and collective responsibility (Denson, Lickel, Curtis, Stenstrom, & Ames, 2006; Lickel, Schmader, & Hamilton, 2003). Comparatively less attention had been focused on the question of which of Campbell's hypothesized cues were actually associated with entitativity.

To investigate the cues used to judge entitativity, Lickel, Hamilton, Wierzchowska, Lewis, Sherman, and Uhles (2000) had participants rate 40 different groups on the degree to which they possessed entitativity and various other properties (e.g., common outcomes, similarity). Several properties, including the extent of interaction among a group's members, the importance of a group to its members, and the similarity among a group's members, correlated highly with ratings of entitativity. Lickel et al. (2000) then constructed a profile of the rated properties of each group and used structural analyses to identify sets of groups with similar properties. This analysis yielded four "types of groups:" intimacy groups, task groups, social categories, and loose associations. These group types differ in their placement along what Hamilton, Sherman, and Lickel (1998) called an "entitativity continuum," with intimacy groups highest in entitativity, followed by task groups, social categories, and loose associations (Lickel et al., 2000; Pickett, Silver, & Brewer, 2002). Moreover, Sherman, Castelli, and Hamilton (2002) provided evidence that perceivers may implicitly use the group typology to organize behavioral information about groups. These researchers used a paradigm similar to the "who-said-what" task (Taylor, Fiske, Etcoff, & Ruderman, 1978) in which participants were exposed to behavior performed by members of various groups. When subsequently asked to match the actors with the behavior they performed, participants were more likely to mismatch two actors belonging to groups of the same type than two actors belonging to groups of different types. For example, participants more frequently confused the actions of a family member (intimacy group) with those of a friend (intimacy group) than with those of a committee member (task group). This demonstrates that perceivers do not need to be explicitly instructed to categorize groups in order for the typology to impact their representations of behaviors.

In addition to identifying this organizing typology, these studies identified several properties that are perceived to be associated with entitativity in real-world groups. However, these studies did not identify the sources of entitativity in different groups or experimentally manipulate group properties to assess their impact on entitativity (although see Castano, Yzerbyt, & Bourguignon, 2003), issues that remain largely unaddressed. Theoretically, this work (Hamilton et al., 1998) takes a synthetic approach to the study of groups, specifying a common dimension on which various groups can be compared.

DYNAMIC AND CATEGORICAL GROUPS

Wilder and Simon (1998) proposed a different perspective on the study of groups, an approach that emphasized contrasts, rather than commonalities, between different kinds of groups. These authors concluded that two distinct meanings of the term "group" could be identified, suggesting that the historical use of one term to encompass all collections of people was at best inadequate and at worst misleading. They drew a distinction between *categorical* and *dynamic groups*, and argued that the two are distinct kinds of social targets.

These ideas were not entirely new. Among early theorists, the distinction was most clearly articulated by Asch (1952), who argued that groups whose members are interdependent are "fundamentally different in character"

(Asch, 1952, p. 260) from groups whose members merely “possess some property in common.” Asch considered the latter to be “classes of persons” rather than psychologically meaningful groups. Many theorists in the group dynamics tradition also maintained that real groups require interdependence among their members (e.g., Cartwright & Zander, 1960; Krech & Crutchfield, 1948). On the other hand, the social identity and stereotyping literatures have shown that people linked only by shared properties can be perceived as social groups, with important consequences (e.g., Tajfel, Billig, Bundy, & Flament, 1971). Indeed, theorists in the social identity theory tradition argue that social groups can be every bit as meaningful and “real” without interdependence and direct interaction between their members. Wilder and Simon (1998) acknowledged both of these perspectives, and defined two corresponding kinds of groups by specifying distinct criteria for membership in each. Specifically, similarity is the criterion for membership in categorical groups, and interaction is the criterion for membership in dynamic groups.

Drawing on Asch’s ideas as well as the categorization and group dynamics literatures, Wilder and Simon suggested a number of ways in which the two kinds of groups differ. First, they argued that individual members of a categorical group are “holograms” of the group as a whole, because they necessarily possess the group’s defining features. Therefore, inferences (presumably about category-relevant traits) are frequently made about individuals if their category membership is known. Wilder and Simon argued that equivalent inferences about members of dynamic groups are made less readily because the members of such groups need not be similar.

Second, Wilder and Simon suggested that dynamic groups could possess “emergent group properties” (Asch 1952), synergetic properties of the group as a whole that result from the interaction among the group’s members but are not possessed by the group’s members individually. Conversely, categorical groups are merely the sum of their members and do not possess emergent properties. Recent work by Postmes, Spears, Lee, and Novak (2005) demonstrated one implication of this difference. These researchers distinguished between social identities that are induced (generated from individual members’ qualities) and those that are deduced (brought on by group-level properties). Postmes et al. (2005) found that in groups whose social identity was induced, depersonalization decreased social influence, whereas in groups whose social identity was deduced, depersonalization increased social influence, underscoring the importance of the origin of a group’s identity.

Recently, Brewer, Hong, and Li (2004) introduced a perspective on entitativity that complements Wilder and Simon’s (1998) distinction. Brewer et al. (2004) proposed that different cues to entitativity could be considered theories that perceivers hold about the commonalities that exist among a group’s members. On the one hand, essence theories emphasize shared static properties such as psychological traits or other characteristics that are stable across time and situation. On the other hand, agency theories emphasize shared goals and actions and include properties that are specific to a particular social context. This difference roughly parallels the distinction between categorical and dynamic groups drawn by Wilder and Simon (1998) and the group construal distinction outlined in this paper.

