

## **Differential processing of ingroup and outgroup information: the role of relative group status in permeable boundary groups**

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### **Abstract**

*Perceivers individuate cognitively the ingroup more than the outgroup; that is, perceivers use person categories to process information about the ingroup, but use stereotypic attribute categories to process information about the outgroup. This phenomenon is labelled the differential processing effect (DPE). Is the DPE moderated by relative group status? In two experiments, either high- or low-status members of permeable-boundary groups (i.e. groups that encourage upward mobility) read through information about unfamiliar ingroup and outgroup members. Relative group status moderated the DPE. Clustering indices in recall and confusions in a name-matching task indicated that high-status members individuated the ingroup more than the outgroup, thus replicating the DPE. However, low-status members individuated the outgroup more than the ingroup, thus reversing the DPE. A third experiment suggested that these findings are predicated on the ingroup information being stereotype-consistent.*

### **INTRODUCTION**

How is information about ingroup and outgroup members processed? To address this question, Ostrom, Carpenter, Sedikides and Li (1993) proposed the differential processing hypothesis. This model proposes that social information can be

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cognitively processed (i.e. encoded, stored, or retrieved) in at least two forms: by person categories or by attribute categories. Consider the following information array: 'Bruno is a chemist', 'Bruno enjoys having a glass of wine with his close colleagues on weekends', 'Wanda is an astronomer' and 'Wanda enjoys reading a book in her apartment on weekend evenings'. This information can be processed in terms of either person categories ('Bruno' and 'Wanda') or attribute categories ('professional orientation' and 'favourite weekend activity'). Most importantly, the differential processing hypothesis proposes that ingroup information is processed differently than outgroup information. Ingroup information is processed on the basis of person categories, whereas outgroup information is processed on the basis of stereotypic attribute categories. The ingroup is cognitively individuated more than the outgroup.

Support for the differential processing hypothesis has been obtained in five experiments (Carpenter, 1993; Ostrom et al., 1993). Participants in these experiments read through stereotype-consistent information about several fictitious persons, half of which are ingroup members and half are outgroup members. Then, participants recall the information and engage in a name-matching task (i.e. matching each attribute with the correct member name). Participants cluster ingroup information around person categories and outgroup information around stereotypic attribute categories. Also, participants make fewer name-matching confusions for the ingroup than the outgroup. In all, participants individuate cognitively ingroup information to a greater extent than outgroup information. This phenomenon is labelled the *differential processing effect* (DPE).

Past research on the DPE has relied on two types of groups. One type is groups of *perceived comparable* status. Ostrom et al. (1993, Experiments 1 and 2) and Carpenter (1993) used the groups of college women and men. The assumption that college women and men are comparable status groups was tested by asking 20 female and 20 male University of Wisconsin—Madison (UW) introductory psychology students the question 'In general, which of the two groups, men or women, is of higher status?' (—5—men are of higher status, 0—men and women are of equal status, 5—women are of higher status). Neither the mean rating for male participants ( $M=0.05$ ) nor the mean rating for female participants ( $M=-0.10$ ) differed significantly from the scale midpoint,  $t(19)=0.22$ ,  $p<0.89$ , and  $t(19)=-0.62$ ,  $p<0.64$ , respectively. (The ratings of male and female participants did not differ significantly from each other,  $t(38)=0.55$ ,  $p<0.59$ .) These results are consistent with the notion that college women and men are comparable-status groups, at least at UW.

The second type of groups that research on the DPE has used is groups of perceived *higher own* status. Ostrom et al. (1993, Experiment 3) used the groups engineering majors and architecture majors. The assumption that these are higher own status groups was tested by asking 16 UW engineering majors and 16 UW architecture majors the question 'In general, which of the two groups, engineering majors or architecture majors, is of higher status?' (—5—engineering majors are of higher status, 0—engineering majors and architecture majors are of equal status, 5—architecture majors are of higher status). Tests that tested the significance of the mean ratings against the scale midpoint showed that engineering majors perceived the ingroup to be of higher status ( $M=-0.75$ ),  $t(15)=-2.32$ ,  $p<0.04$ , and so did architecture majors ( $M=0.94$ ),  $t(15)=2.70$ ,  $p<0.02$ . (The two groups differed

significantly in their perceptions of status,  $t(30) = -3.56$ ,  $p < 0.001$ .) These results bolster the notion that these two groups are higher own status groups.

By relying on groups of comparable or higher own status, research on the DPE has neglected an important sociostructural variable *relative group status*. This variable is defined as the relative position of groups on valued domains of comparison, such as educational achievement and social standing (Sachdev & Bourhis, 1987, p.278). This variable refers to mutually perceived status differences. That is, it refers to both groups consenting as to which is the higher-status group and which is the lower-status group.

The variable of relative group status is prevalent and impactful in intergroup situations. Arguably, most intergroup situations are characterized by social stratification based on existing status inequalities between groups (Giles, Bourhis, & Taylor, 1977). Further, the impact of *relative group status* on intergroup situations is manifested by *research* demonstrating that frequently low-status groups favour high-status outgroups in reward allocations, evaluate high-status outgroups more positively than low-status ingroups (Mullen, Brown & Smith, 1992), and identify more strongly with high-status outgroups (Ellemers, 1993).

### RELATIVE GROUP STATUS AS A MODERATOR OF THE DPE

The variable of relative group status has implications for the DPE. Introduction of this variable leads to the emergence of new issues. Will high-status group members exhibit the DPE? How likely is it for low-status group members to reverse the DPE, that is, to individuate cognitively the outgroup to a greater extent than the ingroup? Stated more generally, does relative group status moderate the DPE?

#### **Distinguishing between permeable-boundary and impermeable-boundary relative status groups**

Before building a rationale for the moderational role of relative group status, the distinction between permeable-boundary and impermeable-boundary relative status groups (Tajfel & Turner, 1979) needs to be discussed. Permeable-boundary groups encourage movement of members from the lower- to the higher-status group. Examples of such groups include freshmen versus sophomores, undergraduate versus graduate students, and working class versus middle class individuals. In contrast, impermeable-boundary groups discourage (or even prohibit) movement of members from the lower- to the higher-status group, as is the case with groups that value loyalty such as ethnic groups, law firms, or campus sororities/fraternities.

This research is concerned exclusively with permeable-boundary groups, because relative group status is expected to have its strongest influence on cognitive individuation in a context involving such groups. The DPE is predicted to hold for high-status participants; they will individuate the ingroup more than the outgroup. However, a reversal of the DPE is predicted for low-status participants; they will individuate the outgroup more than the ingroup. This pattern will not necessarily hold for impermeable-boundary groups, because low-status members will not be

particularly motivated to individuate the high-status outgroup, given the improbability or impossibility of joining the outgroup.

### **Rationale: differential attention allocation**

Why should high-status members individuate the ingroup more than the outgroup? Why should low-status members individuate the outgroup more than the ingroup? Before offering a rationale for the moderating role of relative group status, the reader will need to be reminded of the rationale for the differential processing hypothesis (Ostrom *et al.*, 1993). This hypothesis identifies processes that lead to the facilitation of person categories for the ingroup and stereotypic attribute categories for the outgroup. These processes can account for (a) why person categories are more available and accessible in memory for the ingroup, whereas stereotypic attribute categories are more available and accessible in memory for the outgroup, and (b) why new (and stereotype-consistent) information is processed differentially—by person categories for the ingroup and by stereotypic attribute categories for the outgroup.

