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PERCEPTIONS OF GROUP VARIABILITY: MOVING FROM AN UNCERTAIN CRAWL TO A PURPOSEFUL STRIDE

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We survey the status of research on perceptions of group variability by summarizing existing cognitive, social, and motivational explanations. We also discuss issues that future work in this area will need to consider, such as theoretical integration, emphasis on process tracing measures, characteristics of groups (i.e., minimal vs. natural groups, equal vs. unequal familiarity groups, the perceivers' emotional reaction to groups, relative group size, relative group status), and sources of information about groups (i.e., direct vs. indirect, indirect passive vs. indirect active). We conclude by recommending that the research agenda be broadened to encompass not only the determinants but also the consequences of perceived group variability.

Research on perceived group variability has flourished in the past decade. Eight literature reviews published since 1986 (Linville, Salovey, & Fischer, 1986; Messick & Mackie, 1989; Mullen & Hu, 1989; Ostrom & Sedikides, 1992; Park, Judd, & Ryan, 1991; Quattrone, 1986; Simon, 1992; Wilder, 1986), attest to the extensive and detailed research attention that this topic has received.

This research attention is in part due to the realization that the study of perceived group variability is crucial for a complete understanding of stereotyping processes. Park et al. (1991) offered three reasons in support of this argument. First, perceiving a group as highly homogenous may lead to ignoring individuating information about new members of this group and instead ascribing to them attributes of the

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group as a whole (i.e., stereotyping the new members). Second, perceiving high homogeneity in a group may lead to interpreting ambiguous information about group members as consistent with the group stereotype. Third, perceiving high homogeneity in a group may lead to explaining away inconsistent information about group members as unrepresentative of the group, and thus mere exceptions. All these tendencies will contribute to stereotype maintenance, even in the face of stereotype-discrepant information.

The study of perceived group variability has followed three directions. The earliest direction was concerned with the empirical documentation of the out-group homogeneity effect—the perception of out-group members as being more homogenous than in-group members. Another wave of research dealt with the development of cognitive models designed to account for the out-group homogeneity effect. Concurrently, a third trend emphasized the role of social context and motivational processes in perceptions of both out-group and in-group homogeneity. The last two research directions are represented in this special issue.

STATUS OF THE FIELD I: COGNITIVE MODELS OF PERCEIVED GROUP VARIABILITY

Three cognitive models of perceived group variability have been empirically evaluated in the literature. These are the models by Linville, Fischer, and Salovey (1989), Ostrom, Carpenter, Sedikides, and Li (1993), and Park and Judd (1990).

According to Linville et al. (1989; see also Linville et al., 1986), people make variability judgments based on the stored exemplar representations they have of in-group and out-group members. A group will be perceived as less homogenous the greater the number of stored exemplars (i.e., different persons, distinct category subtypes, or different social encounters) a perceiver has about the group. Given that people store a higher number of in-group than out-group exemplars (through greater contact and experience with the in-group), the out-group will be perceived as more homogenous than the in-group.

Ostrom et al. (1993) proposed that stored in-group and out-group information is differentially structured. Specifically, in-group information is structured in the form of person categories, whereas out-group information is structured in the form of stereotype-related attribute categories. Judgments of group variability will sometimes involve a search of this information store. Searching such cognitive structures should produce individuated information for the in-group and attribute-based similarities for the out-group. Therefore, in-group members should be perceived as relatively heterogenous, whereas out-group members should be perceived as relatively homogenous.

Park and Judd (1990; see also Judd & Park, 1988) suggested that people are likely to acquire out-group information based on a limited number of prototypic members, but are likely to acquire in-group information based on a larger number of individual group members, including the self. As a result, judgments of in-group homogeneity will implicate different processes than judgments of out-group homogeneity. Perceivers will rely on preexisting beliefs about homogeneity when judging the out-group, but will alter these beliefs on the basis of exemplar retrieval when judging the in-group.

Two articles in the present special issue propose and test new cognitive explanations. Kashima and Kashima (this issue) posit that perceptions of group variability are an additive function of the amount of similarities and differences among group members. Kraus, Ryan, Judd, Hastie, and Park (this issue) postulate that perceivers use mental frequency distributions of group attributes when making group variability judgments.

