

Japanese and American Perceptions of Group Entitativity and Autonomy: A Multilevel Analysis

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Abstract

The authors examined cross-cultural differences in the relationships of essence and dynamic group properties to perceived group entitativity (i.e., perceived “groupiness”) and the influence of entitativity, essence properties, and dynamic properties on group autonomy beliefs. American and Japanese college students completed questionnaires that assessed perceptions of essence properties (e.g., similarities in group members’ physical and personality traits), dynamic properties (e.g., common goals and outcomes), entitativity, and autonomy for nine target groups. Multilevel analyses indicated that essence and dynamic properties predicted entitativity among both Americans and Japanese. However, between-person effects indicated that essence properties more strongly predicted entitativity in the United States than in Japan, whereas within-person effects indicated that dynamic properties more strongly predicted entitativity in Japan. Finally, dynamic properties and entitativity were independently associated with group autonomy and their effects were stronger when essence properties were high. However, as expected, these autonomy relationships were only evident in the United States.

Keywords

cultural psychology, group processes, perception

Perceived group entitativity refers to the extent to which a group is seen as being a coherent and unified entity (Campbell, 1958; Hamilton, Sherman, & Lickel, 1998; Kashima et al., 2005; Lickel, Hamilton, & Sherman, 2001; Lickel et al., 2000). Campbell (1958) identified a number of factors, for example, individuals’ proximity and similarity to each other, which affect the extent to which an aggregate of individuals is perceived as a group. Recent work, however, has focused on beliefs about the types of group properties that cause an aggregate of individuals to be perceived as entitative (e.g., Brewer, Hong, & Li, 2004; Denson, Lickel, Curtis, Stenstrom, & Ames, 2006;

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Kashima et al., 2005). An interesting implication of this work is that the properties that affect perceived group entitativity may vary across cultures (Brewer et al., 2004).

The purpose of the present study was to examine cultural differences in the extent to which two types of group properties, namely, essence and dynamic properties, predict perceived group entitativity. We also examined the relationship between perceived entitativity and beliefs about group autonomy, that is, perceptions of groups as actor-agents (Menon, Morris, Chiu, & Hong, 1999). We examined these relationships among people in the United States and Japan—two cultures that are often characterized as having rather different beliefs about groups and individuals (Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997; Triandis, 2001; Yuki, 2003).

Sources of Perceived Group Entitativity: Essence and Dynamic Group Properties

Extending previous work on entity and incremental implicit theories about individuals (Levy, Plaks, Hong, Chiu, & Dweck, 2001), Brewer et al. (2004) developed a conceptual framework focusing on two types of implicit theories about groups: essence theory or subjective essentialism (Brewer et al., 2004; Yzerbyt, Estrada, Corneille, Seron, & Demoulin, 2004) and dynamic theory (Brewer et al., 2004; Kashima et al., 2005). Essence theory refers to the tendency to attribute unchangeable characteristics or a core essence to groups (Brewer et al., 2004; Haslam, Rothschild, & Ernst, 2000; Kashima, 2004; Yzerbyt et al., 2004). People who perceive groups to have essence characteristics tend to perceive groups as more entitative. For example, groups whose members are more similar in physical appearance (Dasgupta, Banaji, & Abelson, 1999), background (Crawford, Sherman, & Hamilton, 2002; Yzerbyt, Roger, & Fiske, 1998), and personality traits (Crawford et al., 2002; Lickel et al., 2000) tend to be perceived as more entitative. Experimental work using artificial groups (Ip, Chiu, & Wan, 2006) has further shown that similarity in skin color (an essence property) results in greater perceived entitativity.

In contrast, some people tend to perceive groups as dynamic entities that are structured to attain shared goals (Brewer et al., 2004). These people focus on the commonalities in members' goals, motives, needs, and behavioral coordination. These characteristics are malleable and vary as a function of the group context. Such characteristics, which are referred to as dynamic properties, have been shown to predict entitativity independently of essence properties (Brewer et al., 2004; Lickel et al., 2000). Ip et al. (2006) further showed that when animated characters exhibited the same movements, participants inferred the existence of common goals and perceived the group as more cohesive, which resulted in greater perceived group entitativity.

A dynamic view of group entitativity is believed to facilitate the attribution of group-level responsibility because people who adopt a dynamic view are more likely to attribute needs, desires, and autonomy to groups (Brewer et al., 2004; Denson et al., 2006). In other words, dynamic theorists are believed to consider highly entitative groups as active agents that possess intentionality and autonomy (Brewer et al., 2004; Kashima et al., 2005). Although the relationship between dynamic properties and perceived agency is largely unknown, Denson et al. (2006) and Lickel, Schmader, and Hamilton (2003) found that perceived entitativity predicted attributions of stronger collective responsibility, whereas subjective essentialism did not.

Cultural Difference in Sources of Perceived Group Entitativity

Few studies have considered cultural differences in the sources of perceived group entitativity; they have found no differences between American and Polish students (Lickel et al., 2000) or between American and Chinese students (Brewer et al., 2004; Ip et al., 2006). Nevertheless,

a great deal of research indicates that Japanese people are less likely to rely on essence properties and more likely to rely on dynamic properties in judgments of individuals, leading us to expect that essence properties may be a weaker determinant, and dynamic properties a stronger determinant, of perceived group entitativity in Japan than in the United States.