Differential availability and accessibility relate to the acquaintanceship process. At early stages of acquaintanceship with a group, perceivers are likely to look for similarities among group members—similarities that will differentiate the group from other groups (Quattrone, 1986). These similarities are often times generalizations or stereotypes. For example, perceivers may categorize group members as driving BMWs, living in the suburbs, and playing golf on the weekends. Stated otherwise, perceivers are likely to represent group members in terms of stereotypic attribute categories (i.e. 'type of car owned', 'residential preferences' and 'favourite weekend activity'). Assuming that contact with the outgroup stagnates at early acquaintanceship levels, stereotypic attribute categories for the outgroup will be highly available and accessible and will be involved in the processing of new outgroup information. However, in later stages of acquaintanceship, perceivers will begin representing group members in terms of person categories. Person categories will be formed because of extensive social interactions with group members, which furnish individuating information (Pryor & Ostrom, 1981). Assuming that high interaction frequency characterizes ingroup contact, person categories for the ingroup will be highly available and accessible. These categories will be used in the processing of *new* ingroup information.

In the present research, graduate students and college sophomores were the high-status groups, whereas undergraduate students and college freshmen were the low-status groups, respectively. High-status members were expected to individuate the ingroup more than the outgroup, thus upholding the DPE. In contrast, low-status members were expected to individuate the outgroup more than the ingroup, thus reversing the DPE.

The high- and low-status participants had arguably well-formed categories for processing ingroup and outgroup information—person categories for the ingroup and stereotypic attribute categories for the outgroup. Why, then, is it predicted for these participants to differ in the processing of *new* (and stereotype-consistent) ingroup and outgroup information? More specifically, why should high-status participants be expected to individuate the ingroup, whereas low-status participants

be expected to individuate the outgroup? The construct of attention provides the basis for an explanation. High-status participants will direct their attention to individual ingroup members—hence the formation of ingroup person categories. However, low-status participants will pay disproportionate attention to outgroup members—hence the formation of outgroup person categories.

Attention can be defined in at least three ways (Fiske, 1993). One is time to process. Another is motivation to process. When ample time is available and motivation is high, information is processed in a highly elaborative manner, that is, it is being scrutinized through comparisons of information items, consideration of inconsistent items, resolution of inconsistencies among items, and moment-to-moment modification of item-based inferences. Attention can also be defined in terms of judgmental weights being assigned to information items (Fiske, 1980). The reported experiments did not manipulate processing time. That is, the time allotted for the processing of ingroup and outgroup information was held constant. Therefore, it is assumed, by default, that either motivation to process or differential judgmental weights will drive the predicted effects. Participants will be motivated to process and assign heavier weights to information pertaining to the high-status groups.

Why should high- and low-status participants allocate differential attention to the ingroup and the outgroup? Three theoretical formulations speak to this question: The anticipatory socialization perspective, reference group theory, and social identity theory.

#### *Anticipatory socialization perspective*

Merton (1957) coined the term anticipatory socialization to refer to the temporal period in which persons who aspire to group membership begin to prepare themselves for a smooth transition into their new role by acquiring knowledge about and emulating the personality and behavioural profile of members of the desired group. As Thornton and Nardi (1975) put it, 'Individuals develop images of what they feel will be expected of them and start to prepare themselves psychologically for what they expect the roles will be like' (p.875). Emulation of the psychological profile of members of the desired group presupposes close attention to information about each member and cognitive elaboration of the information pertaining to each member (i.e. comparing attributes to each other, resolving inconsistencies among attributes, drawing inferences). The result will be cognitive individuation (Erber & Fiske, 1984; Neuberg & Fiske, 1987).

Cognitive individuation of the desired group will be augmented when this group is of higher status than the ingroup. Given the prospect of upward mobility, low-status participants will pay attention to and elaborate cognitively the information about the outgroup. Graduate students and sophomores do not anticipate socialization into the low-status outgroups. Hence, they will individuate their high-status ingroup. However, undergraduate students and freshmen anticipate to be socialized into the desired groups of graduate students and sophomores, respectively. Hence, they will individuate the high-status outgroup.

*Reference group theory*

Reference group theory (Hyman & Singer, 1968; Newcomb, 1965) proposes that, in order to make belief and attitude formation easier, people look to reference groups to tell them what beliefs and attitudes to hold. People may belong to a certain group, but, depending on the situation, choose an alternative and more desired reference group. This desired group will benefit people by exposing them to valid beliefs and attitudes. Information about group members' beliefs and attitudes is extracted by paying attention to descriptions of individual group members. Attention is likely to lead to cognitive elaboration of the information pertaining to each group member, thus resulting in cognitive individuation.

Perceivers are more likely to individuate high- as opposed to low-status groups, because the former are regarded as having more valid beliefs and attitudes. In an intergroup context, high-status members will individuate the ingroup. However, low-status members will individuate the outgroup. Graduate students and sophomores are suitable high-status reference groups for undergraduate students and freshpersons, respectively. Graduate students or sophomores are psychologically and socially close to undergraduate students or freshpersons. The latter have a good deal of information about the outgroup, are willing and even eager to adopt the outgroup's beliefs and attitudes, and generally seek to join the outgroup in the near future. Graduate students or sophomores will pay attention to ingroup members, because they consider their attitudes and beliefs valid. Thus, graduate students or sophomores will individuate the ingroup. However, undergraduate students and freshpersons will pay attention to outgroup members in order to extract as much information as possible about their beliefs and attitudes. Thus, undergraduate students and freshperson will individuate the outgroup.

*Social identity theory*

According to social identity theory (Tajfel, 1982), people strive for a positive social identity, as a means for maintaining and enhancing their self-esteem. Social identity refers to 'those aspects of an individual's self-image that derive from the social categories to which he perceives himself as belonging' (Tajfel & Turner, 1979, p.40). Social identity is attainable, in part, by thinking of the ingroup as distinct from the outgroup on self relevant dimensions. Upon identifying with a group, people will likely think of ingroup members as distinct and unique. People will individuate the ingroup.

Social identity theory pertains to the case of relative status groups. People, according to social identity theory, identify sometimes with groups of which they are not members. Whether people will identify with a particular group or not depends, in part, on whether that group enhances the positivity of their social identity and their self-esteem. This is likely to occur when members of that group are perceived to have qualities that are better than those of the ingroup. In the case of relative status groups, high-status members will identify with the ingroup, because the ingroup possesses the most desirable qualities. However, low-status members will identify with the outgroup, because the outgroup possesses the most desirable qualities. Identification with a group can lead to perceptions of members of this group as unique. This will occur by allocating attention to new information about group members. Increased attention

will lead to cognitive individuation. High-status group members (i.e. graduate students, sophomores) will individuate the ingroup, but low-status group members (i.e. undergraduate students, freshmen) will individuate the outgroup.

## EXPERIMENT 1

Experiment I used graduate and undergraduate students as the high-status and low-status groups, respectively. Participants in all pilot studies and the experiment were UW students. The experimenters were undergraduate students, although they did not reveal their status to participants.

