The Effects of Multiple Social Categories on Stereotyping

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Abstract

This study examined some of the cognitive processes underlying stereotyping, as well as the effects of multiple social categories in impression formation. Phase 1 of the study assessed stereotypes of males, females, 20 year olds, 70 year olds, French Canadians and English Canadians in a sample of 60 undergraduates. The results demonstrated that stereotype judgements were relatively automatic in that they were made more quickly than non-stereotype judgements. Phase 2 of the study examined the impressions formed of "individuals" who were simultaneously identified in terms of gender, age and ethnicity. These individuals tended to be perceived in terms of their gender and age; moreover, this effect was more pronounced on stereotype traits than non-stereotype traits. Phase 3 examined subjects' memory for the individuals, and it was found that memory was better for age and gender than for ethnicity, and that speed for making such judgements followed the same pattern. While the results support the view that individuals are perceived in terms of stereotypes, they suggest that certain salient categories will be more influential in a particular context.

Résumé

Cette étude se penche sur certains processus cognitifs qui sous-tendent les stéréotypes ainsi que sur les effets de catégories sociales multiples dans la formation des impressions. Dans une première étape, l'étude a évalué les stéréotypes chez des sujets masculins et féminins, âgés de 20 et de 70 ans, Canadiens et Canadiennes francophones et anglophones dans un échantillon de 60 étudiants de premier cycle. Les résultats révèlent que les jugements par stéréotypes sont relativement automatiques en ce sens qu'ils se forment plus rapidement que les jugements non fondés sur les stéréotypes. Dans une seconde étape, on a étudié les impressions formées sur des «individus» identifiés simultanément en fonction de leur sexe, de leur âge et de leur appartenance ethnique. Ces individus étaient surtout perçus en fonction de leur sexe et de leur âge; de plus, cet effet était davantage prononcé pour les traits psychologiques stéréotypés que pour les traits non stéréotypés. Une troisième étape a consisté à examiner le souvenir que conservaient les sujets des individus. On a constaté que le souvenir était plus marqué pour les

caractéristiques d'âge et de sexe que pour celles d'ethnicité, et que la rapidité de ces réflexes était conforme à ce modèle. Bien que les résultats concordent avec la notion que les individus sont perçus en fonction de stéréotypes, ils laissent néanmoins entendre que certaines catégories d'éléments cognitifs importants auront une plus grande influence dans un contexte particulier.

The stereotype is one of the central concepts in the study of intergroup relations (cf. Taylor & Moghaddam, 1994) and is seen as having both cognitive and motivational implications (Ashmore & DelBoca, 1981; Fiske & Neuberg, 1990). There are, furthermore, at least four ways of characterizing stereotypes (cf., Gardner, 1994). On the one hand, stereotypes can be seen as "a set of beliefs about the personal attributes of a group of people" (Ashmore & DelBoca, 1981, p. 161). Note that these beliefs are not limited in any particular way, thus in this case stereotype is equivalent to belief. A second approach, based on the tradition of Katz and Braly (1933), defines a stereotype as "a collection of trait-names upon which a large percentage of people agree as appropriate for describing some class of individuals" (Vinacke, 1957, p. 229). This definition focusses on consensus as a defining feature of the stereotype. A third viewpoint holds that a stereotype represents "a generalization made about an ethnic group, concerning trait attribution, which is considered to be unjustified by an observer" (Brigham, 1971, p. 31). Finally, McCauley and Stitt (1978) propose that "stereotypes are best understood as predictions that distinguish the stereotyped group from others" (p. 935).

Gardner (1994) notes that, despite the obvious differences among these definitions, there are two areas of similarity. The first is that when attention is directed toward the individual's "stereotype", all four definitions agree that the beliefs are held by the individual. The second point is that when attention is directed toward "the stereotype" as opposed to an individual's stereotype, some form of consensus is always implied. Obviously the Katz and Braly (1933) methodology implies consensus, but so too do the Ashmore and DelBoca (1981), Brigham (1971), and McCauley and Stitt (1978) characterizations. Whatever their conceptual approach, when researchers conclude that a given attribute is stereotypical of a group, they base their conclusion on summary statistics, and thus consensus is implied.