Little empirical work has demonstrated evidence for the importance of this distinction. One exception is a recent paper by Ip, Chiu, and Wan (2006). In a series of studies, these researchers showed participants groups of cartoon creatures on an alien planet, varying the groups’ physical similarity and synchronicity of movement. Participants rated the groups’ entitativity and the extent to which the groups had common traits and common goals. Ip et al. (2006) postulated two bases for perceiving group entitativity. Specifically, they predicted (a) that physical similarity would predict entitativity and that the effect would be mediated by perceptions of common traits and (b) that synchronous movement would also predict entitativity but that the effect would be mediated by perceptions of common goals. These hypotheses were generally supported: physical similarity predicted entitativity (when the groups were physically dissimilar), mediated by perceptions of common traits but not by perceptions of common goals; coordinated movement also predicted entitativity, but mediated by perceptions of common goals and less strongly by perceptions of common traits. Thus, Ip et al. (2006) suggest that there are two different routes to entitativity—as a consequence of perceiving common traits and common goals—a distinction that parallels the conceptual frameworks of Brewer et al. (2004) and Wilder and Simon (1998).

Recent research by Spencer-Rodgers, Hamilton, and Sherman (2007) provided further evidence that these two paths to entitativity might yield distinct consequences. Spencer-Rodgers et al. found that for both social categories and task groups (two of the group types defined by Lickel et al., 2000) entitativity was strongly predictive of stereotyping. However, in social categories, perceived homogeneity and essence were also strong predictors of stereotyping, whereas in task groups, perceived agency and role differentiation were strong predictors of stereotyping. Entitativity-mediated stereotyping in both types of groups. Spencer-Rodgers et al. (2007) suggested, then, that different groups can attain their entitativity in different ways.

The research reviewed above has documented the important distinction between categorical and dynamic groups, and has shown that the entitativity of the two types of groups is related to different group properties. In the present paper, we extend this analysis in a new way. Specifically, we argue that the distinction between categories and dynamic groups rests partly in the minds of perceivers. That is, in our view, any given group can (in principle) be construed categorically or dynamically. Thus, in addition to *types of groups* that we perceive in the social world, we propose that there are different *ways of thinking* about groups.

When people think about a group in a dynamic way, they envision its existence in the physical world. They consider the interdependence among the group's members and the social context in which the group appears. This kind of thinking roughly corresponds to the definition of a dynamic group discussed by Wilder and Simon (1998). A group attains its perceived "groupness" by virtue of its actions as a unit; it *does* something (Brewer et al., 2004). Its members either act collectively, on the outside world, or intramurally, with one another. It is this perceived interaction that causes a dynamically construed group to be perceived as a single unit.

Conversely, when people think about a group in a categorical way, they do not envision the physical existence of its members, but rather a prototype (Brewer & Harasty, 1996) or, in some conceptualizations, a sample of similar exemplars (Smith & Medin, 1981). This kind of thinking corresponds to Wilder and Simon's (1998) conceptualization of a categorical group. In categorical thinking, it is the perception of similarity among individuals that causes their aggregation to be perceived as a coherent category.

We suggest, then, that groups thought of dynamically and categorically are represented differently: the former as agentic objects, the latter as classes of objects. Perceivers treat dynamically construed groups as if they possess a "group mind" (MacDougall, 1920); such groups are represented as agents that have objectives and perform actions. Categorically construed groups, on the other hand, are represented much like nonsocial categories, as collections of objects with some property in common that causes them to be thought of collectively. We suggest that, in principle, any group could be construed either categorically or dynamically at a given time, even though many groups likely tend to evoke one construal or another.

The idea that the same group can be construed in alternative ways, and hence viewed as rather different entities with different properties, is an intriguing possibility that has not been adequately explored in previous research. In fact, we know of only one study reflecting such a conception. Sherman et al. (2002, Study 2) described a softball team to participants either as goal-oriented and motivated to win (task group) or as friends who enjoy playing ball together primarily for social reasons (intimacy group). Sherman et al. found that these different characterizations affected performance on a subsequent recognition task, such that memory errors were biased by the group definition that had been presented.

However, Sherman et al. (2002) study differed from the present research in some important respects. First, Sherman et al. described the softball team as either an intimacy group or a task group, both of which would be considered dynamic (rather than categorical) in the present framework. Second, the key manipulation in Sherman et al.'s study was the explicit, very different descriptions of the softball team in the two conditions of the study. The research reported here tested a much more general hypothesis about group construals. Specifically, we propose that people can adopt different *ways of thinking* about groups, through which groups are construed as either categorical or dynamic entities. Our hypothesis is that these construals can be induced independently of the group perception itself and that, once induced, they influence the characteristics of the group that perceivers attend to and the group properties that result in perceiving the group as a meaningful social entity.

OBJECTIVES AND HYPOTHESES

Our research addressed the question of whether entitativity has different bases in groups that are differently construed. We do not ask *whether* categorical or dynamic construals lead to greater entitativity, but rather *why and how* categorical and dynamic construals lead to perceptions of entitativity. That is, do the antecedents of entitativity differ depending on whether the group being considered is thought of categorically or dynamically?

We hypothesize that they do. For *dynamically construed groups*, perceptions of interaction, common goals, and organization will lead to increased entitativity. The entitativity of these groups will not necessarily be linked to perceptions

of homogeneity, as the group's bases are its functional capability and the interdependence of its members. In Brewer et al.'s (2004) terms, perceptions of these groups reflect an "agency" theory of entitativity. *Categorically construed groups*, on the other hand, attain their entitativity from the similarity perceived among their members. This similarity can derive from the perception of a common essence or could be reflected in common appearance or common traits. The critical requirement is that a commonality is perceived, and this commonality drives the perception of the group as an entity. In Brewer et al.'s (2004) terms, perceptions of these groups reflect an "essence" theory of entitativity.

We report two experiments addressing these questions. In Study 1, we manipulated participants' way of thinking about a target group (categorically or dynamically) and measured the effect of these construals on the salience and perceived importance of different group characteristics (similarity vs. interaction). In Study 2, we examined the relative impact of perceived similarity and interaction on the perceived entitativity of categorically and dynamically construed groups.