Some work, for example, has shown that social norms and organizational systems better predict Japanese workers' commitment and turnover than do internal attributes (Abrams, Ando, & Hinkle, 1998; Besser, 1992). Researchers have also noted that expressions of individual dispositions are often restricted in Japan (Dien, 1999; Kashima, Siegal, & Tanaka, 1992; Miller, 2002) because of Japanese values and organizational systems that facilitate stronger feelings of responsibility to large collectives and emphasize intragroup harmony (Markus & Kitayama, 1991). Weaker associations between internal attributes and overt behaviors and smaller variation in the expression of personal traits in Japanese culture may create a social context in which essence properties (e.g., traits) are considered less useful predictors of outward behaviors.

Other work indicates that Japanese people are less likely to perceive the expression of individual dispositions as consistent and stable across situations (Kitayama et al., 1997; Markus & Kitayama, 1991; Triandis, 2001). Cousins (1989), for example, showed that Americans tended to endorse domain general attributes, whereas Japanese people changed their trait descriptions based on the context. The latter effect may reflect a Japanese tendency to analyze persons and groups more holistically (Kashima et al., 2005; Markus, Uchida, Omeregic, Townsend, & Kitayama, 2006). That is, Japanese people may be less likely to separate traits from the contexts in which they are expressed.

Although much less work has examined Japanese and American perceptions of groups, it thus far suggests that Japanese people are less likely to rely on essence properties and more likely to rely on dynamic properties at this level as well. According to Yuki (2003; Brewer & Yuki, 2007), Japanese people tend to view groups as cooperative units of interconnected individuals, whereas Americans tend to depersonalize group members and assign common traits. Group-level traits (i.e., essence properties) would thus seem to be more strongly related to perceived group entitativity among Americans than among Japanese. Consistent with this view, Yuki found that relational factors (e.g., knowledge of the relational structures within groups—a dynamic group property) predicted ingroup identification and loyalty among Japanese college students, whereas both relational and categorical factors (e.g., ingroup status) predicted ingroup identification and loyalty among American college students. Furthermore, ingroup homogeneity predicted ingroup identification and loyalty among Americans, but not among Japanese.

Our prediction regarding differences between Americans and Japanese may appear to conflict with research demonstrating that essence and dynamic properties predict entitativity equally well among Americans and Chinese (Brewer et al., 2004; Ip et al., 2006). Japan and China have both been described as collectivistic (Kashima et al., 2005; Oyserman, Coon, & Kimmelmeier, 2002). Collectivism, however, is a gross categorization that may mask important differences in contexts and psychological processes (Dien, 1999; Miller, 2002). The two countries certainly differ from each other historically, politically, economically, and socially (Chu, Spire, Fran, & Sueyoshi, 2005; Chung, Eichenseher, & Taniguchi, 2002; Dien, 1999).

Indeed, Chinese culture has been characterized as emphasizing the relationship between individuals and authority figures, whereas Japanese culture has been characterized as emphasizing the importance of group roles and intragroup harmony (Dien, 1999; cf., Chung et al., 2002). Thus, traits may be generally less, and dynamic properties more, salient or relevant in Japan. Consistent with this idea, Kashima et al. (2005) showed that Hong Kong Chinese judged individuals to be more consistent than families in their behavior across situations, whereas Japanese participants considered individuals and families to be equally consistent. Hong Kong Chinese participants

also perceived individuals as more consistent than did Japanese participants. To the extent that greater consistency reflects the presence of traits, this pattern of results suggests that essence properties may play a weaker role in Japanese judgments of groups.

Cultural differences in the relationship between group entitativity and group autonomy beliefs. In the United States, entitativity has been associated with the perception of group-level attributes, which may result in stronger attributions of group-level autonomy (Lickel et al., 2003). However, whether there are cultural differences in group autonomy beliefs is unclear. Menon et al. (1999) analyzed American and Japanese newspapers for the causes of relatively equivalent scandals in each country. They found that Japanese newspapers focused on the causal role of organizational systems, whereas American newspapers focused on the causal role of individuals. One implication is that Japanese people may believe more strongly in the autonomy of groups, whereas Americans may believe more strongly in the autonomy of individuals.

In contrast, Kashima et al. (2005) randomly assigned college students in Japan and the United States (among other countries) to complete measures of essentialism and agency with respect to individuals, families, friendship groups, or society. The results indicated that Japanese participants perceived individuals and groups to be less agentic than did Americans. In addition, Americans' perceptions of group agency increased as entitativity increased, whereas the Japanese showed no clear relationship between perceived agency and entitativity.

Differing results may be due to a variety of factors. Menon et al. (1999) indirectly inferred autonomy perceptions, whereas Kashima et al. (2005) directly assessed agency. Furthermore, Menon et al. focused on an event occurring in a particular organization, whereas Kashima et al. focused on the abstract qualities of social entities. Differing results might also arise, however, from a cultural difference in the concept of agency. The Japanese concept may be more holistic, including traits, contextual factors (Markus & Kitayama, 1991; Markus et al., 2006; Triandis, 2001), and the nature of the interpersonal connections among group members (Yuki, 2003). From this perspective, the results of Menon et al. and Kashima et al. seem more consistent than not because Menon et al. focused on the organizational processes and systems perceived to be responsible for a specific event. In any case, for both conceptual and methodological reasons (in the present work, we used a procedure that was more similar to Kashima et al.), we expected the relationship between group autonomy and entitativity to be weaker among Japanese participants.