Gardner, Lalonde, Nero and Young (1988) have demonstrated that the different procedures for measuring stereotypes can result in different characterizations of the stereotype about a group, depending upon whether a group or individual perspective is taken. Moreover, individual difference scores based on these different measures of stereotypes showed different correlations with other variables such as contact with the group, attitudes toward the group, etc. Such results suggest that the way researchers measure a stereotype can influence conclusions they draw about the roles played by

stereotypes in intergroup relations. Gardner (1994) argues that, by focussing attention on stereotypes as consensual beliefs, greater information about social behaviour is obtained because such beliefs represent social reality. Beliefs that are not consensual represent only the individual's view of the world, and thus are of less social importance.

Stereotypes demonstrate effects similar to those observed with schemas (for general discussions see Fiske & Taylor, 1991; Mackie & Hamilton, 1993), and some research demonstrates that processing of stereotype attributes is different than for non-stereotype attributes. For example, Cohen (1983) studied the relation between the association of attributes with a given category (defined in terms of consensual judgements) and latency of response to items, asking her respondents to judge if given attributes characterized typical members of an occupational category. She found that latencies decreased for "yes" and increased for "no" responses as association increased, while confidence in the judgements was higher for "yes" and lower for "no" responses. In a similar study, Dovidio, Evans and Tyler (1986) used a priming methodology and found that participants responded faster to traits stereotypic (i.e., consensual) of whites in response to the "white" prime and faster to traits stereotypic of blacks in response to the "black" prime. Finally, Lalonde and Gardner (1989) had respondents rate the extent to which bipolar traits were applicable to each of a number of ethnic groups. The traits were classified as stereotypical (consensual) or not for each ethnic group by determining the extent to which the mean ratings were polarized toward one of the bipolar traits defining a scale. The results of both studies suggested that, in general, stereotype judgements had faster latencies than non-stereotype judgements. The results of these three different types of studies suggest that stereotype judgements are more automatic than non-stereotype ones.

These types of results can be attributed to what Cohen (1983) refers to as the differential accessibility of stereotypic attributes. Because they are encountered more frequently, stereotype judgements are more readily available for use in social encounters. This may be linked to the outgroup homogeneity effect (Park & Rothbart, 1982; Quattrone & Jones, 1980) that suggests that other groups will be seen as having less diversity and are therefore judged more quickly and uniformly. Further, social identity theory suggests that people seek to establish a social identity by making categorizations that positively distinguish their own group from other groups (see Taylor & Moghaddam, 1994). Clearly, people tend to use categories when forming impressions of each other.

The process of forming an impression of a target person begins with an act of categorization (Fiske & Neuberg, 1990), and stereotypic processing begins with categorization (Smith & Zarate, 1992). Jean Paul Sartre's example of a Jewish furrier (cited in Rothbart, 1981, and Smith & Zarate, 1992) being stereotyped as a Jew rather than as a furrier or a Jewish furrier, shows the

nature of the categorization process. Any stimulus person can be categorized on a number of dimensions, including age, sex, and ethnicity and stereotypes associated with these distinctive categories have been studied for years. It must be noted, however, that persons always embody a combination of such categories; each of us belongs to multiple groups simultaneously.

The issue of multiple group membership has only recently gained prominence in the literature on social categorization (Smith & Zarate, 1992; Stangor, Lynch, Duan & Glass, 1992). Thus, while it is possible to assess the stereotypes of very broadly defined groups (like males or females), we can also study more narrowly defined groups (e.g., young women). Stangor et al. (1992) argue, for example, that individuals appear to be categorized on the basis of subtypes that combine a small number of such salient features. For example, males can be contrasted with females but younger males can be contrasted with older males, younger females, and older females (see also Smith & Zarate, 1992).

Evidence for subtyping in person perception has been somewhat mixed (Deaux, Winton, Crowley & Lewis, 1985; Stangor et al., 1992; Taylor, 1981) and it has been suggested that stereotypes may occur on more than one level (Fiske & Neuberg, 1990; Smith & Zarate, 1992). The most specific subtype is the individual; any given individual can be considered a unique combination of categories such as age, gender, ethnicity, hair style, height, etc. When we perceive an individual, however, we are not necessarily aware of all of the categories into which that individual can be categorized. We are most likely to be aware of a small number of obvious characteristics, such as age, sex, and possibly ethnicity. Thus, in social situations involving unfamiliar others, inferences about persons can be reduced to a small number of relevant categories.