A pilot study was conducted to test whether the two groups were of relative status. Twenty-two male graduate (non-psychology) students and 22 male introductory psychology students answered the question: 'In general, which of the two groups, undergraduate students or graduate students, is of higher status?' (—5 = undergraduate students are of higher status, 0 = undergraduate and graduate students are of equal status, 5 = graduate students are of higher status). Graduate students perceived the ingroup to be of higher status. Their mean rating ( $M=3.77$ ) was significantly different from the scale midpoint,  $t(21)=18.20$ ,  $p<0.0001$ . However, undergraduate students perceived the outgroup to be of higher status. Their mean rating ( $M=2.77$ ) was significantly different from the scale midpoint,  $t(21)=8.61$ ,  $p<0.0001$ . (Graduate student participants rated graduate students as being of higher status than undergraduate student participants did,  $t(42)=-2.61$ ,  $p<0.01$ .) This pilot study confirmed the assumption that graduate and undergraduate students compose relative status groups.

### Method

Participants were 56 male graduate (non-psychology) and 56 male undergraduate (introductory psychology) students. Two pilot studies were conducted to create the group-stereotypic stimulus materials. As part of the first pilot study, a sheet was mailed to 92 graduate students selected at random from the campus phone directory. This sheet contained the following instructions: 'Any group can be described in terms of typical attributes. In this study, we are interested in the typical attributes of "graduate students" and "undergraduate students". We would like you to tell us what you think are the five attributes that most typically describe graduate students, and the five attributes that most typically describe undergraduate students'. Nineteen (21 per cent) of the graduate students returned their responses. Thirty-nine introductory psychology students responded to the same sheet.

Participants listed a total of 256 attributes. The author of the present article and two research assistants shortened this list by selecting attributes appearing with relatively high frequency (i.e. listed by at least seven participants). This procedure yielded 26 attributes, which were grouped into the following eight categories: 'relationship with peers', 'attitude toward school', 'professional orientation', 'favourite weekend activity', 'orientation toward romantic relationships', 'source of social support', 'relationship with parents', and 'club affiliation'. Several new

attributes were generated for each attribute categories under the stipulation that each category contain four attributes referring to undergraduate students and four attributes referring to graduate students. This process resulted in 32 attributes for each group. Next, 20 male graduate (non-psychology) students and 20 male introductory psychology students rated the 64 attributes (ordered randomly) for group-stereotypicality on the following scale: 1=strongly typical of UW undergraduate students; 2=moderately typical of UW undergraduate students; 3=slightly typical of UW undergraduate students; 4=typical of neither UW undergraduate students nor UW graduate students; 5=slightly typical of UW graduate students; 6=moderately typical of UW graduate students; 7=strongly typical of UW graduate students. Graduate attributes ( $M=4.98$ ) were perceived as stereotypic of graduate students, as a t-test testing for difference against the scale midpoint revealed,  $t(39)=107.44$ ,  $p<0.0001$ . Undergraduate attributes ( $M=2.54$ ) were perceived as stereotypic of undergraduate students,  $t(39)=46.70$ ,  $p<0.0001$ . The two means were significantly different from each other,  $F(1,38)=1,913$ ,  $p<0.0001$ . This main effect was qualified by a significant interaction that revealed asymmetrical perceptions of stereotypicality: Graduate students ( $M=5.17$ ) perceived graduate attributes as more stereotypic than undergraduate students did ( $M=4.79$ ), whereas undergraduate students perceived undergraduate attributes ( $M=2.77$ ) as less stereotypic than graduate students did ( $M=2.31$ ),  $F(1,38)=55.93$ ,  $p<0.0001$ .

Next, the 64 attributes were assigned to two replication sets (Table I). Replication set A described the four undergraduate stimulus persons using the attribute categories 'orientation toward romantic relationships', 'source of social support', 'relationship with parents' and 'club affiliation'; the same set described the four graduate stimulus persons using the attribute categories 'relationship with peers', 'attitude toward school', 'professional orientation' and 'favourite weekend activity'. Replication set d reversed the attribute categories for undergraduate and graduate stimulus persons. Each replication set contained 32 attributes, and each stimulus person was described by four attributes. All stimulus persons were male. The attributes were assigned randomly to individual stimulus persons within each category and stimulus set. In the few cases of within-person inconsistencies, attributes were switched from one person to another. Also, the order of the attributes within each stimulus person was randomized and kept fixed. The stimulus array provided participants with at least two ways of organizing information—by person categories *or by* stereotypic attribute categories.

All stimulus materials and dependent measures were included in the same booklet. Participants read on the cover page of the booklet that the experiment was an exploration of person perception, and that their task was to form an impression of and remember the information about each stimulus person for an impending recall task. Each stimulus person was described on a separate page. The stimulus person's name appeared at the top of the page, followed by his status and four attributes, each on a separate line. The status of stimulus persons was alternated, and the presentation order was constant.

Although people belong simultaneously to multiple groups, in any situation there is arguably an optimal way (i.e. a way that best fits the situation structurally or normatively) for social categorization (Oakes, 1987). Several precautions were taken to ascertain that participants adopted the categorization necessitated by the theoretical premises of this research, namely categorization according to graduate/

Table I. Stimulus replication sets used in Experiment 1

Relationship with peers	Attitude to school	Professional Orientation	Favorite Weekend activity	Orientation toward romantic relationships	Source of social support	Relationship with parents	Club affiliation
Stimulus replication set A							
Graduate students							
Eugene Foster	Formal	Committed	Is a chemist	Having a glass of			
Ralph	Apprehensive	Diligent	Is a mathematician	Going to same bar			
Owen	Reserved	Responsible	Is an astronomer	Reading a book			
	Solemn	Passionate	Is a philosopher	Having people over for dinner			
Undergraduate students							
Olin					Superficial	Friends	Psi Chi
Tyler					Jealous	Prayer group	Argues with them Goes to church with them Right to Life
Norman					Confused	Counsellor	Asks them for financial support Prelaw Society
Mitchel					Selfish	Older sister	Emulates them Grateful Dead
Stimulus replication set B							
Graduate students							
Eugene					Married	Spouse	Discusses marital issues Greenpeace
Foster					Engaged	Fiancée	Unable to visit Wild Life
Ralph					Involved in a monogamous relationship	Mentors	Debates current events Foundation National Geographic Society
Owen					Separated	Himself	Unresponsive to correspondences Smithsonian Institute
Undergraduate students							
Olin	Rowdy	Lazy	Exploring accounting	Going to big parties			
Tyler	Questioning	Worried	Exploring theology	Going to religious retreats			
Norman	Naïve	Insecure	Exploring law	Meeting new people			
Mitchel	Carefree	Apathetic	Exploring retail sales	Going to football games			

undergraduate student membership\_ Specifically, (1) group-stereotypic attributes were used, (2) participants were recruited and tested in same-status groups, (3) before the beginning of each experimental session, the experimenter mentioned that all participants in the room belonged to the same-status group, (4) participants read on the cover page of the booklet that they would *read* about four graduate and four undergraduate students, and (5) immediately prior to commencement of the session, the experimenter reminded participants that information about four graduate and four undergraduate students was about to follow. Also, male participants and stimulus persons were used, thus excluding gender as a basis of categorization.

Participants read through the information at the rate of 20s/page and then engaged in a distractor task for 2.5min. Next, participants were given 5min to recall each group's attributes 'in any order they came to mind'. They wrote down one attribute per page. Finally, participants completed the name-matching task (Taylor, Fiske, Etcoff & Ruderman, 1978). They were provided with a page in which the names of the eight stimulus persons and the entire set of 32 attributes (On random order) appeared, and were asked to match each attribute with the correct name.