The Present Investigation

American and Japanese college students completed questionnaires, rating nine target groups with respect to essence and dynamic group properties, entitativity, and autonomy. The nine target groups included three intimacy groups, three task groups, and three social categories (Lickel et al., 2000) to maximize variability in ratings across target groups.

Because every subject judged all nine target groups with respect to all four variables, individual ratings were nested within persons and nested within target groups, such that persons and target groups were crossed. We therefore conducted cross-random effects (i.e., treating persons and target groups as random effects) multilevel analyses, which allowed us to simultaneously model the processes by which participants judged the target groups at the within-person level (i.e., an individual's rating for a group relative to his or her ratings for the other groups) and at the between-person level (i.e., an individual's average rating across groups relative to other individuals). To our knowledge, this research represents the first such analysis of the relationships between group properties and perceived entitativity (see Hoffman & Rovine, 2007, for more information about the use of multilevel analyses in experimental psychology).

Our primary hypotheses were that (a) essence and dynamic properties would predict greater perceived group entitativity; (b) essence properties would be more strongly related to entitativity

among American than among Japanese participants, whereas dynamic properties would be more strongly related to entitativity among Japanese than among American participants; (c) autonomy beliefs would be generally weaker among Japanese (vs. American) participants; and (d) dynamic (but not essence) group properties and entitativity would predict group autonomy beliefs more strongly in the United States than in Japan. The multilevel analysis also allowed us to examine the extent to which these relationships were evident both within and between persons.

Method

Participants

Ninety-six American undergraduates (36 male, 60 female, M age = 23.65 years, SD = 7.24) from the University of Nebraska at Omaha and 99 Japanese undergraduates (29 male, 70 females, M age = 20.51 years, SD = .79) from Osaka University participated in this study. Among American participants, 85 were Caucasian, 4 were Latino, and 7 were from various other racial or ethnic groups. American participants were students in psychology classes who participated in exchange for extra credit. Japanese participants were recruited from psychology courses. However, following the regional custom, they were not compensated.

Procedure

American participants completed the questionnaire in groups of about 10 to 25. Japanese participants completed the questionnaire after class in a large classroom. Instructions were given in participants' native languages. A professional translator translated the English version of the questionnaire into Japanese. Two bilingual researchers back-translated the questionnaire into English to ensure that the two versions of the questionnaire had the same meaning for participants in the two countries. Discrepancies were resolved through discussion.

The questionnaire assessed perceptions of nine target groups or aggregates of people (see Table 1). The groups were selected from each of three clusters (intimacy groups, tasks groups, and social categories) that were identified by Lickel et al. (2000) and that have been a focus of subsequent research (e.g., Johnson et al., 2006). Following previous work, only group category names (e.g., family) were given to participants. Our goal was to observe the processes underlying perceptions of each group type. We therefore selected target groups that would maximize the variability of ratings; the target groups were not otherwise of interest.

All groups were presented in the same random order throughout the questionnaire. Order of entitativity, essence properties, dynamic properties, and group autonomy measures was randomized across participants. However, the sequence of items within each measure was the same across all participants. Each item was presented on a separate page of the questionnaire.

Essence properties. Three items measuring essence properties were developed from previous work (Brewer et al., 2004; Lickel et al., 2000; Yzerbyt et al., 1998). Participants indicated the extent to which group members had similar personality characteristics, were similar in physical appearance, and had similar backgrounds. Ratings were provided on 7-point scales (e.g., 1 = *very different in physical appearance* to 7 = *very similar in physical appearance*).

Dynamic properties. Four items assessed perceptions of dynamic properties. Participants rated the extent to which the members of each target group experienced the same outcomes, cooperated with each other to achieve goals, depended on each other to achieve goals, and shared the same goals. Participants provided ratings on 7-point scales (e.g., 1 = *no goals in common* to 7 = *important goals in common*).

Table 1. Mean Ratings of Essence Properties, Dynamic Properties, Entitativity, and Autonomy

Target Group	American				Japanese			
	Ess	Dyn	Entit	Auton	Ess	Dyn	Entit	Auton
Intimacy groups								
Family	5.06	5.43	5.96	5.43	4.66	5.41	5.72	4.76
Friends	4.17	4.69	5.19	5.06	4.48	4.22	4.49	4.48
Two people in a romantic relationship	4.38	5.82	5.41	5.15	4.39	5.21	4.74	4.57
Task groups								
Members of an orchestra	2.99	5.54	5.43	4.01	4.24	6.03	6.01	3.61
Company committee that designs new products	2.94	5.60	5.20	4.72	3.65	5.95	5.66	3.95
Airline flight crew	3.25	5.64	5.39	4.47	4.08	5.17	4.85	3.47
Social categories								
Women	2.16	2.90	3.84	4.43	2.78	2.76	3.23	4.09
Teachers	3.03	4.54	4.60	4.78	3.91	4.38	3.94	3.94
Doctors	3.15	4.66	4.44	4.99	4.39	4.72	4.27	3.75

Note. Ess = essence group properties; Dyn = dynamic group properties; Entit = perceived group entitativity; Auton = group autonomy beliefs.