The present study makes use of an alternative to the Katz and Braly (1933) procedure but nonetheless defines stereotypes consensually. The stereotype differential (see Gardner et al., 1988) uses a semantic differential format (Osgood, Suci, & Tannenbaum, 1957) to rate various groups on a series of bipolar adjectival scales. The stereotype of any group is defined in terms of those attributes defining the end point toward which the subjects' ratings tend to be polarized.

The stereotype differential is ideally suited to the present study because it defines stereotypes in terms of consensus and it can be used to assess stereotypes about either broad categories of people (e.g., males) or an individual belonging to multiple social categories (e.g., 70 year old French Canadian male). Previous work with this procedure has concentrated on ethnic stereotypes, therefore, we will consider its relevance to stereotyping based on other types of groupings such as age and sex, as well. In addition to the ratings of broad-based groups, more specific target "persons" will be defined as a combination along three dimensions, age, sex, and ethnicity. We will also examine the influence of the stereotypes associated with each of the

three general social categories on the perception of specific target persons. Finally, the subjects' memory for the target persons defined in the study will be examined for speed and accuracy.

METHOD
Participants
Respondents in this study were 30 male and 30 female students in introductory Psychology who participated in the study for course credit. All of the participants were English speaking Canadians between the ages of 17 and 29.

Procedure
Respondents were tested individually with all materials presented by means of a microcomputer equipped with a timer card with a one-millisecond resolution. Instructions were presented on the computer monitor, responses were entered on the computer keyboard, and responses and latencies were recorded by the computer. Participants were told that they would rate categories of people as well as individuals, following which they would be tested on their memory for the individuals. After reading that they would be asked to rate each of six categories of people (males, females, 20 year olds, 70 year olds, English Canadians, and French Canadians) on 12 stereotype differential scales (see Table 1), they were presented with a category label (e.g., males) and one 7-point stereotype differential scale (e.g., polite-impolite). Seventy-two category/scale combinations were presented in a random order.

After this phase was completed, participants were introduced to the "individuals". This consisted of a label (e.g., Person 1) with a description (e.g., male French Canadian 20 year old). A total of eight "stimulus" people were presented, representing the combinations of the three categories, sex, ethnicity and age. Respondents rated each "person" on four stereotype differential scales from the set of 12 before the next person was presented. The set of eight persons was presented in the same order three times, and each was rated on a different fixed random order of four scales, so that at the end of this phase, subjects had rated each person on all 12 scales. Also, each time a person was presented, the order of elements in the description was varied (e.g., female French Canadian 20 year old; French Canadian 20 year old female; 20 year old female French Canadian) so that each element appeared in each position once.

The final phase involved a test of memory of the persons. Respondents were presented with the persons (e.g., Person 4, Person 1, etc.) and were asked to identify the sex, age or ethnicity. Twenty-four (i.e., 8 persons × 3 identifications) presentations were made in a fixed random order, and the subjects' responses and latencies of responses were recorded.

Two different random orders were used, and investigation revealed no

TABLE 1
t-ratios for the six groups on the 12 scales

Scales	Males	Females	20 year olds	70 year olds	English Canadians	French Canadians
Polite-Impolite	.11	-8.82**	.94	-6.63**	-5.15**	.10
Religious-Irreligious	4.20**	-2.43*	6.96**	-11.87**	-.39	-7.40**
Industrious-Lazy	-5.58**	-6.46**	-3.70**	-.92	-6.01**	-1.74
Quiet-Talkative	5.77**	8.35**	10.98**	.93	4.40**	8.30**
Unemotional-Emotional	-1.46	12.66**	4.58**	10.79**	.98	7.18**
Unselfish-Selfish	5.41**	.00	8.08**	-3.81**	1.49	1.54
Rugged-Delicate	-12.22**	7.71**	-10.27**	9.79**	-1.99	-6.19**
Patient-Impatient	6.27**	-.52	8.28**	-.63	2.38*	4.20**
Idealistic-Realistic	4.83**	-2.99**	-2.71**	2.44*	1.45	-.45
Easy-going-Serious	-4.07**	3.56**	-8.11**	1.43	-2.27*	.10
Artistic-Inartistic	-.24	-10.43**	-4.07**	.49	-2.40*	-5.32**
Modern-Traditional	-2.13*	-2.21*	-16.79**	14.49**	-6.63**	7.02**
Mean Absolute t	4.36	5.51	7.12	5.35	2.96	4.13

* $p < .05$
** $p < .01$

significant order effects, so order was not included in any of the analyses presented here.