STUDY 1

The central focus of this paper is on a fundamental distinction between categorically and dynamically construed groups. Therefore, it was important to manipulate participants' ways of thinking about a target group, so that the group's characteristics could be kept constant and the effects of categorical and dynamic thinking could be directly compared.

To manipulate group construals, participants were induced to adopt the appropriate way of thinking. The construals were described using an analogy: that of a group of bees. "Bees" can be thought of as a category, a subset of "insects," but can also be thought of as a dynamic group, a hive of bees. Following this analogy, participants in the categorical condition were told to consider the group's properties in general as well as the characteristics of typical members of the group, whereas participants in the dynamic condition were told to consider the functional properties of the group and its members.

Although it is difficult to directly examine the way a given participant construes a group, one correlate of a particular construal should be an increase in the importance given to construal-relevant characteristics of the group. That is, participants in the categorical condition should allocate more importance to the group's overall inter-member similarity, whereas participants in the dynamic condition should allocate more importance to the group's collective action and interaction.

After being induced into one or the other construal, participants in Study 1 read about a social group and learned information about its properties. Participants then performed a task in which they listed three important things that they remembered about the group. This task examines the relative salience of similarity and interaction information under each construal. If our analysis is correct, similarity-relevant characteristics should be reported with relatively greater frequency under categorical construals, whereas interaction-relevant characteristics should be reported with relatively greater frequency under dynamic construals. Thus, we hypothesized that there would be an interaction between group construal and the type of characteristic reported.

Method

Participants

Sixty-seven female and 48 male students in an introductory psychology course participated in Study 1. They received partial course credit for their participation.

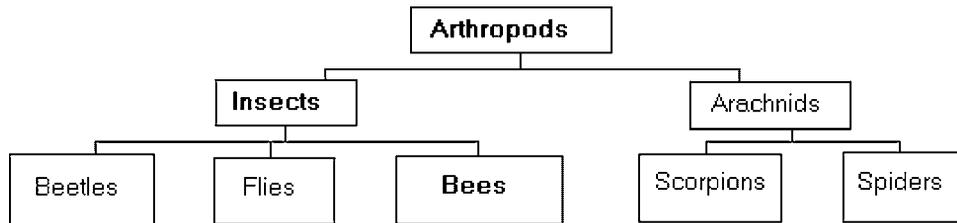
Design

The study had a 2 (group construal: categorical or dynamic) \times 2 (target group: social caste or political party) between-subjects factorial design. Participants were induced to construe groups as either categories or dynamic groups, and then learned about either a social caste in Bhutan or an American political party.

Materials

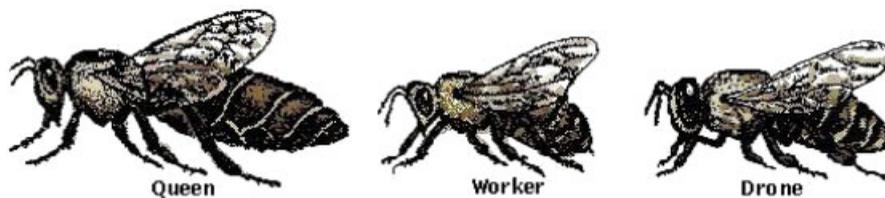
Manipulation of Group Construal Group construal was manipulated by leading participants to think about the groups in a particular way. This induction was achieved using an analogy of how one might think about bees.

All participants were first asked to imagine a set of bees flying around the ceiling lights of the room. At this point, the instructions for the different conditions diverged. Participants in *categorical* condition were instructed to think about the individual bees as members of the category “bees.” They were then provided with verbal and visual information to activate this construal. Specifically, they were told that, to think of the bees as members of a category, they would think about what “bees” in general are like (i.e., the characteristics of a “typical member”). They were shown the taxonomical chart to display “bees” as a category and further induce participants to construe the group categorically.



Immediately after the verbal and visual construal manipulation, participants were asked to think about the target group in exactly the same way.

Participants in the *dynamic* condition were instructed to think about the individual bees in terms of how they function together—that is, as members of a particular beehive. They were then provided with both visual and verbal information to activate the dynamic construal. Specifically, they were told that, to think of the bees as members of a beehive, they would think about the roles of individual bees and how these contribute to the whole. They were shown the diagram below to illustrate the different roles and induce participants to construe the group dynamically.



Participants were then asked to think about the target group in exactly the same way.

This manipulation of group construal is not tied to the descriptions of the target groups, so that the groups’ properties could be held constant and the effect of construing the same group in different ways could be examined.

Target Groups Two replications of target group were included in the study. The first target group was a social caste (the “Va’od”), described as a minority group in Bhutan. The second target group was an American political party (the “Natural Freedom Party”). It was described as fairly small, with a relatively long history. These groups were chosen because they could readily be construed either categorically or dynamically. (Although our theoretical perspective is that virtually any group could in principle be construed in either way, as a practical matter many real-world groups probably have “default construals” that may not be easily experimentally malleable.) We made sure to include information about each group (e.g., about representation in the national government) that could make either construal reasonable. For generality, two groups were created: an unusual and novel group about which participants had few pre-existing expectations (the caste), and relatively familiar kind of group about which participants had some existing schemas (the political party); in each case we did not want to use groups that existed in the real world. By creating groups and by using the same groups in both the categorical and dynamic construal conditions, it was possible to control for group size, group type, and idiosyncratic properties related to the group’s name and other contextual factors.

Descriptions of Group Properties A series of paragraphs describing various properties of each group was presented. The descriptions contained two sections, one related to the group's *similarity*, the other related to the group's *interaction*. Each section contained information about three characteristics that reflect different dimensions of similarity or interaction. The characteristics were largely derived from previous research, particularly the recent work of Brewer et al. (2004).

The similarity characteristics included physical appearance (in the caste, facial structure, skin tone, and style of dress; in the political party, Dutch descent, skin tone, and height), a personality trait (both groups: a reputation for being systematic and logical), and religion (caste: a belief in nature spirits; party: a belief in "Reasoned Agnosticism"). The Brewer et al. (2004) classification considers these characteristics indicators of common attributes and common history, which are important elements of an "essence" theory of entitativity. The target group was described as similar or dissimilar on all three characteristics.