Perceived group entitativity. Five items assessed perceived entitativity. Following Lickel et al. (2000), participants rated the overall “groupiness” of the groups. Two items were based on the work of Brewer et al. (2004). Participants indicated the extent to which each group should be thought of as a whole and the extent to which they perceived each group to be cohesive. Two additional items assessed the extent to which participants perceived each group to be organized and its members unified (Castano, Yzerbyt, Pladino, & Sacchi, 2002; Lickel et al., 2001). Responses were provided on 7-point scales (e.g., 1 = *not at all a group* to 7 = *very much a group*).

Group autonomy beliefs. Three items were adapted from Menon et al. (1999) to assess group—rather than individual-level autonomy. Items included “In my society, this group takes control of the situations around them and exercises free will”; “The norms in my society say that this group should take control of the situations around it and exercise free will”; and “This group sets a course for itself independent of the influences surrounding it.” Each item was answered on a 7-point scale (1 = *strongly agree* and 7 = *strongly disagree*).

Results

We computed standardized scores within target group and participant group for each of the 15 items assessing perceived group entitativity, essence properties, dynamic properties, and group autonomy beliefs. We then averaged across target groups for each of the 15 items and conducted a pancultural principal components analysis (van de Vijver & Leung, 1997; cf., Kashima et al., 2005). The largest eigenvalues obtained were 5.19, 1.91, 1.33, and 0.96. Two, three, and four factors were rotated using a varimax criterion. Four factors, accounting for 63% of the variance, were retained as their factor pattern was most interpretable and largely consistent with the expected distinctions. Factor loadings ranged from .62 to .81 for dynamic properties (Factor 1), .59 to .77 for essence properties (Factor 2), .75 to .85 for autonomy (Factor 3), and .40 to .79 for entitativity (Factor 4). An analysis of the unstandardized scores yielded similar conclusions as did the separate analyses for each target group. We therefore averaged across unstandardized item scores within each a priori measure for each target group.

Cronbach’s alphas for the measures were computed separately for each target group within each of the two participant cultural groups—a total of 72 alphas ($M \alpha = .68$). Entitativity scores

were about equally reliable in the United States and Japan ($M\alpha s = .72$ and $.76$, respectively). However, essence and dynamic property scores were more reliable in Japan ($M\alpha s = .66$ and $.72$) than in the United States ($M\alpha s = .56$ and $.62$) and ratings of group autonomy beliefs were more reliable in the United States ($M\alpha = .75$) than in Japan ($M\alpha = .62$). We cannot be sure why reliabilities for essence and dynamic properties were lower in the United States; perhaps greater error was a result of the number of items and abstract nature of the questionnaire. In any case, it is the relations of the variables to theoretically related constructs that matter most (Rosenthal & Rosnow, 2008), and as we show, both types of properties predicted entitativity in the United States, which is consistent with previous work (Brewer et al., 2004; Lickel et al., 2000).

Mean Differences in Judgments of Target Groups

Mean ratings of essence and dynamic properties, entitativity, and autonomy are reported in Table 1. We analyzed each measure separately, collapsing across the three target groups within each group type, as a function of group type (intimacy groups vs. task groups vs. social categories, within participants) and culture (between participants). As the means indicate, Japanese participants' judgments of *essence* properties were higher than those of American participants, $F(1, 192) = 28.84$, $\eta^2 = .13$, $p < .001$, and intimacy groups were perceived to be highest in essence properties followed by task groups and social categories, $F(2, 384) = 199.17$, $\eta^2 = .51$, $p < .001$. The interaction indicated that the group type difference was greater for Americans, $F(2, 384) = 29.86$, $\eta^2 = .13$, $p < .001$. In contrast, task groups were judged to be highest in *dynamic* properties followed by intimacy groups and social categories, $F(2, 384) = 327.55$, $\eta^2 = .63$, $p < .001$. The tendency to judge task groups as higher than intimacy groups was greater among Japanese, $F(2, 384) = 7.14$, $\eta^2 = .04$, $p < .001$.

The analysis of entitativity judgments indicated that Americans judged the groups to be more entitative than did Japanese participants, $F(1, 192) = 11.43$, $\eta^2 = .06$, $p < .001$, and task groups and intimacy groups were perceived to be more entitative than were social categories, $F(2, 384) = 212.04$, $\eta^2 = .52$, $p < .001$. However, an interaction indicated that the group type effect was more true of Japanese participants, $F(2, 384) = 14.78$, $\eta^2 = .07$, $p < .001$.

Finally, as expected, American participants had stronger group autonomy beliefs than did Japanese participants, $F(1, 191) = 28.77$, $\eta^2 = .13$, $p < .001$. The analysis further indicated only that intimacy groups were judged as most autonomous followed by social categories and task groups, $F(2, 382) = 75.43$, $\eta^2 = .28$, $p < .001$.

Relationships Among Measures of Group Properties and Group Perceptions

Multivariate multilevel models as estimated via maximum likelihood in SAS PROC MIXED v. 9.2 were used to examine the relationships among essence and dynamic group properties, perceived group entitativity, and group autonomy beliefs. Specifically, we examined these relationships at the between-person level of analysis, as represented by correlations among the random intercepts across measures between persons, as well as at the within-person level of analysis, as represented by the correlations among the residuals across measures within persons. Table 2 provides these correlations separately for each culture.