<div align="center">RESULTS</div>

There are five different sets of results in this investigation. The first involves the *stereotypes* about the six categories of individuals (e.g., females, French Canadians, etc.). The second concerns the *latency* associated with the judgements made about each of these groups on those traits that were included in the stereotype and those that were not. The third considers the similarity of the target "persons" to the categories themselves on traits stereotypic of the category as well as not. The fourth focusses on the *latency* of stereotype vs non-stereotype judgements of individuals. The fifth deals with *memory* for the categories underlying the target persons.

<div align="center">*Stereotypes About the Six Groups*</div>

The stereotypes about each of the six groups were determined by assessing the direction and extent of polarization of the ratings of each of the six categories on each of the 12 scales. This polarization was indexed by means of the single sample *t*-ratio:

$$t = \frac{(M - \mu)}{S/\sqrt{n}}$$

where M is the mean rating, S is the standard deviation, n is the sample size (60), and μ is the neutral value (4) on a seven point scale (cf., Gardner, Lalonde, Nero & Young, 1988).

The *t*-ratio can be assessed for significance with $(n - 1) = 59$ degrees of freedom. Table 1 presents the scales and the *t*-ratios for each of the six groups. A significant *t*-ratio indicates that an attribute at one or the other end of the scale was stereotypic of the group in question, with a negative *t*-ratio indicating the attribute on the left. Thus, the stereotype for males is comprised of the attributes rugged, impatient, talkative, industrious, selfish, realistic, irreligious, easy-going and modern. As can be seen in Table 1, the stereotypes about each of the six groups are generally quite different, sometimes even emphasizing bipolar opposite traits.[1] Further analyses of the stereotypes indicate that they are relatively similar in terms of degree of polarization. A single factor analysis of variance of the absolute *t*-values

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1 A stereotype analysis performed separately for male and female participants indicated that the stereotypes were very similar for both samples. The least overlap in stereotypes occurred for the categories males and English Canadians, with 4 of 6 attributes common to the two sexes in each case. Thus, males and females tended to adopt comparable stereotypes about the six categories using these 12 bipolar scales. Because of the relative lack of gender differences, it was not included as a factor in any of the subsequent analyses.

found no significant effects for category ($F(5,66) = 1.68$), suggesting that the scales were appropriate for the six groups.

The stereotypes involving the groups can be contrasted to reveal instances of concordance or discordance between groups. The most meaningful contrasts involve males vs females, 20 year olds vs 70 year olds, and English vs French Canadians. The stereotypes are concordant when the same attributes characterize both groups and discordant when bipolar opposites characterize the groups.

As can be seen in Table 1, the two ethnic stereotypes are more concordant than discordant. English Canadians and French Canadians are both viewed as talkative, impatient, and artistic. The two groups differ on only one trait; English Canadians are seen as modern while French Canadians are traditional. In the case of gender, the stereotypes of males and females are both concordant and discordant. Three of the attributes are in agreement; males and females are both viewed as industrious, talkative, and modern. Discordant portions of the stereotypes occur as males are seen as irreligious, rugged, realistic, and easy-going while females are seen oppositely on these attributes. Comparing the stereotypes based on age reveals that none of the attributes are shared by twenty and seventy year olds, and the stereotypes are discordant on five attributes. Twenty year olds are viewed as irreligious, selfish, rugged, idealistic, and modern while seventy year olds are seen as religious, unselfish, delicate, realistic, and traditional. Thus, it would appear that the stereotypes based on age show the strongest differentiation, with gender second, and ethnicity, the least discordant.