## Results and discussion

### *Clustering*

Recall protocols were coded for person and attribute category clustering. The clustering measure Adjusted Ratio of Clustering (ARC; Roenker, Thompson & Brown, 1971) was used. ARC has been recognized as the 'single most desirable index of order of information in free recall currently available' (Scull, 1984, p.9). ARC-scores can range from approximately -2 to +1. (ARC-scores less than -1 are rarely encountered in this programme of research.) An ARC-score of +1 indicates perfect category (person or attribute, in this case) clustering; an ARC-score of 0 indicates chance category clustering; negative ARC-scores result when participants use clustering categories that are different from the experimenter's coding scheme (i.e. person or attribute categories).

Four ARC-scores were computed for each participant. Two ARC-scores reflected clustering around the ingroup person and attribute categories, and two reflected clustering around the outgroup person and attribute categories. One additional factor was created- organizational category. It was composed of two levels, person organization (i.e. person ARC-scores) and attribute organization (i.e. attribute ARC-scores). Finally, the factors participant status and stimulus person status were recoded into the factor stimulus group membership. The two levels of this factor reflected the ingroup versus outgroup membership of the stimulus persons (i.e. whether the ARC-scores referred to the ingroup versus the outgroup).

The obtained ARC-scores were submitted to a 2 (participant status: low, high) x 2 (replication set: A, B) x 2 (recall order: low-status stimulus persons recalled first, high-status stimulus persons recalled first) x 2 (stimulus group membership: ingroup, outgroup) x 2 (organizational category: person organization, attribute organization)

Table 2. Person and attribute ARC-scores as a function of stimulus group membership and participant status in experiment 1

	Person ARC-scores	Attribute ARC-scores
I. Overall ARC-scores		
Ingroup	0.219*	0.132*
Outgroup	0.140*	0.180*
II. ARC-scores contributed by high-status participants		
Ingroup	0.389*	0.036
Outgroup	0.026	0.278*
II. ARC-scores contributed by low-status participants		
Ingroup	0.050	0.228*
Outgroup	0.254*	0.083

*Note\_* An asterisk indicates that the ARC-score was significantly different from the value of zero.

mixed-design analysis of variance (ANOVA)', with the first three factors treated as between-participants variables and the last two factors treated as within-participants variables.<sup>2</sup> Results are presented in Table 2.

The DPE was replicated. Participants processed ingroup information around person rather than attribute categories, but processed outgroup information around attribute rather than person categories, stimulus group membership x organizational category interaction  $F(1,104)=4.57$ ,  $p<0.035$ .

The key issue is whether the DPE is moderated by relative group status. Support for the moderational role of relative group status would be obtained if the DPE was present in the case of high-status participants, but reversed in the case of low-status participants. The interaction among stimulus group membership, organizational category and participant status was indeed significant,  $F(1,104)=47.12$ ,  $p<0.0001$ . This interaction was decomposed by examining the stimulus group membership x organizational category interaction separately for high- and low-status participants. The DPP, was evident in the case of high-status participants,  $F(1,52)=33.71$ ,  $p<0.0001$ . They processed ingroup information around person

<sup>1</sup>ARC scores in this repeated measures design were quasi-dependent. Whereas it is possible for both the person ARC-score and attribute ARC-score to be 0, it is not possible for both scores to be 1. Correlated repeated measures, however, are a problem to assumptions of homogeneity and independence *only* when the ratio of the largest cell variance to the smallest cell variance exceeds 3 to 1 (Kernel, 1991, p.352). No relevant ratio in the present experiments exceeded 1.9:1.

<sup>2</sup>To be included in the clustering analysis, participants had to satisfy a relatively stringent recall profile. Specifically, they had to provide four valid ARC scores: person ARC-scores for the ingroup and the outgroup, and attribute ARC-scores for the ingroup and the outgroup. Consider, for example, the case of the person ARC-score for the ingroup. In order for this ARC-score to be valid, (a) the participant ought to recall at least three ingroup attributes, and (b) the attributes ought to belong to at least two stimulus persons. A total of 130 participants were tested in order to obtain the 112 participants used in the clustering analyses. Eighteen participants were excluded from the analyses because these participants provided at least one invalid ARC-score. This raises the possibility that the obtained results were not representative of the entire set of participants. Two subsidiary analyses were conducted to assess this possibility. First, for participants who provided at least one valid ARC-score, the missing ARCSCORE(s) was substituted with the corresponding cell mean value(s). This procedure increased the number of usable participants from 112 to 126. Second, for each participant, only the ARC-scores) for the first recall order was computed, expecting that recall would be higher in the first half of the recall protocols. This Procedure increased the number of usable participants from 112 to 122. The subsidiary analyses yielded stronger results in the same direction as the reported analyses. Participant attrition did not *all* *Mt* the results of Experiment 1.

rather than attribute categories ( $t(55)=4.08$ ,  $p<0.0001$ ), but processed outgroup information around attribute rather than person categories ( $O(55)=-3.20$ ,  $p<0.002$ ). High-status participants individuated the ingroup. However, the DPE was reversed in the case of low-status participants, ( $t(1,52)=14.41$ ,  $p<0.0001$ ). They processed ingroup information by attribute rather than person categories ( $t(55)=-2.79$ ,  $p<0.007$ ), but processed outgroup information by person rather than attribute categories ( $t(55)=2.08$ ,  $p<0.042$ ). Low-status participants individuated the outgroup. Relative group status moderated the DPE.

### *Name-matching*

The name-matching task also yields indices that test whether ingroup and outgroup information has been processed differentially. Four indices were derived: within-group confusions for both the ingroup and the outgroup, and between-group confusions for both the ingroup and the outgroup. Within-group confusions occur when participants match incorrectly an attribute from a given group with a name from the same group, whereas between-group confusions occur when participants match incorrectly an attribute from a given group with a name from the alternative group. Further, ingroup confusions occur when an outgroup attribute is matched with the wrong ingroup name, whereas outgroup confusions occur when an outgroup attribute is matched with the wrong outgroup name. The mixed-design ANOVA involved confusion type (within-group versus between-group confusions) and stimulus group membership (ingroup versus outgroup confusions) as within-participants factors, and participant status, replication set and recall order as between-participants factors. Results are displayed in Table 3.

*Within-group versus between-group confusions* This index addresses the question whether participants structured their stimulus field around the undergraduate/graduate student group membership. If between-group confusions are lower than within-group confusions, this would demonstrate that participants had separable perceptual boundaries for the two groups.

Table 3. Confusions as a function of confusion type and group membership in Experiment 1

Confusion Type	Group Membership		
	Ingroup	Outgroup	Mean
I. Overall confusions			
Within-group	4.91	5.21	5.06
Between-group	1.50	1.39	1.45
Mean	3.21	3.30	
II Confusions made by high-status participants			
Within-group	3.74	5.56	4.65
Between-group	1.36	1.34	1.35
Mean	2.55	3.45	
III. Confusions made by low-status participants			
Within-group	6.09	4.86	5.48
Between-group	1.65	1.45	1.55
Mean	3.87	3.16	

The two kinds of confusions are of unequal magnitude. The number of between-group confusions would be expected by chance to be greater by 1/4 from the number of within-group confusions. For example, each undergraduate stimulus person could be confused with three other undergraduate persons, but with four graduate persons. Thus, the proper statistical test compares each participant's within-group confusions with 3/4 of the participant's between-group confusions (Taylor et al., 1978).