Intraclass correlations expressing the proportion of variation that was between persons were .24 for essence properties, .06 for dynamic properties, .11 for entitativity, and .37 for group autonomy beliefs, indicating that most of the variation in each measure was within-persons (across the nine target groups). As shown in Table 2, most between-person correlations were significant. Thus, averaging across the nine target groups, persons who provided higher essence and dynamic ratings also tended to provide higher entitativity and autonomy ratings. Of greater interest, however,

Table 2. Between-Person and Within-Person Correlations Among Essence and Dynamic Properties, Entitativity, and Group Autonomy Beliefs for American and Japanese Participants

Culture	Measure	Essence	Dynamic	Entitativity	Autonomy
Between person					
American	Essence	1.00			
	Dynamic	0.50*	1.00		
	Entitativity	0.41*	0.90*	1.00	
	Autonomy	0.27*	0.70*	0.41*	1.00
Japanese	Essence	1.00			
	Dynamic	0.73*	1.00		
	Entitativity	0.45	0.45	1.00	
	Autonomy	0.16	0.56*	0.68*	1.00
Within person					
American	Essence	1.00			
	Dynamic	0.40*	1.00		
	Entitativity	0.45*	0.63*	1.00	
	Autonomy	0.30*	0.20*	0.23*	1.00
Japanese	Essence	1.00			
	Dynamic	0.45*	1.00		
	Entitativity	0.45*	0.73*	1.00	
	Autonomy	0.14*	0.04	0.06	1.00

* $p < .05$.

are the within-person correlations, which control for each person's average rating to examine within-person covariation across the nine target groups. Here, we also see positive within-person correlations, indicating that relative to one's average rating, groups that were rated higher in essence and dynamics were also rated higher in entitativity and autonomy (although some within-person correlations were smaller for the Japanese sample).

Predicting Entitativity From Group Properties

Next, we estimated crossed random effects multilevel models to examine the prediction of group entitativity from essence and dynamic properties. Maximum likelihood was used to estimate parameters and compare nested models; all possible covariances were estimated among intercepts and slopes across persons; and denominator degrees of freedom were estimated using the Satterthwaite method. Again, each person rated every target group so that persons and target groups are crossed. Furthermore, because the crossed random effects models invoked here allow both persons and target groups to be treated as random effects, the effects of predictors pertaining to persons (e.g., American vs. Japanese culture) as well as those pertaining to the person by target group interaction (e.g., person-specific and target group-specific essence and dynamic ratings) can be examined as accurately as possible. A model with only a main effect of culture and no random effects (i.e., assuming independent ratings across persons and rated groups) was first estimated to provide a basis for comparison. Model fit was significantly improved by adding a random intercept for persons, $-2LL \Delta(1) = 46, p < .0001$, as well as a random intercept for rated groups, $-2LL \Delta(1) = 628, p < .0001$, suggesting that each needed to be treated as a random effect.

Sequential models were thus estimated to examine the relationships of essence and dynamic properties to perceived group entitativity. Both predictors were centered at the midpoint of the rating scale to facilitate interpretation of model parameters. Because essence and dynamic predictors contained both between- and within-person variation, effects on entitativity at both levels

Table 3. Results of Essence and Dynamic Properties Predicting Group Entitativity Between-Persons (BP) and Within-Persons (WVP) in American and Japanese Participants

Model Parameter	American		Japanese		Difference	
	Est	SE	Est	SE	Est	SE
Intercept	4.51	0.18	4.20	0.14	-0.31	0.18
Effect of Within-Person Essence	0.21	0.03	0.21	0.03	0.00	0.04
Effect of Between-Person Essence	0.37	0.11	0.05	0.10	-0.32	0.15
Effect of Within-Person Dynamic	0.40	0.04	0.53	0.03	0.13	0.05
Effect of Between-Person Dynamic	0.58	0.13	0.56	0.09	-0.02	0.16
Effect of Within-Person Essence by Within-Person Dynamic	-0.02	0.02	-0.03	0.02	-0.01	0.03
Effect of Between-Person Essence by Between-Person Dynamic	-0.24	0.09	0.04	0.08	0.29	0.12
Residual Variance	0.63	0.03				
Group Intercept Variance	0.09	0.04				
Person Intercept Variance	0.11	0.02				
Essence Slope Variance	0.02	0.01				
Dynamic Slope Variance	0.03	0.01				
Intercept-Essence Covariance	0.00	0.01				
Intercept-Dynamic Covariance	0.01	0.01				
Essence-Dynamic Covariance	-0.01	0.01				

Note. Est = parameter estimate; SE = standard error. Values in bold are significant. Variance components are for both groups combined.

were included. Between-person variation was represented by the person mean of the predictor over the nine target groups (and these person means were also centered at 4). Within-person variation was represented as the deviation of the predictor value from the person's mean. Thus, the effect of the person mean predictor captures average tendencies relative to other people, and the effect of the within-person deviation captures target group-specific tendencies relative to the other target group ratings the person provided (i.e., person-centered). Finally, the American sample was used as the reference group in the culture predictor.