Latency of Judgements About the Six Groups

An analysis of variance was conducted to investigate reaction times in judgements about the groups. For each group, a distinction was made between those six traits that were most stereotypical and those six that were less stereotypical, resulting in the Stereotypicality of Trait factor having two levels. For example, for the category "males", the stereotype traits were rugged, impatient, talkative, industrious, selfish, and realistic, while the non-stereotype traits were irreligious, easy-going, modern, unemotional, artistic and impolite. Thus, this analysis involved a 2 × 6 repeated measures analysis of variance where the factors were Stereotypicality of Trait (stereotypic vs non-stereotypic) and Category (male, female, 20 year old, 70 year old, English Canadian, French Canadian).

Significant effects were obtained for Stereotypicality of Trait ($F(1,59) = 32.42$, $p < .001$) and Category ($F(5,295) = 8.47$, $p < .001$), and the interaction of Category by Stereotypicality of Trait ($F(5,295) = 2.37$, $p < .05$). Adjusting the degrees of freedom for the F-ratios for Category and the interaction of Category by Stereotypicality to 1 and 59 using the Geisser/Greenhouse adjustment for possible violation of the assumption of circularity, the F-ratio for Category is still significant while that for the
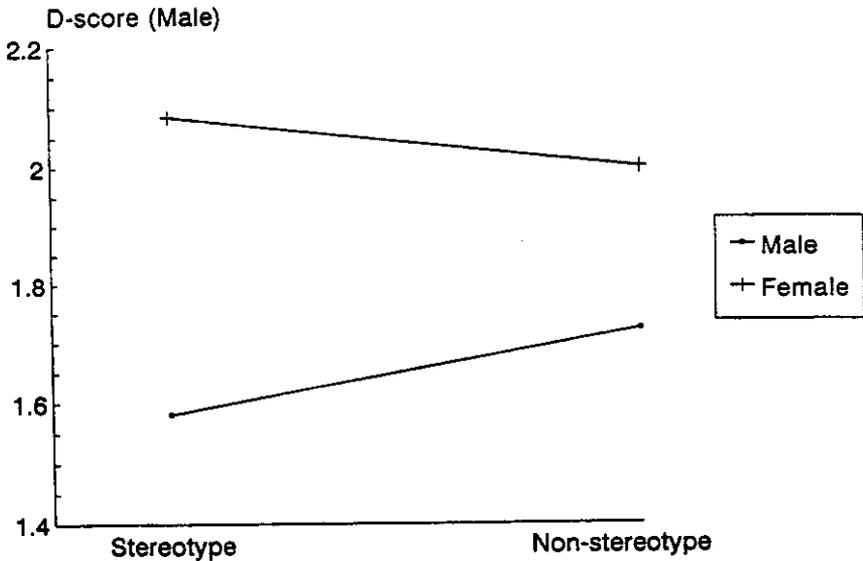
Fig. 1a The Interaction of Gender by Stereotypicality of Traits for the Dependent Measure of Dissimilarity to Males.

interaction is not. Respondents took less time to respond to stereotype (M = 27.95 seconds for the six traits) than to non-stereotype traits (M = 29.47). In addition, post-hoc contrasts indicated that subjects took longer to respond to males, English Canadians and 20 year olds (M's = 33.09, 31.13 and 29.90 respectively) than to French Canadians, 70 year olds, and females (M's = 28.21, 28.03, and 26.88).

Stereotypical Reactions to Individuals

Six analyses of variance were conducted to assess the impact of age, gender, and ethnic stereotypes on the ratings of the target persons. Each of these analyses is a 2 × 2 repeated measures analysis of variance with the factors, Class of Target Person and Stereotypicality of Traits. Thus, where the focus of interest was the male stereotype, Osgood D-scores were computed between the ratings of each target person and the ratings of the category "males".[2]