The interaction characteristics included information about the group members' geographic proximity (caste: living in a particular district of the capital city; party: living in a particular section of St. Louis, Missouri), quality of interaction (caste: a requirement to aid another member of the caste who asks for help; party: monthly local meetings), and a set of common values (both groups: belief in the importance of charity). Brewer et al. (2004) classification considers these characteristics indicators of common fate and common purpose, which are important elements in an "agency" theory of entitativity. Again, the group was described as possessing or not possessing all three characteristics.

Procedure

Participants entered the laboratory complex and were seated in individual computer-equipped cubicles. Once seated, participants were told that the study was a preliminary experiment designed to assess how the groups we were studying (in ostensible future studies) were perceived, and that they would read and answer questions about a group. Participants then read an overview of the experiment and a set of general instructions, which were displayed on each computer screen.

Participants were asked to adopt a particular way of thinking by reading one of the two descriptions of bees, which served as the manipulation of group construal. Participants were then introduced to the target group description, in which they read descriptions of the social caste and the political party. Participants in the categorical construal condition were told to think about the target group as a category, analogous to the species "bees," whereas participants in the dynamic construal condition were told to think about the group as a functional unit, analogous to a hive of bees.

Next, participants read general information about the target group (either the social caste or the political party), followed by descriptions of the group's properties. In these descriptions, the sections providing information about the group members' similarity and interaction were presented in counterbalanced order.

Participants then completed the dependent measure task, in which they reported the three most important things about the target group.

Dependent Measures

To assess the effect of the construal manipulation on participants' orientation toward different elements of the group descriptions, participants completed a free-response task. In this task, participants were asked to report the three most important things about the group, using a sheet of paper with three blank spaces. This task indirectly assesses the perceived importance of the various components of the group descriptions. If the categorical construal indeed focuses perceivers on information about the group members' similarity, then participants in the categorical construal condition should report similarity-relevant characteristics with greater frequency than participants in the dynamic construal condition. In contrast, if the dynamic construal orients perceivers toward information about the group members' action and interaction, then participants in the dynamic construal condition should report characteristics relevant to these properties with greater frequency than participants in the categorical construal condition.

Results and Discussion

Each set of responses was coded by a rater who was blind to the construal condition under which the responses had been generated. As participants had seen the information just before reporting it, responses were often verbatim reports of the

characteristics in the group descriptions. Reported characteristics were classified as similarity or interaction characteristics if they matched (using a stringent gist criterion) one of the characteristics in the group descriptions. Reported characteristics that did not contain actual words or obvious synonyms for the characteristics contained in group descriptions were coded as “general information,” and were considered neither similarity nor interaction characteristic in analyses. The coded characteristics were then summed, yielding two scores for each participant: the total number of similarity characteristics reported and the total number of interaction characteristics reported.

The summed scores were then analyzed in a 2 (target group) \times 2 (group construal) \times 2 (type of information) analysis of variance. As the effect of target group did not interact with the type of information listed ($F(1,111) = .102, p = .750$) or group construal ($F(1,111) = 2.642, p = .107$), nor was there a significant three-way interaction ($F(1,111) < .001, p = .986$); further analyses will consider the combined data from both target groups.

To test the effect of group construal on the type of information recalled, a 2 (group construal) \times 2 (type of information recalled) analysis of variance, with repeated measures on the second factor, was conducted. As expected, neither the main effect of construal ($F(1,113) = 0.182, p = .671$) nor the main effect of type of information ($F(1,113) = 0.026, p = .872$) was significant. Importantly, though, the predicted interaction was significant ($F(1,113) = 4.337, p = .04$, partial $\eta^2 = .04$), as shown in Table 1. Our specific hypotheses were tested by planned comparisons comparing cell means. As predicted, similarity characteristics were reported more frequently by participants in the categorical construal condition than participants in the dynamic construal condition ($t(113) = 1.876, p = .06$, Cohen's $d = .35$). Interaction characteristics were not reported significantly more frequently by participants in the dynamic construal condition than by participants in the categorical construal condition ($t(113) = 1.447, p = .15$, Cohen's $d = .27$), although there was a trend in the predicted direction.

Although not all pairwise differences between construal conditions were statistically significant, the significant interaction establishes that group construal affected perceptions of the characteristics on which entitativity is based. Study 1 showed, then, that the manipulation of group construal impacted the information that is important to participants when they learn about a target group.

STUDY 2

Study 2 was designed to directly address the central question of the paper: do categorically construed groups and dynamically construed groups attain their entitativity from different sources? That is, does the information that leads a set of social objects to be perceived as a social entity depend on whether perceivers are thinking about a group categorically or dynamically?

To test this idea, the construals of several groups were manipulated. Participants rated the target groups' entitativity, interaction, and inter-member similarity. In this way, it was possible to examine the relations between entitativity and the groups' other properties, contrasting the pattern of relations perceived in categorically construed groups with that

Table 1. Number of characteristics reported by construal condition

	Similarity characteristics	Interaction characteristics	Total
Construal			
Categorical			
<i>M</i>	1.38	1.14	2.52
SD	0.91	0.75	1.04
<i>n</i>	56	56	56
Dynamic			
<i>M</i>	1.08	1.36	2.44
SD	0.77	0.80	0.90
<i>n</i>	59	59	59

perceived in dynamically construed groups. In addition, a control condition was included in which no construal instructions were given. We had no specific predictions about the relations between entitativity and other properties in this condition, as they reflect the default importance of each property as a predictor of entitativity for each target group. We hypothesized that under categorical construals, similarity would predict entitativity but that interaction would not. We expected the opposite pattern under dynamic construals: that interaction would predict entitativity but that similarity would not. Note that we did not predict that ratings of interaction, similarity, and entitativity would change in response to the manipulated construal, as the target groups' properties were held constant, but rather the *relations* among these properties; we predicted that construals would impact the relative importance of similarity and interaction in the perception of entitativity.