Participants made fewer between-group than within-group confusions, confusion type main effect  $F(1,104)=135.25$ ,  $p<0.0001$ . The interaction between confusion type and participant status was not significant,  $F(1,104)=0.98$ ,  $p<0.32$ . Both high-status participants (confusion type main effect  $F(1,52)=65.22$ ,  $p<0.0001$ ) and low-status participants (confusion type main effect  $F(1,52)=70.34$ ,  $p<0.0001$ ) structured their perceptual field along the undergraduate student/graduate student group membership. These findings validate the use of the present stimulus materials for examining issues related to intergroup perception.

*Ingroup versus outgroup confusions* The moderational role of relative group status is tested by the stimulus group membership x participant status interaction. High-status participants should make fewer ingroup than outgroup confusions (i.e. individuate the ingroup), but low-status participants should make more ingroup than outgroup confusions (i.e. individuate the outgroup). The stimulus group membership x participant status interaction was significant,  $F(1,104)=54.75$ ,  $p<0.0001$ . The interaction was decomposed by examining the stimulus group membership main effect separately for high- and low-status participants. High-status participants made fewer ingroup than outgroup confusions,  $F(1,52)=30.08$ ,  $p<0.0001$ , whereas low-status participants made more ingroup than outgroup confusions,  $F(1,52)=24.68$ ,  $p<0.001$ . The results bolstered the moderational role of relative group status. Finally, significant stimulus group membership x confusion type interactions for both high-status participants ( $F(1,52)=31.79$ ,  $p<0.0001$ ) and low-status participants ( $F(1,52)=15.12$ ,  $p<0.001$ ) revealed that the difference in confusions between the ingroup and the outgroup was due to the within-group confusions.

#### *Number of attributes recalled*

Relative group status is expected to moderate cognitive organization of information but not recall. Indeed, a mixed-design ANOVA using stimulus group membership (recall for ingroup versus outgroup attributes) as the repeated measures factor and participant status, replication set, and order as between-participants factors produced a non-significant stimulus group membership x participant status interaction,  $F(1,88)=1.08$ ,  $p<0.30$ . Examination of the stimulus group membership main effect separately for high- and low-status participants revealed that high-status participants recalled an average of 7.95 ingroup and 8.05 outgroup attributes,  $F(1,52)=0.19$ ,  $p<0.67$ , and low-status participants recalled an average of 8.20 ingroup and 7.96 outgroup attributes,  $F(1,52)=1.19$ ,  $p<0.28$ .

## **EXPERIMENT 2**

Experiment I is the first experiment to demonstrate that the DPE is moderated by relative group status. This novel finding invites replication. However, there is

another reason that warrants a replicational attempt. The present theoretical orientation (i.e. rationale based on the anticipatory socialization perspective, reference group theory and social identity theory) presupposes that low-status group members have a relatively high likelihood of joining the high-status group. Approximately 60 per cent of UW undergraduates pursue a postgraduate degree within a year after graduation (Arlene Davenport, UW undergraduate advisor; electronic mail communication, 2/9/95). This represents a rather moderate likelihood of joining the outgroup. A replicational study that would involve a higher likelihood is needed.

There is a third reason for replication. Experiment 1 used graduate and undergraduate students as the high- and low-status groups, respectively. Use of these groups created a possible confounding. It is not clear whether the obtained results are due to relative group status or, alternatively, to relative group size. Graduate students are lower numerically as a group than undergraduate students. It is likely that graduate student stimulus persons attracted more attention and, consequently, information pertaining to them was more individuated, because of the relatively infrequent presence of this group in the everyday life of the average undergraduate student. This reasoning is consistent with research demonstrating that, in intergroup contexts occupied by a numerical minority and a numerical majority, the former emerges as the perceptual figural focus whereas the latter recedes into a perceptual background (Mullen, 1991).

In real life, numerical majorities also tend to be the high-status groups (Farley, 1982). However, there are several exceptions to this rule, whereby the high-status groups are numerical minorities (e.g. models, Olympic medal winners, Supreme Court judges, the wealthy). Thus, relative group size needs to be unconfounded from relative group status. Experiment 2 attempted to do this. Two groups were selected that are approximately equal in relative group size but are likely unequal in relative group status. These groups were sophomores and freshmen. Participants in all pilot studies and the experiment were enrolled in introductory psychology classes at the University of North Carolina at Chapel Hill (UNC). The two experimenters were seniors, although they did not reveal their status to participants.

A pilot study was conducted to test whether sophomores and freshmen are relative status groups. Thirty female sophomores and 30 female freshmen responded to the following question: 'In general, which of the two groups, freshmen or sophomores, is of higher status?' (5= freshmen are of higher status, 0= freshmen and sophomores are of equal status, 5= sophomores are of higher status). Sophomores perceived the ingroup as the high-status group. Their mean rating ( $M=2.77$ ) was significantly different from the scale midpoint,  $t(29)=9.94$ ,  $p<0.004$ . However, freshmen perceived the outgroup as the high-status group. Their mean rating ( $M= 1.13$ ) was significantly different from the scale midpoint,  $t(29)=3.17$ ,  $p <0.004$ . These results demonstrated that sophomores and freshmen are relative status groups.

## Method

The attribute categories used in this experiment were based on an earlier pilot study conducted at the Ohio State University. In that study, 10 sophomores and 10 freshmen had generated stereotypic attributes for both groups. The high-frequency attributes were grouped under six categories. The author of this article and

two research assistants edited these attributes and supplemented them with several new ones that were relevant to the UNC student population. The result was 36 attributes, 18 referring to sophomores and 18 referring to freshpersons. A pilot study tested the group-stereotypicality of these attributes. Eighteen female sophomores and 18 female freshpersons rated the 36 attributes (presented in random order) on the following scale: 1=strongly typical of UNC freshpersons; 2=moderately typical of UNC freshpersons; 3 = slightly typical of UNC freshpersons; 4= typical of neither UNC freshpersons nor UNC sophomores; 5= slightly typical of UNC sophomores; 6=moderately typical of UNC sophomores; 7=strongly typical of UNC sophomores. Sophomore attributes ( $M=5.00$ ) were perceived as stereotypic of sophomores, as a  $t$ -testing for difference against the scale midpoint revealed,  $t(35)=9.23$ ,  $p < 0.0001$ . Also, freshperson attributes ( $M=2.92$ ) were perceived as stereotypic of freshpersons,  $t(35)=-17.51$ ,  $p < 0.001$ . The two means were significantly different from each other,  $F(1,34)=261.08$ ,  $p < 0.0001$ . Contrary to the corresponding pilot study of Experiment 1, the interaction was not significant,  $F(1,34)=0.76 < 0.39$ , indicating symmetrical perceptions of typicality.

The 36 attributes were incorporated into two replication sets (Table 4). Each replication set contained 18 attributes, and each stimulus person was described by three attributes. The 18 attributes were randomly assigned to the stimulus persons within each category and set. The attributes within each stimulus person were randomized, and the order was kept fixed. All stimulus persons were female. Replication set A described the three freshperson stimulus persons using the attribute categories 'behaviours in the library', 'hometown', and 'relationship with family', and described the three sophomore stimulus persons using the attribute categories 'behaviours in the classroom', 'social relationships' and 'place of living'. Replication set B reversed the categories for sophomore and freshperson stimulus persons.