2 The comparison of any two sets of ratings may be evaluated using D-scores (Osgood et al., 1957) which measure the dissimilarity between the sets of ratings. For example, the ratings of a general category, such as "Males", can be compared with the ratings given to a specific individual, such as a Male 20 year old English Canadian, if they are both rated on the same trait adjectives. D-scores are calculated by computing the difference between two corresponding ratings, squaring the difference, summing over the set of traits, and finally taking the square root of the mean of the result. Thus, a D-Score of 0 would indicate that the subject rated the broad category and the specific individual in exactly the same way, whereas a high D-Score would indicate considerable disagreement
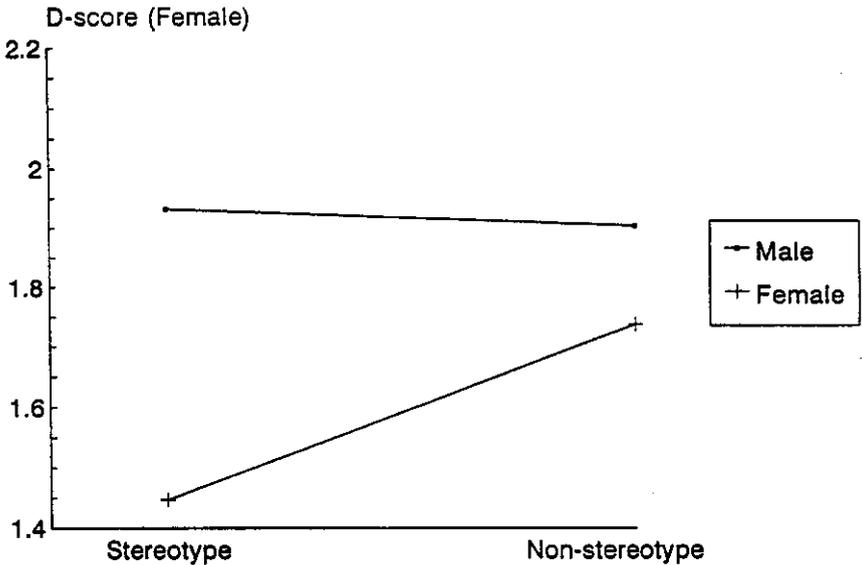
D-score (Female)

Fig. 1b. The Interaction of Gender by Stereotypicality of Traits for the Dependent Measure of Dissimilarity to Females.

Two D-scores were computed for each target person, one for the six male stereotype scales and one for the six non-stereotype scales. These were then aggregated separately for the male and female target persons, providing four scores for each subject (male target stereotype scores, male target non-stereotype scores, female target stereotype scores, and female target non-stereotype scores).

Two analyses of variance were conducted to investigate the effects of gender stereotypes on person perception. The first analysis focussed on the stereotype of males with the factors being Sex of Target and Stereotypicality of Traits. A significant main effect was observed for Sex of Target ($F(1,59) = 96.71$, $p < .001$) and the Sex of Target by Stereotypicality of Traits interaction ($F(1,59) = 9.10$, $p < .01$). This interaction is presented in Figure 1a, where it will be noted that male targets were rated as more similar to the concept Males than were the female targets. The interaction suggests further that the difference between males and females was greater on the stereotype traits than on non-stereotype ones. Post hoc tests[3] indicated, however, that

between the two sets of ratings. Where interest is directed to the effects of stereotypes on person perception, the availability of a common metric is most useful because it permits direct contrasts of judgments about a group with judgments about a target person.

3 The degrees of freedom for the post hoc t-tests were based, where applicable, on Satterthwaite adjustments to degrees of freedom necessitated by pooling error terms because means were obtained from interactions (cf. Winer, 1971).
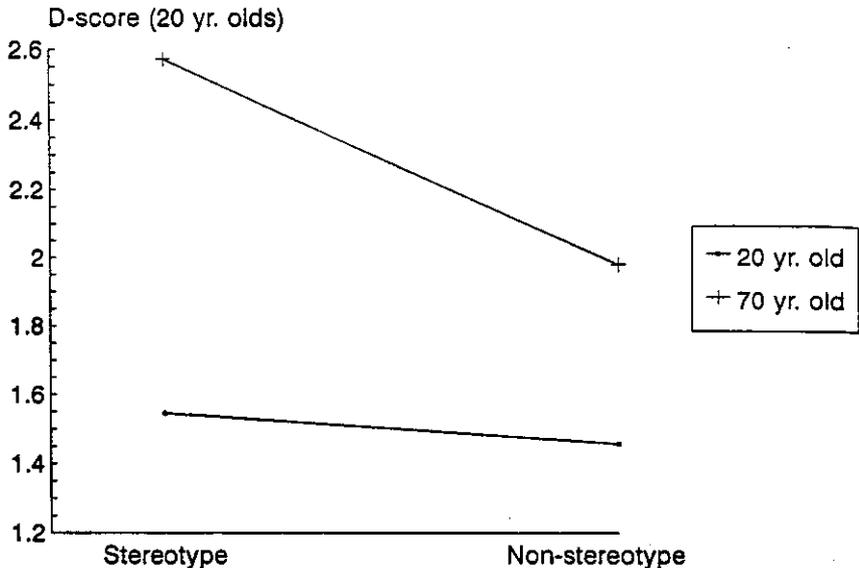
Fig. 2a. The Interaction of Age by Stereotypicality of Traits for the Dependent Measure of Dissimilarity to 20 year olds.