In addition to significant positive between-person and within-person fixed effects, within-person essence properties had a significant random slope across persons, $-2LL \Delta(2) = 23, p < .0001$, indicating that the extent to which essence properties predicted greater entitativity within-persons varied significantly across persons. Likewise, dynamic properties had significant between-person and within-person positive fixed effects and a significant within-person random slope across persons, $-2LL \Delta(3) = 30, p < .0001$, indicating that the extent to which dynamic properties predicted greater entitativity within-persons also varied significantly across persons. Accordingly, the extent to which culture (American vs. Japanese) could explain between-person differences in the within-person effects of essence properties and dynamic properties was examined via interaction terms of each predictor with culture. Interactions among essence properties, dynamic properties, and culture were explored at each level of analysis (between-persons and within-persons), and interactions that were significant or needed to test the hypotheses of interest were retained. Variance components from the final model and the predictor effects for each culture as estimated from the final model are shown in Table 3. The effects of culture, essence properties, and dynamic group properties explained approximately 51% of the total variation in entitativity, as determined by the squared correlation between the model-predicted outcome (predicted by the fixed effects) and the original entitativity outcome.

We first describe results related to essence properties. Because essence properties were included in interaction terms with dynamic properties at each level, the between-person effect of essence properties was evaluated as conditional on person mean dynamic properties = 4 (i.e., when at the midpoint of the scale) and the within-person effect of essence was conditional on within-person dynamic properties = 0 (i.e., when at a person's own average). As hypothesized, within-person essence properties significantly predicted entitativity, such that higher essence ratings (relative to one's average rating) predicted greater perceived group entitativity. Although the within-person effect of essence did not differ by culture, the between-person effect of essence did. In the American sample, the between-person effect was significant and positive, such that persons who generally provided higher essence ratings also provided higher entitativity ratings, but this effect was not significant in the Japanese sample. Thus, our hypothesis of moderation of the essence effect by culture was supported between-persons but not within-persons.

Next, we present results related to dynamic properties. Because of the interaction effects with essence at each level, the between-person effect of dynamic properties is similarly evaluated as conditional on person mean essence properties = 4 and the within-person effect of dynamic properties is conditional on within-person essence properties = 0. As hypothesized, within-person dynamic properties significantly predicted entitativity, such that higher dynamic ratings (relative to one's average rating) were related to greater perceived group entitativity. Also as hypothesized, the within-person effect of dynamic properties was positive and significant in both cultures, and it was significantly larger for the Japanese sample. However, contrary to our hypothesis, the between-person effect of dynamic properties was equivalent in both cultures, such that persons who generally provided higher dynamic ratings also judged the target groups as more entitative, regardless of culture. Thus, our hypothesis of moderation of the dynamic properties effect by culture was also partially supported in that the Japanese sample showed a stronger effect of dynamic properties within-persons (but not between-persons).

Finally, we present results for the interactions of group essence with group dynamic with culture at each level. The interaction of the within-person effects of essence and dynamics was not significant, nor was the three-way interaction of culture by within-person essence and dynamic significant. Thus, the within-person effect of essence does not depend on within-person dynamic and vice versa, to the same extent for both cultures. The interaction of the between-person effects of essence and dynamic was significant, however, and the three-way interaction with culture was significant as well. In the American sample, stronger dynamic properties on average significantly weakened the effect on entitativity of stronger essence properties on average (and vice versa); this moderation of between-person essence properties by dynamic properties was not found in the Japanese sample.

Predicting Group Autonomy Beliefs From Entitativity

An additional set of crossed random effects analyses examined the prediction of group autonomy beliefs from essence properties, dynamic properties, and perceived group entitativity. The fit of a model with only a main effect of culture and no random effects (i.e., assuming independent ratings across persons and rated groups) was significantly improved by adding a random intercept for persons, $-2LL \Delta(1) = 364, p < .0001$, as well as a random intercept for rated groups, $-2LL \Delta(1) = 201, p < .0001$, suggesting that each again needed to be treated as a random effect. Between-person and within-person effects of essence, dynamic, and entitativity and their moderation by culture were thus examined as described previously.

In addition to significant positive between-person and within-person fixed effects, within-person essence properties again had a significant random slope across persons, $-2LL \Delta(2) = 24, p < .0001$, indicating that the extent to which essence properties and group autonomy beliefs

were related within-persons varied significantly across persons. Likewise, dynamic properties had significant between-person and within-person positive fixed effects and a significant within-person random slope across persons, $-2LL \Delta(3) = 78, p < .0001$; the extent to which dynamic properties and group autonomy beliefs were related within-persons also varied significantly across persons. Finally, entitativity had significant between-person and within-person positive fixed effects and a significant within-person random slope across persons, $-2LL \Delta(4) = 18, p < .0001$; the extent to which entitativity and autonomy were related within-persons also varied significantly across persons. However, the fixed effects of essence properties became nonsignificant upon including entitativity, indicating that perceived group entitativity mediated the effect of essence properties on group autonomy beliefs. The random slope variance for within-person essence properties also became nonsignificant and was thus removed.

Accordingly, the extent to which culture moderated each of these effects was examined via interaction terms of each predictor with culture. Interactions among essence properties, dynamic properties, entitativity, and culture were explored at both the between-persons and within-persons levels, and interactions that were significant or needed to test the hypotheses of interest were retained. Variance components from the final model and the predictor effects for each culture as estimated from the final model are shown in Table 4. The effects of culture, essence properties, dynamic properties, and entitativity explained approximately 18% of the total variation in autonomy, as determined by the squared correlation between the model-predicted outcome (predicted by the fixed effects) and the original autonomy outcome.