Participants were 56 female sophomores and 56 female freshpersons. The experimental design, dependent measures and procedure were identical to those of Experiment 1, with one exception: the time allotted for the recall of information about each group was 2.5 (instead of 5) min. This change was made because less information was available to participants in Experiment 2 compared to Experiment 1.

## Results and discussion

### *Clustering*

The DPE was replicated. Participants tended to process ingroup information around person rather than attribute categories, but tended to process outgroup information around attribute rather than person categories,  $F(1,104)=3.29$ ,  $p < 0.072$  (Table 5).

More importantly, the crucial interaction among stimulus group membership, organizational category and participant status was significant,  $F(1,104)=78.72$ ,  $p < 0.0001$ . The stimulus group membership  $\times$  organizational category interaction was examined separately for high- and low-status participants. The DPE was present in the case of high-status participants,  $F(1,52)=82.28$ ,  $p < 0.0001$ . They processed ingroup information around person rather than attribute categories ( $t(55)=6.07$ ,  $p < 0.0001$ ), but processed outgroup information around attribute rather than person

Table 4. Stimulus replication sets used in Experiment 2

	Behavior in the library	Hometown	Relationships with family	Behaviour in the classroom	Social relationships	Place of living
Stimulus replications set A						
Freshpersons						
Alesia	Awe of size of library	Pittsboro	Visits family every weekend			
Tonya	Cannot find magazine room	Garner	Telephones family often			
Claire	Tries a different reading room each time she visits library	Sanford	Thinks of family all the time			
Sophomores Paula				Whispers to classmates	Is amusing	Cobb Dorm
Miriam				Occasionally skips classes	Is impolite	Stacey Dorm
Leslie				Interrupts professors	Is questioning	New East Dorm
Stimulus replications set B						
Freshpersons						
Paula				Rarely skips classes	Is socially clumsy	Morrison Dorm
Miriam				Is attentive	Is polite	Hinton James Dorm
Leslie				Is afraid to ask questions	Is gullible	Erringhaus Dorm
Sophomores Alesia	Pesters librarian for information	Asheville	Rarely participates in family activities			
Tonya	Spreads her books on the tables	Charlotte	Rarely telephones family			
Claire	Has a reading carrel reserved for her	Weilmington	Rarely thnks of family			

Table 5. Person and attribute ARC-scores as a function of stimulus group membership and

	Person ARC-scores	Attribute ARC-scores
I. Overall ARC-scores		
Ingroup	0.321*	0.234*
Outgroup	0.266*	0.311*
11. ARC-scores	by high-status participants	
contributed	0.531*	0.093*
Outgroup	0.129*	0.476*
11. ARC-scores	by low-status participants	
contributed	0.112*	0.374*
Outgroup	0.403*	0.147*

*Note.* An asterisk indicates that the ARC-score was significantly different from the value of zero.

categories ( $t(55) = -6.79$ ,  $p < 0.0001$ ). However, the DPE was reversed in the case of low-status participants  $F(1,52) = 19.07$ ,  $p < 0.0001$ . They processed ingroup information by attribute rather than person categories ( $t(55) = -4.81$ ,  $p < 0.0001$ ), but processed outgroup information by person rather than attribute categories ( $t(55) = 2.47$ ,  $p < 0.017$ ). High-status participants individuated the ingroup, whereas low-status participants individuated the outgroup. As in Experiment 1, relative group status moderated the DPE.

### *Name-matching*

*Within-group versus between-group confusions* Participants made fewer between-group than within-group confusions,  $F(1,104) = 50.86$ ,  $p < 0.0001$ . This effect held for both high-status participants ( $F(1,52) = 17.78$ ,  $p < 0.0001$ ) and low-status participants ( $F(1,52) = 35.68$ ,  $p < 0.0001$ ), confusion type  $\times$  participant status interaction  $F(1,104) = 0.75$ ,  $p < 0.39$ . Participants structured their stimulus environment along the freshman/sophomore student group membership (Table 6).

*Ingroup versus outgroup confusions* The stimulus group membership  $\times$  participant status interaction was significant,  $F(1,104) = 30.35$ ,  $p < 0.0001$ . High-status participants made fewer ingroup than outgroup confusions,  $F(1,52) = 8.08$ ,  $p < 0.006$ , whereas low-status participants made more ingroup than outgroup confusions,  $F(1,104) = 25.85$ ,  $p < 0.0001$ . High-status participants individuated the ingroup, whereas low-status participants individuated the outgroup, thus validating the moderational role of relative group status. Finally, significant stimulus group membership  $\times$  confusion type interactions for both high-status participants ( $F(1,52) = 20.03$ ,  $p < 0.0001$ ) and low-status participants ( $F(1,52) = 55.37$ ,  $p < 0.0001$ ) showed that the difference between ingroup and outgroup confusions was due to the within-group confusions.

Table 6. Confusions as a function of confusion type and group membership in Experiment 2

Confusion	Group membership		
	Ingroup	Outgroup	Mean
I. Overall confusions			
Within-group	2.61	2.43	2.52
Between-group	1.54	1.51	1.53
Mean	2.08	1.97	
II. Confusions made by high-status participants			
Within-group	2.02	3.05	2.54
Between-group	1.73	1.56	1.65
Mean	1.88	2.31	
III. Confusions made by low-status participants			
Within-group	3.30	1.80	2.55
Between-group	1.36	1.47	1.42
Mean	2.33	1.64	

### *Number of attributes recalled*

The stimulus group membership  $\times$  participant status interaction was not significant,  $F(1,104) = 1.1$ ,  $p < 0.30$ . Examination of the stimulus group membership main effect for high- and low-status participants revealed that high-status participants recalled an average of 6.57 ingroup and 6.59 outgroup attributes,  $F(1,52) = 0.01$ ,  $p < 0.92$ , and low-status participants recalled an average of 6.39 ingroup and 6.14 outgroup attributes,  $F(1,52) = 1.95$ ,  $p < 0.17$ .

## EXPERIMENT 3

Moderation of the DPE by relative group status (a phenomenon labelled the *status effect*) is predicated on the stimulus group information being stereotype-consistent. This predicate has not been tested. Is stereotype-consistent information necessary for obtaining the status effect? Does not a simple labelling of groups (i.e. the ingroup and outgroup label) suffice to produce the status effect even in the presence of stereotype-inconsistent information? Experiment 3 sought to unconfound group labelling from stimulus information content by using only stereotype-inconsistent information. The same stimulus information was used in Experiment 3 as in Experiment 2. However, the labels were switched. The stimulus information that

<sup>3</sup>A total of 134 students participated in this experiment. Twenty-two were excluded from the data analyses, because they provided at least one invalid ARC-score. Supplementary analyses were conducted, similar to those of Experiment 1, to find out if attrition biased the results. Substituting the missing ARC-score(s) with the corresponding cell mean value(s) increased the number of participants to 131. Using the first recall order only resulted in 129 participants. The supplementary analyses yielded stronger results in the same direction as the reported analyses. There is no evidence that participant attrition biased the results of Experiment 2.

described sophomore stimulus persons in Experiment 2 was now presented as describing freshpersons, and vice versa.

If Experiment 3 replicates the results of Experiment 2, this would negate the necessity of stereotype-consistent information. A group label suffices to produce the status effect regardless of stimulus information content. However, a different results pattern is possible. The status effect may not be obtained (thus failing to replicate part of Experiment 2), but the DPE may be obtained for both high- and low-status participants. This finding would imply that stereotype-inconsistent information is sufficient to produce the status effect. Labelling of the ingroup and the outgroup is not necessary. Finally, another pattern of results is possible: null findings. Such results would be consistent with the predicate that, for the status effect to be obtained, stereotype-consistent information is necessary.