Method

Participants

A total of 148 people participated in Study 2. Of these, 64 (26 male and 38 female) participants were enrolled in an introductory psychology course and were compensated with partial course credit. Additionally, 84 participants were obtained using an Internet-based data collection procedure; these participants volunteered for the experiment and were not compensated.

Because the Internet participants were recruited from a number of different sources, their demographic characteristics differed notably from those of the subject pool. These participants consisted of 41 males and 40 females (as well as three subjects who declined to state their gender), and ranged in age from 18 to 72 (mean age 31.2). Due to the inherent anonymity of the Internet, other identifying information is unavailable for these participants; however, their unique IP addresses strongly suggest that none participated more than once.

Design

Study 2 had a 3 (group construal: categorical, dynamic, or control) \times 3 (target group: social caste, political party, and high school group) mixed factorial design. Group construal was manipulated in the same way as Study 1 (i.e., by presenting alternate descriptions of bees). Again, each participant was given only one set of construal instructions. Each participant rated three different groups: the Bhutanese social caste, the American political party, and a group of students in Missouri, presented in counterbalanced order.

Materials

Participants viewed descriptions of three different groups. They included the groups used in Study 1 (a social caste and a political party), as well as a third group, a group of students from a particular neighborhood who attend a large regional high school. This group was included to provide additional generality, as it is significantly smaller than the other groups and is likely more familiar to participants. Moreover, groups of high school students are perceived to interact more frequently than members of social castes and political parties (Lickel et al., 2000), so this group, as a default, is perhaps more likely to be construed dynamically.

The group descriptions were presented on a computer screen, and participants used the space bar (laboratory participants) or mouse button (Internet participants) to control the pace at which the information was displayed. In the laboratory version of the experiment, stimuli were presented and data collected using Empirisoft's MediaLab v2002 and DirectRT v2002; in the Internet version of the experiment, stimuli were presented and data collected using S-Ware's WWW Survey Assistant. With the exception of minor formatting changes made necessary by differences between the two software packages, the laboratory and Internet versions of the stimuli were the same.

Procedure

Participants were welcomed, told that they would be participating in an experiment on group perception, and seated in individual cubicles. The group construal manipulation was identical to that used in Study 1, with one exception: a control condition in which participants read only general instructions was included. After reading the construal manipulation, participants were told that the experiment would consist of learning about and rating several social groups, and were reminded that they were to think about the groups as categories or as dynamic groups. Again, participants in the control group learned only that they would be learning about and rating social groups, and were not instructed to construe the groups in any particular way.

Participants then read a description of one of the three target groups, after which they rated the group on the set of dependent measures previously described. Ratings were made in randomized order, with the proviso that the three pictorial items were administered last (but in randomized order within those three items). Participants used the mouse and keyboard to make their ratings.

Once participants had finished rating the first group, they were reminded of the group construal instructions and were presented with a second group. They learned about this group and then rated it on the same set of items. After this, they were again reminded of the construal instructions and learned about and rated a third group. The order in which participants rated the three groups (social caste, political party, and high school group) was counterbalanced. When participants had finished rating all three groups, they were probed for suspicion, debriefed, thanked, and dismissed.

Internet participants underwent an identical procedure, with three differences: they participated using computers in their homes or offices, they were debriefed using an online statement, and they completed a questionnaire at the end of the experiment that collected their email address and demographic information, and gave them an opportunity to comment on the study.

Dependent Measures

The dependent variables, which were designed for this study, comprised four items measuring entitativity, three items measuring perceived similarity, and four items measuring perceived action and interaction. Among the items were three “pictorial” items, which were introduced as an alternative way to measure perceptions of each property. Verbal items (see Appendix A) used nine-point scales anchored at 1 and 9 and pictorial items (see Appendix B) used five-point scales anchored at 1 and 5.

To validate these measures, a pilot study was first conducted in which 103 participants read descriptions of either the social caste or the political party and rated the groups. A principal components analysis with varimax rotation was conducted (on the combined data from both target groups, as analyses performed separately on each target group yielded comparable results) to explore the latent variable structure of the items. Ideally, the similarity items and the action/interaction items would load on separate factors, and the entitativity items (which, across groups, would be predicted by both types of items) would load moderately on both factors. Using a criterion of including factors with eigenvalues greater than 1.00, this analysis yielded a two-factor solution, the results of which are presented in Table 2; a factor loading of .3 was used as the minimum for considering an item to load meaningfully on a factor. As predicted, all three similarity items (diversity, shared characteristics, and the “shapes” pictorial item) loaded together on one factor, and all four interaction items (interaction, common goals, agency, and the “trap” pictorial item) loaded together on a different factor. Three of the items measuring entitativity (one thing, whole, unit) loaded on both factors;¹ that these items loaded on both factors is consistent with predictions, as both similarity and interaction are predicted antecedent properties of entitativity.

A reliability analysis was conducted to ensure that the measures assessing perceived similarity, perceived action, and perceived entitativity each comprised reliable indices. Analyses were computed based on the combined data set from both target groups. For the perceived similarity subset, Cronbach’s standardized item α was .787; for the perceived interaction subset, .723; and for the perceived entitativity subset, .749. All of these values were of adequate magnitude. In addition, correlation coefficients were calculated among the three scales. As would be expected, both perceived similarity ($r = .570$) and perceived interaction ($r = .642$) correlated strongly with entitativity, whereas perceived similarity and interaction were

¹Unexpectedly, the “circles” pictorial item loaded only on the second factor.