Because of the complexity of the model, the effects are explained first for the within-person level and then for the between-person level. Within-persons, there was a significant four-way interaction among essence, dynamic, entitativity, and culture, such that the three-way interaction was only found for the American sample. In the Japanese sample, the lower order main effects or two-way interactions were also nonsignificant, indicating that essence, dynamic, and entitativity did not have significant unique main effects or interactions within-persons. The pattern of the three-way interaction in the American sample can be understood as follows: For the American sample, within-person dynamic properties and entitativity had significant unique effects, such that higher ratings on each (relative to one's average ratings) were related to higher autonomy ratings. The two-way interaction between within-person dynamic properties and entitativity became more positive (stronger) with higher within-person essence ratings as well.

At the between-person level, there was a significant three-way interaction among essence properties, entitativity, and culture. In the Japanese sample, the main effects and two-way interaction of essence properties and entitativity were each nonsignificant. In the American sample, the positive effect of entitativity was stronger with greater essence ratings, such that the differences between persons in mean autonomy ratings as a function of mean entitativity ratings were larger in persons who also had higher mean essence ratings. Finally, there was also a marginal ($p = .058$) three-way interaction of dynamic, entitativity, and culture. In the Japanese sample, the main effects and two-way interaction of dynamic properties and entitativity were each nonsignificant. In the American sample, the positive main effects of dynamic properties and entitativity were reduced in the presence of high ratings of both (i.e., an underadditive interaction). Finally, the three-way interaction also can be seen as indicating a stronger between-person effect of dynamic properties in the American sample than in the Japanese sample, but this difference was smaller for persons who perceived the groups as more entitative.

Summary. Our hypotheses concerning group autonomy beliefs were broadly supported. Autonomy was largely unrelated to essence properties, dynamic properties, and entitativity in the Japanese sample, either within-persons or between-persons. In the American sample, controlling for dynamic properties and entitativity, essence properties had little direct impact on autonomy ratings, but essence properties appeared to enhance the positive effects of dynamic properties and entitativity

Table 4. Results of Essence Properties, Dynamic Properties, and Entitativity Predicting Group Autonomy Between-Persons (BP) and Within-Persons (WP)

Model Parameter	American		Japanese		Difference	
	Est	SE	Est	SE	Est	SE
Intercept	3.54	0.35	3.60	0.21	0.05	0.36
Effect of Within-Person Essence	-0.05	0.04	0.03	0.04	0.08	0.05
Effect of Between-Person Essence	-0.30	0.19	0.02	0.18	0.31	0.26
Effect of Within-Person Dynamic	0.12	0.05	0.07	0.05	-0.05	0.07
Effect of Between-Person Dynamic	1.03	0.27	0.32	0.20	-0.71	0.33
Effect of Within-Person Entitativity	0.10	0.05	0.08	0.04	-0.02	0.06
Effect of Between-Person Entitativity	0.84	0.29	0.30	0.25	-0.54	0.39
Effect of Within-Person Essence by Within-Person Dynamic	0.05	0.03	0.02	0.03	-0.03	0.04
Effect of Within-Person Essence by Within-Person Entitativity	0.00	0.04	0.03	0.03	0.03	0.05
Effect of Within-Person Dynamic by Within-Person Entitativity	-0.03	0.03	0.03	0.04	0.03	0.04
Effect of Within-Person Essence by Within-Person Dynamic by Within-Person Entitativity	0.07	0.02	0.01	0.01	-0.06	0.02
Effect of Between-Person Essence by Between-Person Entitativity	0.32	0.15	-0.23	0.22	-0.55	0.26
Effect of Between-Person Dynamic by Between-Person Entitativity	-0.52	0.17	0.01	0.23	0.54	0.28
Residual Variance	0.80	0.03				
Group Intercept Variance	0.15	0.07				
Person Intercept Variance	0.46	0.06				
Dynamic Slope Variance	0.07	0.02				
Entitativity Slope Variance	0.04	0.02				
Intercept-Dynamic Covariance	0.02	0.03				
Intercept-Entitativity Covariance	0.06	0.02				
Dynamic-Entitativity Covariance	-0.01	0.02				

Note. Est = parameter estimate; SE = standard error. Values in bold are significant. Variance components are for both groups combined.

within-persons and to enhance the positive effect of entitativity between-persons. Finally, in the American sample, although dynamic properties and entitativity had unique positive direct effects both within and between persons, higher levels of one seemed to be sufficient in predicting autonomy, given the underadditive interaction of the two observed between-persons (with a similar trend within-persons, although moderated by essence, as noted).

Discussion

The purpose of this study was to examine differences between Americans and Japanese in the relationships among essence and dynamic group properties, perceived group entitativity, and group autonomy beliefs. We asked American and Japanese college students to complete questionnaires assessing their perceptions of essence and dynamic properties, group entitativity, and group autonomy with respect to nine target groups that have been shown to vary in perceived entitativity in the United States (Lickel et al., 2000). These target groups have been previously classified (from most to least entitative) as intimacy groups, task groups, and social categories.

The analysis of mean differences yielded results that replicate the findings of Lickel et al. (2000) in that American participants judged intimacy groups as most entitative and social categories as least entitative. In contrast, Japanese participants judged task groups as more entitative than intimacy groups. Like our American participants, however, Japanese participants perceived social categories as least entitative. Whether the difference in judgments of intimacy and task groups reflects a cultural difference in the way participants think about entitativity or a cultural difference in the actual entitativity of the group types (or a combination of both) remains unclear. We know of no other research in which Japanese participants' perceptions of entitativity have been examined. It seems worth noting, however, that the results were relatively consistent for specific target groups within each group type.