Several other articles in this issue advance our understanding of the cognitive underpinning of the out-group homogeneity effect by testing components of proposed models (Mackie, Sherman, & Worth, this issue), extending previous models (Carpenter, this issue) or clarifying important parts of these models (Linville & Fisher, this issue). Mackie et al. report that judgments of group variability are memory-based rather than on-line. Carpenter presents results that qualify the Ostrom et al. (1993) findings. She reports that although gender-typed people cognitively individuate their gender in-group to a higher extent than their gender out-group, androgynous people are equally likely to cognitively individuate both groups. Finally, Linville and Fisher clarify the role of prototype and exemplar processing in the perception of group variability.

STATUS OF THE FIELD II: THE ROLE OF SOCIAL CONTEXT AND MOTIVATIONAL PROCESSES IN PERCEPTIONS OF GROUP VARIABILITY

An influential line of research (see Simon, 1992, for a review) inspired by social identity theory (Tajfel, 1978, 1982) has emphasized the need to place perceived group variability in a social context. This research has uncovered two circumstances under which in-group rather than out-group homogeneity is observed. These circumstances are relative

group size (with smaller in-groups perceiving themselves as more homogenous than larger out-groups) and attribute relevance (with in-groups perceiving themselves as more homogenous than out-groups on attributes relevant to the identities of the in-group members). Brown and Wootton-Millward (this issue) enrich these findings by examining how perceptions of group variability change over time in a naturalistic setting. Taking a somewhat different perspective, Brewer (this issue) accounts for determinants of in-group homogeneity by proposing a motivationally-based formulation, optimal distinctiveness theory. According to this theory, perceptions of in-group homogeneity are governed by motivational needs, such as the need for self-identity and for differentiation from others.

FUTURE RESEARCH DIRECTIONS

This special issue well illustrates the vibrant and prolific state of research on perceptions of group variability. The special issue mirrors the field in general, containing work on several cognitive explanations for the out-group homogeneity effect (Carpenter, this issue; Kashima & Kashima, this issue; Kraus et al., this issue; Linville & Fischer, this issue; Mackie, et al., this issue), work that emphasizes social contextual determinants of group variability (Brown & Wootton-Millward, this issue), and work extending a motivationally-based theory to the problem of perceived group variability (Brewer, this issue). The image of the field at present is more than satisfactory. But how about the future? The following sections will attempt to somewhat capture the future by delineating promising research directions.

THEORETICAL DEVELOPMENT

The nature of theory on perceived group variability has changed dramatically in recent years. The earliest explanation of out-group homogeneity effects was based on differential familiarity (e.g., Taylor, Fiske, Etcoff, & Ruderman, 1978). It was posited that greater familiarity led to more knowledge about the in-group which, in turn, led to greater perceived variability. This proved to be too simple an explanation.

Ostrom and Sedikides (1992) developed a provisional taxonomy of past theory on this problem. They summarized several need-based (or motivational) explanations of the out-group homogeneity effect, namely, the need for social identity (Tajfel, 1978), the need for uniqueness (Quattrone & Jones, 1980; Snyder & Fromkin, 1980), the need for predictability (Irwin, Tripodi, & Bieri, 1967), and the need to

justify in-group favoritism and out-group hostility (Wilder, 1986). Although some research has examined theoretical derivations pertaining to the need for social identity (Brown & Wootton-Millward, this issue; Simon, 1992) and the need for uniqueness (Brewer, this issue), the role of the need for predictability and the need to justify in-group favoritism and out-group hostility in governing perceptions of group variability have not been empirically examined.

Another theoretical tradition discussed by Ostrom and Sedikides (1992) is cognitively oriented approaches. Such approaches are concerned with the identification of the cognitive products that might mediate perceptions of group variability. Earlier work concentrated mostly on knowledge about the self, directly stored global beliefs about group variability, and stored exemplars of the group. These cognitive products have been proposed by such scholars as Park and Rothbart (1982), Park and Hastie (1987), Park and Judd (1990), Linville et al. (1989), and Mackie et al. (this issue).