Table 2. Rotated factor loadings of dependent measures

Item	Factor 1 loading	Factor 2 loading
Diversity	.819	
Shared characteristics	.816	
Shapes (pic)	.757	
Whole	.660	.428
One thing	.624	.469
Unit	.507	.369
Trap (pic)		.764
Interaction		.744
Circles (pic)		.732
Common goals		.681
Agency		.596

Note: Factor loadings of less than .3 not shown.

only modestly correlated ($r = .257$) with one another. In sum, the results of the pilot study established that the dependent measures conformed to the theoretical properties required for testing our experimental hypotheses.

Results and Discussion

Participant Source Analysis

Because the laboratory and Internet participants differed demographically and also participated in the experiment in different settings, the data sets from these two sources of participants were compared. A 2 (participant source) \times 3 (target group) \times 11 (item) mixed analysis of variance was conducted. Importantly, participant source did not interact significantly with target group ($F(2, 286) = 1.691, p = .186$) or item type ($F(10, 1430) = .763, p = .665$). Thus, this variable was not examined further.

Analytic Strategy—Primary Hypotheses

The primary objective of Study 2 was to determine if the entitativity of categories and the entitativity of dynamic groups have different antecedents. Using multiple regression, it was possible to assess the extent to which entitativity was predicted by perceived similarity and interaction, and to compare this pattern of associations between categorical and dynamic groups. The magnitudes of these associations² were the primary-dependent variables.

Regression Analyses

To address the central question of this study, a series of multiple regression analyses were conducted using the entitativity (mean Cronbach's $\alpha = .675$), similarity (mean $\alpha = .712$), and interaction (mean $\alpha = .613$) composites. In these analyses, entitativity was the dependent variable, and similarity and interaction were entered into the same model as predictors. The resulting coefficients reflected the predictive power of each antecedent property. This analysis was performed on the combined composite scores from all three groups, generating a set of standardized partial regression coefficients that reflect the impact of group construal on the perceptions of target groups as a whole (displayed in Table 3).

The coefficients for similarity and interaction were compared within each construal condition, comparing the relative strength of each property as a predictor of entitativity. If the manipulation of group construal affected the relations between

²We propose that construals impact the *relative importance in the perception of entitativity*, not the magnitude, of perceived similarity and interaction. For example, although perceivers using a categorical construal might pay more attention to similarity characteristics or consider them more carefully, we do not expect such perceivers to actually rate the group's members as more similar to one another. The target group, regardless of construal, is described as fairly similar and fairly interactive, and these properties should be observed by perceivers.

Table 3. Regression analyses predicting entitativity from perceived similarity and interaction (by group construal)

	β weights—all groups		
	Categorical construal	Dynamic construal	Control
Perceived similarity	.517**	.296*	.403**
Perceived interaction	.229	.468**	.451**

*Significant at $p < .05$.; **Significant at $p < .01$.

entitativity and its antecedent properties in the predicted way, the β weight of similarity should be *greater* than that of interaction in the categorical condition, but *less* than that of interaction in the dynamic condition.

A series of t -tests was conducted to statistically compare each pair of regression coefficients. In these tests, the numerator was the difference between the coefficients and the denominator was the standard error of that difference (computed as: $s_{b_1-b_2} = [s_{b_1}^2 + s_{b_2}^2 - 2(\text{cov}_{b_1b_2})]^{-2}$). The degrees of freedom for these tests were $[N - (p + 1)]$, where p is the number of predictors in the model; $p = 2$ for all regression equations in this analysis, and so $df = N - 3$.

The pattern of coefficients shown in Table 3 provides considerable support for our hypotheses. Given a categorical construal, perceived similarity was a stronger predictor of entitativity than perceived interaction ($t(47) = 2.741, p = .009$), a moderate to large effect ($r = .371$; Cohen, 1992). Given a dynamic construal, perceived interaction was a stronger predictor of entitativity than perceived similarity ($t(48) = 3.897, p < .001$), a large effect ($r = .490$). Also as predicted, the antecedent properties did not differ in their predictive power under the control construal ($t(45) = 1.387, p = .172$).

As noted, this analysis was conducted on the combined ratings of all three target groups. Importantly for this analysis, the target group and construal variables did not significantly interact ($F(4, 290) = 0.562, p = .690$). The same analysis was also conducted separately for each of the three target groups, generating three additional sets of standardized partial regression coefficients (displayed in Table 4). These analyses yielded similar results; with one exception (the dynamic construal of the political party), all differences between regression coefficients were in the expected directions, with the control condition's coefficients intermediate between those of the categorical and dynamic construals. Both predictors, then, responded to the construal manipulation in the hypothesized way.

Summary

The results of Study 2 showed that the entitativity of categorically construed groups is driven by the perceived similarity of their members, whereas the entitativity of dynamically construed groups is driven by the perceived action and interaction

Table 4. Regression analyses predicting entitativity from perceived similarity and interaction (by group construal)

	β weights—social caste		
	Categorical construal	Dynamic construal	Control
Perceived similarity	.541**	.087	.474**
Perceived interaction	.297*	.706**	.389**
	β weights—high school group		
	Categorical construal	Dynamic construal	Control
Perceived similarity	.421**	.208	.325*
Perceived interaction	.207	.575**	.446**
	β weights—political party		
	Categorical construal	Dynamic construal	Control
Perceived similarity	.652**	.441**	.553**
Perceived interaction	.083	.105	.401**

*Significant at $p < .05$.; **Significant at $p < .01$.

of their members. Moreover, our results showed that this finding generalizes fairly well across groups that differ greatly in size, group type, duration of existence, and familiarity to perceivers.

Study 2 presents evidence, then, that the same group construed in different ways depends on different antecedent properties for judging its existence as a meaningful social entity. These findings provide an empirical link between the theoretical foundations laid out by Wilder and Simon (1998) and the body of work on entitativity (e.g., McConnell, Sherman, & Hamilton, 1997; Welbourne 1999). They thereby refine and extend the findings of Ip et al. (2006), Lickel et al. (2000), and Spencer-Rodgers et al. (2007).