Multilevel analyses further indicated that, as expected, essence and dynamic group properties were associated with greater perceived group entitativity in both the United States and Japan, which replicates previous research (e.g., Brewer et al., 2004; Ip et al., 2006; Lickel et al., 2000) and suggests that the relationships may generalize to Japanese people. The effect of essence properties among Japanese participants, however, was only evident at the within-person level.

We also obtained evidence for the expected cultural differences in the strength of the relationships of essence and dynamic group properties to perceived entitativity. Essence properties were more strongly associated with perceived group entitativity in the United States than in Japan (between persons), whereas dynamic group properties predicted perceived entitativity more strongly in Japan than in the United States (within persons). These findings are consistent with research examining social judgments of individuals (Markus & Kitayama, 1991). They are also consistent with Yuki's (2003; Brewer & Yuki, 2007) work showing that Americans' group representations are more prototype-based, whereas Japanese representations of groups are more dynamic, focusing on the relations among group members.

We cannot be sure why the cultural difference in the effect of essence properties was only evident between persons, whereas the cultural difference in the effect of dynamic properties was only evident within persons. To our knowledge, no one has conducted analyses in which within- and between-person effects were simultaneously examined. Within-person effects seem most compelling inasmuch as they assess the psychological processes that occur within individuals and, to the extent that they are moderated by culture, cultural differences in those psychological processes. Thus, we believe that the effect of dynamic properties is particularly compelling. The implications of between-person effects are less clear. Perhaps the between-persons effect of essence properties can be thought of as representing a more socially rather than psychologically meaningful effect—that is, to the extent that this particular pattern of effects replicates.

In any case, the present results differ from those for American and Chinese participants in other research (Brewer et al., 2004; Ip et al., 2006). We reasoned that group role behaviors are more visible in Japan, where social norms and organizational systems inhibit expressions of individual dispositions (Abrams et al., 1998; Besser, 1992) and emphasize intragroup harmony (Dien, 1999) and relations among group members (Brewer & Yuki, 2007; Yuki, 2003). Dynamic properties would thus be more useful, and essence properties less useful, predictors of entitativity. Of course, it remains for future research to compare directly Chinese and Japanese perceivers.

Finally, the present research indicated, as expected, that Americans hold stronger group autonomy beliefs than do Japanese (cf., Kashima et al., 2005) and that dynamic (and not essence) properties and group entitativity are more strongly related to group autonomy beliefs in the United States than in Japan. In fact, our analyses revealed no evidence that dynamic properties and entitativity predict autonomy among Japanese people. The positive relationship between entitativity and autonomy in the United States is consistent with work showing that Americans tend to make group-level causal attributions when entitativity is high (Denson et al., 2006; Lickel et al., 2003).

The lack of a relationship in our Japanese sample suggests a limitation to the notion that entitativity based on dynamic group properties leads to perceptions of groups as active agents (Brewer et al., 2004). The lack of relationship among Japanese and its presence among Americans may stem from cultural differences in the role of contextual factors in social perception and judgments (e.g., Yuki, 2003). Japanese people's more holistic view of agency at the individual level (Markus et al., 2006) appears to generalize to group-level judgments, resulting in weaker group autonomy beliefs in Japan and a lack of relationships (i.e., in the absence of contextual information) between group properties and group autonomy.

The present findings have potential practical implications in addition to the theoretical implications on which we have focused. The role of groups and, more specifically, teams, in the workplace continues to increase as problems become more complex and thus require teams, rather than individuals, to solve them. Cross-cultural collaborations are also increasing (Burke, Priest, Wooten, DiazGrandos, & Salas, 2009). It seems likely that cultural differences in the processes that underlie perceptions of groups and their consequences for group agency would lead to, for example, differences in attributions of credit for accomplishments as well as responsibility for wrong-doing (Menon et al., 1999). Furthermore, to the extent that dynamic (vs. essence) properties form the basis of group perceptions, efforts to change group perceptions may prove more fruitful (Brewer et al., 2004).

Of course, the present study has methodological limitations. The data are correlational and participants were convenience samples of university students, which may limit external validity. The latter limitation may be especially problematic in the case of Japan. Japanese university students (vs. Japanese in other life stages) are less likely to experience strong pressures from larger collectives in their daily lives. They are freed from the relatively strong regulations imposed by junior high and high schools and may be less exposed to the norms of companies or other organizations, perhaps contributing to weaker group autonomy beliefs. Indeed, interesting avenues for future research include examining group properties, entitativity, and group autonomy beliefs among people who vary in age and group experiences.

Another avenue for future research would be to assess individuals' implicit theories of groups. People within cultures likely vary in the tendency to be essence or dynamic theorists (cf., Hong & Chiu, 2001). Individuals may even be essence theorists with respect to some types of groups but dynamic theorists with respect to others. Understanding these implicit theories may help clarify the basis of cultural differences in the types of group properties that lead people to perceive groups as more or less entitative.

Additional research examining cultural similarities and differences in other sources and consequences of perceived group entitativity also seems necessary. For example, studies have shown that entitativity influences group identification (Castano et al., 2002), stereotypes (Yzerbyt et al., 1998), and attributions (Kashima et al., 2005; Lickel et al., 2003). Even if these relationships are universal, the underlying psychological processes may not be. We therefore look forward to additional research that examines these processes more fully across cultures.

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