The field is in a state of rapid development. It is now clear that several other cognitive products play a role in determining perceived group variability. A fairly extensive list of cognitive products has accumulated that might be accessed in the service of making variability judgments. Brewer (this issue) expanded on the role of the self by arguing that it is a very different cognitive product in the intergroup context (us vs. them) than in the intragroup context (me vs. us). Linville and Fischer (this issue) posited that knowledge of covariation among group features may be accessed in making variability judgments. Ostrom et al. (1993) and Carpenter (this issue) argued that knowledge of person categories (for in-groups) and stereotypical taxonomic categories (for out-groups) may be differentially accessed. Kashima and Kashima (this issue) proposed that people directly store knowledge of feature similarities and dissimilarities about groups, and that these feature lists are accessed. Park, Ryan, and Judd (1992) argued for the role of the sheer number of meaningful subgroups associated with the target group. Kraus et al. (this issue) proposed that people can construct mental frequency distributions that can then be used to make variability judgments.

Future research should begin to explore hybrid explanations of perceived group variability (Ostrom & Sedikides, 1992). One hybrid route is to develop theory about the differential role of the several proposed cognitive mediators. What are the circumstances under which each becomes ascendant, when are multiple cognitive products accessed, and how are conflicts among the several mediators reconciled? A second hybrid route would explore the interface of motivationally-based and cognitively-based conceptualizations. For example,

what are the cognitive consequences of arousing the need of uniqueness or the need to justify in-group favoritism and out-group hostility? The alternative to developing and testing hybrid explanations is for researchers of a given theoretical tradition (i.e., motivational or cognitive) to attempt to explain the data collected in support of the alternative constructs within their own conceptual framework.

Most of the models so far have been absorbed with explaining asymmetries in perceived group variability. However, the more enduring concern is to develop a comprehensive understanding of the forces surrounding perceived group variability (Park & Hastie, 1987). Accepting this as a goal should lead to a broadening of the research agenda. To date, models have focused on identifying the *determinants* of perceived group variability. However, a fuller understanding of the domain requires also looking at the *consequences* of perceived group variability. Although this emphasis is implicit in the list of reasons for studying group variability we summarized from Park et al. (1991) at the start of this article, no published research has yet tested these convictions.

PROCESS TRACING MEASURES

A second change in the field is in the role of process tracing measures. When familiarity was the dominant explanation, the only measure used for corroboration was memory for information pertaining to in-group and out-group members. This measure failed to reliably yield results consistent with the familiarity explanation (Ostrom et al., 1993). This, along with the recent proposals for other kinds of cognitive mediators, has led to the use of new process tracing measures. These measures include response time (Mackie et al., this issue), clustering in free recall (Carpenter, this issue; Ostrom et al., 1993), subjective estimates of covariance patterns (Linville & Fischer, this issue), and listing of group subtypes (Park et al., 1992). These measures help in the search for which cognitive mediators are plausible and which are not. No doubt more such measures will be adopted in the future.

MEASURES OF PERCEIVED VARIABILITY

Three types of measures of perceived variability have come into widespread use (Ostrom & Sedikides, 1992; Park & Judd, 1990). They are: stereotype endorsement, perceived dispersion, and perceived similarity. A great deal of past research has been viewing the three as if they were conceptually indistinguishable and methodologically interchangeable. This viewpoint is almost certainly incorrect.

Two of the measures, perceived dispersion and perceived similarity, are much more closely linked to the latent variable of perceived variability than is the stereotype endorsement measure. Perceived dispersion involves the respondent directly estimating a subjective frequency distribution (or a parameter of the distribution, such as range). This response task is a nearly direct mapping of the cognitive product postulated by Kraus et al. (this issue) regarding a mental frequency distribution, and is only slightly removed from models suggesting that perceivers create a distribution based on stored exemplars (e.g., Linville et al., 1989).

Ratings of perceived similarity also directly reflect several of the posited cognitive products. To the extent that people store overall variability judgments (Park & Hastie, 1987), the form of this store would closely coincide with categories on an experimenter-supplied rating scale. A similarity rating scale also would be directly related to stored lists of similarities and dissimilarities as was proposed by Kashima and Kashima (this issue).