GENERAL DISCUSSION

Research on the perception of social groups is at the forefront of social psychology. Topics such as prejudice, social identity, and implicit categorization have received significant theoretical and empirical attention for decades. The process by which a collection of people is perceived as a meaningful social entity is a fundamental antecedent of all of these phenomena.

Our research identifies a critical variable that impacts this process. We have argued that there are two distinct ways of bonding a set of people into a meaningful whole: perceiving them as sharing properties that make them comprise a category, and perceiving them as an interconnected, interactive unit. Study 1 showed that these different ways of construing a group focus perceivers' attention on different group characteristics. Study 2 showed that these ways of construing a group affect the properties that underlie its entitativity. Categorical construals cause perceived similarity to drive entitativity; dynamic construals cause perceived interaction to drive entitativity. Moreover, this difference did not depend on manipulating the target group's properties; they occurred as a function of the "way of construing" that was induced before participants learned about the same target group.

One limitation of the current studies is their reliance on explicit instructions to manipulate group construal. Although participants did not express suspicion about the instructions or appear to have guessed the study's purpose, it will clearly be useful to develop less explicit construal manipulations, perhaps exploring strategies for implicitly inducing these ways of construing. Nonetheless, the current studies are the first to directly manipulate construals *independent of the target group's properties*. Our findings demonstrate that group construals change the properties on which entitativity is based.

Our research contributes empirical support to the theoretical arguments made by Brewer et al. (2004) and Wilder and Simon (1998), and complements the work of Hamilton, Sherman and their colleagues (Lickel et al., 2000; Spencer-Rodgers et al., 2007). Perhaps the most direct contribution of the current research is its empirical validation of the categorical/dynamic distinction made by Wilder and Simon (1998). Our findings provide additional evidence for the primary definitional principle that Wilder and Simon proposed: that categories and dynamic groups derive their entitativity from distinct perceptual sources. Although numerous theorists have discussed the distinction between categorical and dynamic groups, to our knowledge our studies provide the first direct experimental evidence for the impact of categorical versus dynamic *thinking* in group perception.

Previous research has relied upon manipulation of the target groups to demonstrate two routes to entitativity. Ip et al. (2006) manipulated groups' physical and behavioral similarity. They found that groups with physically similar members were entitative because they were perceived to have common traits and that groups with synchronous movement were entitative because they were perceived to have common goals. In the current studies, all perceivers viewed the same information about the target group's properties, which included both similarity and interaction information. Perceivers were led to emphasize one type of information more than the other, depending on the group construal that was induced. This, in turn, influenced the relative contributions of perceived similarity and interaction to perceiving the group's entitativity.

Spencer-Rodgers et al. (2007) used a different approach to conduct a conceptually similar manipulation. Like Ip et al. (2006), these researchers compared different groups to one another, and found two distinct routes to entitativity and stereotyping. Spencer-Rodgers et al. used familiar exemplars of real-world groups that were either social categories or task groups in the Lickel et al. (2000) typology. Because these groups have "default" construals that are categorical and dynamic, respectively, Spencer-Rodgers et al.'s findings for different types of groups map onto our findings for different construals. That is, social categories were most likely construed categorically; their entitativity was related to homogeneity and essence, paralleling our findings for categorically construed groups. Conversely, task groups were most likely construed dynamically; their entitativity was related to agency and role differentiation, paralleling our findings for dynamically construed groups.

Thus, Spencer-Rodgers et al.'s (2007) results, like those of Ip et al. (2006), show different antecedents of perceived entitativity for different types of groups, consistent with the central premise advanced in the current paper.

Although the studies by Ip et al. (2006) and by Spencer-Rodgers et al. (2007) show that groups with different properties are perceived differently, neither study manipulated nor measured different ways of construing groups. Thus, these studies only provide correlational evidence to address our central question: whether the antecedents of entitativity differ depending on whether the group being considered is *thought of* categorically or dynamically. In contrast to these previous approaches, then, the current studies held the target group constant and manipulated—and thereby emphasized—the perceiver's way of thinking about the group. Our research therefore provides a useful complement to previous work on group perception by showing that distinct paths to entitativity can be attained independently of the target group's properties.

A different question concerns what perceivers spontaneously do when they perceive a group under natural conditions, without being induced to construe a group one way or another. As we have shown, when induced to construe a group categorically, participants became attuned to similarity information, found similarity characteristics more important, and made judgments of entitativity closely linked to the amount of similarity they perceive (and the converse took place when participants are induced to construe a group dynamically). However, in the control condition of Study 2, *both* antecedent properties were strong predictors of entitativity. In this case, perceivers were free to construe the group either categorically or dynamically. Presumably they spontaneously used one or the other construal, based on whatever information was salient and relevant to the individual participant. This might be influenced by individual differences or the current intergroup context. In addition, the target group's properties (which were held constant in our experiment) might influence the construal used. This suggestion is supported by the findings of Ip et al. (2006), who found that perceiving coordinated movement led participants to associate entitativity with perceptions of common goals, and perceiving physical similarity led participants to associate entitativity with perceptions of common traits.

The current studies have shown that the *antecedents* of entitativity depend on whether a group is construed categorically or dynamically. In future work, it will be important to determine if the *consequences* of entitativity also vary depending on the group's construal. It is possible that the entitativity possessed by a category and the entitativity possessed by a dynamic group are qualitatively different things. Wilder and Simon (1998) suggested that different types of judgments would be more common about the members of the two kinds of groups. If categories and dynamic groups attain their entitativity for different reasons, it may also be the case that entitativity in categories and entitativity in dynamic groups have different consequences.

Because categories take their very existence from perceived similarity among members, many characteristics should generalize across members of a category (Crawford, Sherman, & Hamilton, 2002). A category is by definition perceived to be homogeneous on some feature or dimension, so it is likely that the members of entitative categories will be perceived to share a number of characteristics. Because they form the basis of a lasting cognitive structure, these characteristics are likely to be relatively static and enduring. Members of entitative categories, then, are likely to be perceived to share relatively static and long-lasting "essence" characteristics (Brewer et al., 2004), such as socio-economic qualities and cultural characteristics.