**Method**

Participants were 40 UNC female sophomores and 40 UNC female freshpersons. The stimulus materials were stereotype-inconsistent. That is, they were identical to those of Experiment 2 with the exception that sophomore attributes described freshpersons, and freshperson attributes described sophomores. The experimental design, dependent measures and procedure were identical to those of Experiment 2.

**Results and discussion**

Clustering

Contrary to the previous two experiments, the DPE was not replicated. Participants were equally likely to use person and attribute categories for the processing of ingroup and outgroup information,  $F(1,72) = 1.32, p < 0.25$  (Table 7).

The stimulus group membership x organizational category x participant status interaction was not significant either,  $F(1,72)=0.02, p < 0.88$ . Neither high-status participants ( $F[1.36]=0.38, p < 0.54$ ) nor low-status participants ( $F(1,36)=1.25,$

Table 7 Person and attribute ARC-scores as a function of stimulus group membership and particip[ant stauts in Experiment 3

	Person ARC-scores	Attribute ARC-scores
I. Overall ARC-scores		
Ingroup	0.147*	0.169*
Outgroup	0.155*	0.124*
II. ARC-scores contributed by high-status participants		
Ingroup	0.146*	0.170*
Outgroup	0.133*	0.110*
II. ARC-scores contributed by low-status participants		
Ingroup	0.147*	0.168*
Outgroup	0.177*	0.137*

Note. An asterisk indicates that the ARC-score was significantly different from the value of zero.

$p < 0.27$ ) processed group information differentially. The status effect was not replicated. Stereotype-consistent information is necessary for the status effect to occur.

### *Name-matching*

*Within-group versus between-group confusions* Participants made an approximately equal number of between-group and within-group confusions, confusion type x participant status interaction  $F(1,72) = 0.44$ ,  $p < 0.51$  (for high-status participants:  $F(1,36) = 0.93$ ,  $p < 0.34$ ; for low-status participants:  $F(1,36) = 0.21$ ,  $p < 0.65$ ) (Table 8). Unlike the previous two experiments, participants did not structure their stimulus field on the basis of group membership. The stereotype-inconsistent information created categorization problems.

*Ingroup versus outgroup confusions.* In contrast to the previous two experiments, the stimulus group membership x participant status interaction was not significant,  $F(1,72) = 0.56$ ,  $p < 0.46$ . Neither high-status participants ( $F(1,36) = 0.86$ ,  $p < 0.36$ ) nor low-status participants ( $F(1,36) = 0.02$ ,  $p < 0.89$ ) individuated one group more than the other. Again, stereotype-consistent information is necessary for the production of the status effect. The stimulus group membership x confusion type interaction was not significant either,  $F(1,72) = 0.092$ ,  $p < 0.76$ .

### *Number of attributes recalled*

The stimulus group membership x participant status interaction was not significant,  $F(1,72) = 1.56$ ,  $p < 0.22$ . High-status participants recalled an average of 6.05 ingroup and 6.33 outgroup attributes,  $F(1,36) = 1.82$ ,  $p < 0.19$ , and low-status participants recalled an average of 6.85 ingroup and 6.75 outgroup attributes,  $F(1,36) = 0.21$ ,  $p < 0.65$ .

Table 8. Confusions as a function of confusion type and group membership in Experiment 3

Confusion type	Group membership		
	Ingroup	Outgroup	Mean
I. Overall confusions			
Within-group	1.95	2.08	2.02
Between-group	1.98	2.04	2.01
Mean	1.97	2.06	
II. Confusions made by high-status- participants			
Within-group	1.65	1.95	1.80
Between-group	1.88	1.90	1.89
Mean	1.27	1.93	
III. Confusions made by low-status			
Within-group	2.25	2.20	2.23
Between-group	2.08	2.18	2.13
Mean	2.17	2.19	

## GENERAL DISCUSSION

Experiments 1 and 2 simulated an intergroup perception setting involving two permeable-boundary and relative status groups. Graduate students and sophomores comprised the two high-status groups, whereas undergraduate students and freshmen comprised the two low-status groups. Clustering and confusion indices established relative group status as a moderator of the DPE. The DPE was upheld for high-status participants; they individuated cognitively the ingroup more than the outgroup. However, the DPE was reversed for low-status participants; they individuated cognitively the outgroup more than the ingroup. Experiment 3 suggested that, for the DPE effect and its reversal (i.e. the status effect) to occur, the groups need to be described with stereotype-consistent information.

The purpose of this research was to establish relative group status as a moderator of the DPE rather than test directly the anticipatory socialization perspective, reference group theory, and social identity theory. Nevertheless, the findings were consistent with predictions derived from these theories. Low-status perceivers individuated the outgroup more than the ingroup because they allocated disproportionate attention to the outgroup relative to the ingroup. This increased attention allotted to the outgroup is due to any of three reasons. First, according to the anticipatory socialization perspective, the attributes of the high-status outgroup had high emulatory value for low-status perceivers. Second, according to reference group theory, the high-status outgroup had higher informational value for low-status perceivers. Finally, consistently with social identity theory, the high-status outgroup was a positively-valued group with whom low-status perceivers wished to identify. On the other hand, high-status perceivers individuated the ingroup more than the outgroup, because they paid more attention to the ingroup. In fact, there was no reason for high-status perceivers to pay disproportionate attention to the outgroup, because high-status perceivers did not anticipate becoming members of the low-status group.

The assumption that attention (i.e. motivation to process and judgmental weights) was the mechanism behind the obtained effects is consistent with the work of Fiske and her colleagues on the consequences of power upon stereotyping. Fiske (1993, p.623) defined power as 'asymmetrical control over another person's outcomes'. Fiske and colleagues found that perceivers pay attention to those who control their outcomes, attempt to construct an individuated profile of the outcome controllers probably in hopes of predicting their future behaviour—and form less stereotypic and more idiosyncratic impressions of the outcome controllers (Erber & Fiske, 1984; Neuberg & Fiske, 1987; for a review, see Depret & Fiske, 1993). Also, outcome controllers pay less attention to people whose outcomes they control (Fiske, 1993).

Undoubtedly, there are several differences between the present research and the research of Fiske and colleagues. This research focused on intergroup processes, whereas their research typically focuses on interpersonal processes. This research was concerned with relative status groups rather than relative power groups. Finally, this research was concerned with the case of permeable-boundary groups where the low-status group members desire to join the high-status outgroup rather than with the case of low-status groups whose outcomes are controlled by high-status groups.

Nevertheless, the parallels between their work and the present work are worth drawing.

This investigation has shown that low-status perceivers are more likely to individuate the outgroup, whereas high-status perceivers are more likely to individuate the ingroup. Past research has reported that members of subordinate groups are likely to individuate their ingroup less, and also be individuated by the dominant group less (Snodgrass, 1985; Lorenzi-Cioldi, Eagly, & Stewart, 1995; see also Doosje, Ellemers, & Spears, 1995, Tables 3-5, for directionally consistent findings). This investigation indicates that the above phenomenon is present *even in the absence* of subordination. Mere expectancy to join a high-status outgroup is sufficient to create spontaneous cognitive individuation of that group. Alternatively, high-status groups shy spontaneously from cognitively individuating low-status groups *even in situations* where no subordination or outcome-control is involved.