The third measure, stereotype endorsement, appears to be a bit more remote from the latent variable of perceived variability than are the other two measures. Stereotype endorsement asks the respondent to indicate the extent to which (e.g., percentage of) the group possesses stereotypic and counterstereotypic characteristics. Possession of a group stereotype is indicated by the person attributing the stereotypic features more strongly to the group than the counterstereotypic features. People who hold the stereotype more strongly will show a greater difference than those who have only a weak stereotype of the group. This difference in stereotype strength is precisely the index used to reflect perceived variability. The stereotype endorsement measure, then, does not clearly differentiate between the concept of stereotype strength and the concept of perceived group variability.

Future research will need to address the question of whether the different measures are differentially sensitive to different mediators. Will conditions that increase the accessibility of mental frequency distributions and/or the likelihood of exemplar search show strongest effects on the perceived distribution measure? Will conditions that increase the accessibility of stored similarity judgments and stored lists of similar and dissimilar features show strongest effects on the perceived similarity measure? Can stereotype strength be conceptually differentiated from perceived variability, and can their different contributions to the stereotype endorsement measure be empirically established?

NOT ALL GROUPS ARE ALIKE

Research on the out-group homogeneity effect started from the assumption that group membership has a strong impact on perceived group variability. And it does. But in-groups and out-groups can differ in several ways. One difference that has received some attention is the contrast between natural groups and minimal groups. A review of research on this group difference (Ostrom & Sedikides, 1992) showed that out-group homogeneity differences were robust with natural groups, but difficult to verify in minimal groups. This pattern held for all three kinds of variability measures discussed in the previous section. Future work will need to determine whether any conditions exist that produce in-group/out-group differences in minimal groups.

Another way that in-groups and out-groups differ is in their relative familiarity. We may be highly familiar with the out-group, as is the case with gender-based groups. Alternatively, the out-group may be considerably less familiar than the in-group, as is usually the case with fraternity membership, college major, and such demographic groupings as nationality, religion, and race. Sometimes correlated with familiarity is the perceiver's emotional reaction to the groups, both in terms of the strength of ties to the in-group and the depth of hostility toward the out-group. Another difference between groups has to do with relative group size (Simon & Brown, 1987) and relative group status (Simon, Glassner-Bayerl, & Stratenwerth, 1991). These forms of differential familiarity, differential affective dispositions, and differential group size and group status may influence which mediators become ascendant in the perception of group variability.

SOURCES OF INFORMATION ABOUT GROUPS

Knowledge about groups often comes through direct interaction with members of the groups. Exemplar theories (e.g., Smith & Zarate, 1992) focus on how we represent and access such interaction episodes. Theories concerned with the on-line acquisition and storage of global variability judgments (see Mackie et al., this issue) also focus on such direct experiences with group members.

Nevertheless, much of our information about groups (both in-groups and out-groups) comes from indirect sources. Some of these sources are fairly passive; they include reading books and magazines, going to the movies, and watching television. They are passive sources in the sense that the perceiver cannot query the source for elaboration and justification of the source's characterization of the group and its

members. Another kind of source, active and possibly more impactful, is discussions with other persons. Here, the information source is both interactive and bears a social relationship with the perceiver. These characteristics doubtlessly lead to more attention, more credibility, and more elaboration, given interpersonally acquired information.

The nature of the information sources is a potentially critical, but as yet unexplored, determinant of perceived variability. It is likely that most socially-obtained information about the out-group is from in-group members. We need to know more about social identity processes that will influence the selective communication of facts and introduce biases in the interpretation of those facts about both the in-group and the out-group. Ostrom et al. (1993) have speculated that such differential communication patterns may be responsible for the tendency to preferentially access person categories for in-group information and stereotype categories for out-group information.

FINAL THOUGHTS

We hope that this special journal issue will contribute toward generating further enthusiasm for research on the cognitive, social, and motivational underpinnings of perceived group variability. Research on perceptions of group variability, although growing rapidly, is still in its infancy. We two editors of this special issue, one recently a father for the first time and the other recently a grandfather for the first time, are acutely aware of the extent to which direct encouragement and behavioral modeling can facilitate growth. It is our hope that this special issue will help move research on perceived group variability from an uncertain crawl to a purposeful stride.

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