Conversely, the members of dynamic groups need not be homogeneous; they can consist of diverse individuals who interact or act collectively. Because the members of entitative dynamic groups are functionally linked, however, they are likely to share relational principles that facilitate interaction or collective action (Lickel, Rutchick, Hamilton, & Sherman, 2006). If a dynamic group is entitative, then, its members are likely to be believed to share agency characteristics relevant to this functionality such as behavioral tendencies and specific objectives. Examining these potential consequences of entitativity is an important direction for further research.

We have discussed construals as if they were mutually exclusive, that is, as if a perceiver solely adopts one or another way of thinking. Although this is our theoretical starting point, this exclusivity was not tested by the current studies, and it is possible that a construal could be categorical and dynamic simultaneously. Certainly, impressions formed of groups often incorporate both similarity and interaction information. Additionally, in real-world group perception, a perceiver could initially construe a group categorically and subsequently come to construe it dynamically. This might occur as the perceiver learns more individuating information about the group, for example, or sees the group's behavior change. Investigating this process would shed light on the cognitive aspects of group construals, an intriguing avenue of potential research. Clarifying the issue of construals' mutual exclusivity would be one goal of this work. In addition, issues such as whether construals primarily impact the encoding or retrieval of information could be examined.

To this point, we have confined our discussion to the perception of outgroups. A parallel analysis of ingroup perception could be fruitful, as ingroups are sensitive to motivational influences that might make construals particularly important. That is, a perceiver might be motivated (because of needs for affiliation or distinctiveness) to construe a group in one or the other manner.

In sum, our research has clarified the construct of entitativity by identifying two paths by which a group can be seen as a meaningful entity. Specifically, we have shown that the choice between these two paths can be initiated in the mind of the perceiver, evoked independently of the group's properties. Our findings thereby provide evidence to support a newly emerging perspective on entitativity and suggest new directions for the study of group perception.

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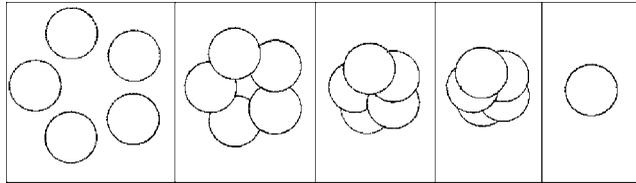
APPENDIX A: VERBAL-DEPENDENT MEASURES

Item name (subscale)	Item text	Scale Anchors
<i>One thing</i> (entitativity)	Some sets of people are very much a “group;” when thought of, looked at, or described they are treated as a single entity, as “one thing.” Other sets of people, on the other hand, are not much of a “group;” when thought of, looked at, or described they are treated as a number of individuals distinct from one another. With that in mind, you would describe the caste as . . .	Not at all one thing— very much one thing
<i>Whole/parts</i> (entitativity)	When we consider a set of people, we sometimes think about them “as a whole,” and consider the characteristics of the people in general. Other times, we think about the set of people as a number of individuals. If you were thinking about these people, would you think about them. . .	As a number of individuals—as a whole
<i>Unit/components</i> (entitativity)	When we think about certain things in the world, we sometimes think about the components that make them up. Other times, we think about the things as single units. With this distinction in mind, when you think about the caste, you think of. . .	Its components— a single unit
<i>Uniformity</i> (similarity)	Some groups of people contain members who are very diverse; the group is made of people who are very different from each other. Other groups are far less diverse; the members of the group are quite uniform. Would you consider the caste to be. . .	Very diverse— not at all diverse
<i>Shared characts.</i> (similarity)	One important element in describing a group is the extent to which the people in the group are similar to one another. Sometimes we would expect that the people share many characteristics, while in other cases, we might not expect that many characteristics would be shared. In your opinion, the members of the caste are. . .	Not very similar to each other—very similar to each other
<i>Interaction frequency</i> (interaction)	The members of some groups interact frequently with each other, while the members of other groups do not interact with each other particularly often. How frequently do members of the caste interact with other members of the caste?	Not at all frequently— very frequently
<i>Common goals</i> (interaction)	Another way of describing a group is the extent to which the members of the group have the same goals. The people in the caste you read about have. . .	No goals in common— many goals in common
<i>Agency</i> (interaction)	Some groups are very capable of producing particular outcomes, while other groups are much less able to have collective impact. With this distinction in mind, how capable do you think the caste is at taking collective action and working together to achieve an objective?	Not at all capable— very capable

APPENDIX B: PICTORIAL-DEPENDENT MEASURES

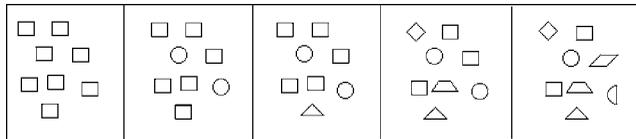
Entitativity:

Which of these best represents the group?



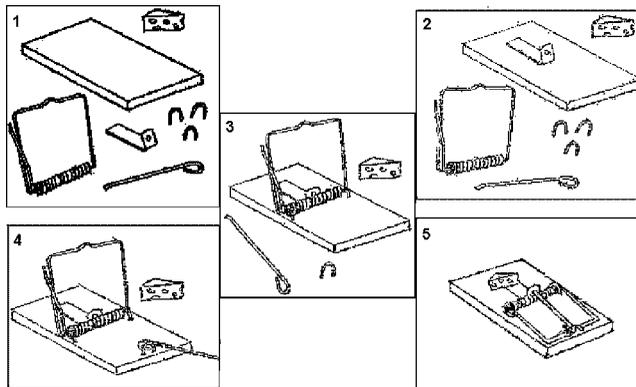
Similarity:

Which of these best represents the group?



Interaction:

Which of these best represents the group?



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