Recently, there has been a renewed interest in the ways in which social and motivational factors influence cognition (Higgins & Sorrentino, 1990; Levine, Resnick & Higgins, 1993). Research has focused on how socially activated goals influence the processing of social information (Fiske & Neuberg, 1990; Hilton & Darley, 1991). The present findings contribute to this empirical wave by demonstrating that perceivers' naturally instigated goals (i.e. social structure) can have a strong impact on social information processing (i.e. stereotyping). In so doing, this investigation has reaffirmed the significance of the pragmatic goals that perceivers bring into intergroup situations. Indeed, 'Social thinking is for doing' (Fiske, 1992, p.877).

## REFERENCES

- Carpenter, S. (1993). Organization of ingroup and outgroup *information*: The influence of gender-role orientation. *Social Cognition*, *11*, 70-91.
- Depret, E. F., & Fiske, S. T. (1993). Social cognition and *power*: Some cognitive consequences of social structure as a source of control deprivation. In G. Weary, F. Gleicher, & K. Marsh (Eds) *Control motivation and social cognition*. New York: Springer-Verlag.
- Doosje, B., Fliemers, N., & Spears, R. (1995). Perceived intragroup variability as a function of group status and identification. *Journal of Experimental Social Psychology*, *31*, 410-436.
- Ellemers, N. (1993). The influence of socio-structural variables on identity management strategies. In W. Stroebe, & M. Hewstone (Eds), *European Review of Social Psychology* (Vol.4, pp. 27-57). Chichester: John Wiley & Sons.
- Erber, R., & Fiske, S. T. (1984). Outcome dependency and attention to inconsistent information. *Journal of Personality and Social Psychology*, *47*, 709-726.
- Fancy, I. (1982). *Majority-minority relations*. Englewood Cliffs, NJ: Prentice-Hall.
- Fiske, S. T. (1980). Attention and weight in person perception: The impact of negative and extreme behavior. *Journal of Personality and Social Psychology*, *38*, 889-906.
- Fiske, S. T. (1992). Thinking is for doing: Portraits of social cognition from daguerreotype to laserphoto. *Journal of Personality and Social Psychology*, *63*, 877-889.
- Fiske, S. T. (1993). Controlling other people: The impact of power on stereotypes. *American Psychologist*, *48*, 621-628.
- Fiske, S. T., & Neuberg, S. L. (1990). A continuum of impression formation, from category-based to individuation processes: Influences of information and motivation on attention and interpretation. *Advances in Experimental Social Psychology*, *23*, 1-74.

- Giles, H., Bourhis, R. Y., & Taylor, D. (1977). Towards a theory of language in ethnic group relations. In H. Giles (Ed.), *Language, ethnicity and intergroup relations*. London: Academic Press.
- Higgins, E.T., & Sorrentino, R. M. (Eds) (1990). *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2). New York:
- Hilton, J. L., & Darley, J. M. (1991). The effects of interaction goals on person perception. *Advances in Experimental Social Psychology*, 27, 236-267.
- Hyman, H. H., & Singer, E. (Eds) (1968). *Readings in reference group theory and research*. New York: Free Press.
- Keppel, G. (1991). *Design and analysis: A researcher's handbook*. Englewood Cliffs, NJ: Prentice-Hall.
- Levine, J. M., Resnick, L. B., & Higgins, E. T. (1993). Social foundations of cognition. *Annual Review of Psychology*, 44, 585-612.
- Merton, R. (1957). *Social theory and social structure*. New York: Free Press.
- Mullen, R. (1991). Group composition, salience, and cognition representations: The phenomenology of being in a group. *Journal of Experimental Social Psychology*, 27, 103-122.
- Mullen, B., Brown, R., & Smith, C. (1992). Ingroup bias as a function of salience, relevance, and status: An integration. *European Journal of Social Psychology*, 22, 103-122.
- Mullen, B., & Hu, L. T. (1989). Perceptions of ingroup and outgroup variability: A meta-analytic integration. *Basic and Applied Social Psychology*, 10, 233-252.
- Mummendey, A., Simon, B., Diene, C., Grunert, M., Hanger, G., Kessler, S., Lettgen, S., & Schafcrhof, S. (1992). Categorization is not enough: Intergroup discrimination in negative outcome allocation. *Journal of Experimental Social Psychology*, 28, 125-144.
- Neuberg, S. L., & Fiske, S. T. (1987). Motivational influences on impression formation: Outcome dependency, accuracy-driven attention, and individuating processes. *Journal of Personality and Social Psychology*, 53, 431-444.
- Newcomb, T. (1965). Attitude development as a function of reference groups: The Bennington study. In H. Proshansky, & B. Seidenberg (Eds), *Basic studies in social psychology* (pp. 215-230). New York: Holt, Rinehart, & Winston.
- Oakes, P. (1987). The salience of social categories. In J. C. Turner (Ed.), *Rediscovering the social group: A self-categorization theory* (pp. 117-141). Oxford: Basil Blackwell.
- Ostrom, T. M., Carpenter, S. L., Sedikides, C., & Li, F. (1993). Differential processing of in-group and out-group information. *Journal of Personality and Social Psychology* 64, 21-34.
- Pryor, J. B., & Ostrom, T. M. (1981). The cognitive organization of social information: A converging-operations approach. *Journal of Personality and Social Psychology*, 41, 628-641.
- Quattrone, G. A. (1986). On the perception of a group's variability. In S. Worchel, & W. Austin (Eds), *The psychology of intergroup relations* (2nd ed., pp. 25-48). Chicago: Nelson-Hall.
- Roener, A.L., Thompson, C. P., & Brown, S. C. (1971). Comparison of measures for the estimation of clustering in free recall. *Psychological Bulletin*, 76, 45-48.
- Sachdev, I., & Bourhis, R. Y. (1987). Status differentials and intergroup behaviour. *European Journal of Social Psychology*, 17, 277-293.
- Skvoretz, J. (1988). Models of participation in status-differentiated groups. *Social Psychology Quarterly*, 51, 43-57.
- Snodgrass, S. E. (1985). Women's intuition: The effect of subordinate role on interpersonal sensitivity. *Journal of Personality and Social Psychology*, 49, 146-155.
- Srull, T. K. (1984). Methodological techniques for the study of person memory and social cognition. In R. S. Wyer, & T. K. Srull (Eds), *Handbook of social cognition*, (Vol.2, pp. 272). Hillsdale, NJ: Erlbaum.
- Tajfel, H. (Ed.) (1982). *Social identity and intergroup relations*. Cambridge: Cambridge University Press.
- Tajfel, H., Flament, C., Billig, M., & Bundy, R. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology*, 1, 49-175.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds), *The social psychology of intergroup relations* (pp.33-47). Monterey, CA: Brooks/Cole.

- Taylor, S. E., Fiske, S. T., Etcoff, N. L., & Raderman, A. I. (1978). Categorical and contextual bases of person memory stereotyping. *Journal of Personality and Social Psychology*, 36, 778-793.
- Thornton, R., & Nardi, P. M. (1975). The dynamics of role acquisition. *American Journal Sociology*, 80, 870-885.
- Turner, I. C. (1978). Social categorization and social discrimination in the minimal group paradigm. In H. Tajfel (Ed.), *Differentiation between social groups* (pp. 101-168). London: Academic Press.