the difference was significant both for stereotype ($t(107) = 9.46; p < .001$) and non-stereotype traits ($t(107) = 6.17; p < .001$). The second analysis focussed on the stereotype of Females. Significant effects were observed for Sex of Target ($F(1,59) = 72.24, p < .001$), Stereotypicality of Traits ($F(1,59) = 6.42, p < .05$), and the Sex of Target by Stereotypicality of Traits interaction ($F(1,59) = 28.48$, $p < .001$). As shown in Figure 1b, the interaction results because female targets are perceived as much more similar to females than are male targets, and this contrast is greater for stereotype than non-stereotype traits. Post hoc t-tests indicated, however, that both the contrast for stereotype traits ($t(110) = 10.04; p < .001$), and for non-stereotype traits ($t(110) = 3.44, p < .001$) were significant.

Two 2 × 2 (Age of Target by Stereotypicality of Traits) analyses of variance were concerned with the effects of age stereotypes on person perception. The first analysis was concerned with the stereotype of twenty year olds. Significant effects were observed for Age of Target ($F(1,59) = 137.62, p < .001$), Stereotypicality of Traits ($F(1,59) = 45.0, p < .001$), and the interaction of these two factors ($F(1,59) = 54.42, p < .001$). Inspection of Figure 2a reveals that the contrast between 70 year old and 20 year old targets was greater on traits stereotypical of 20 year olds than on non-stereotype traits. Examination of the contrasts indicated, however, that each was significant ($t(89) = 13.84; p < .001$ and $t(89) = 7.04; p < .001$ respectively). The second analysis dealt with the stereotype of seventy year olds. Significant effects were observed for Age of Target ($F(1,59) = 176.92$,
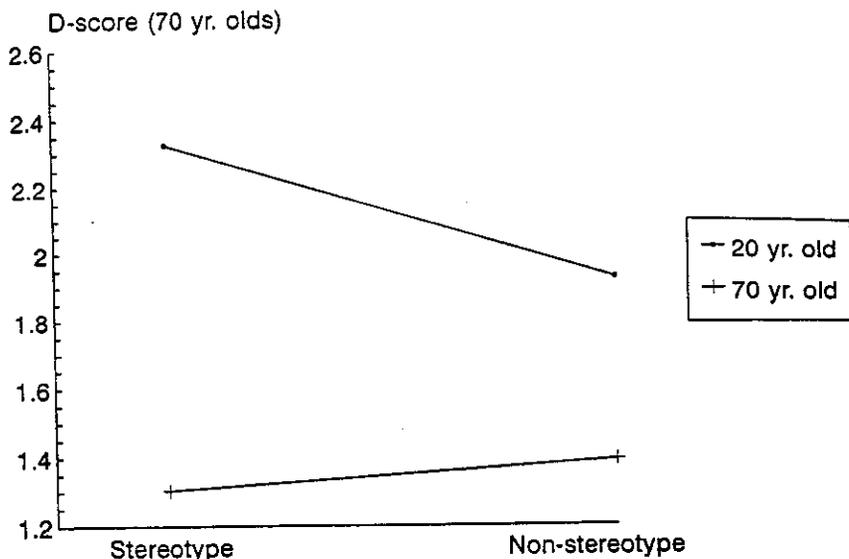
Fig. 2b. The Interaction of Age by Stereotypicality of Traits for the Dependent Measure of Dissimilarity to 70 year olds.

$p < .001$), Stereotypicality of Traits ($F(1,59) = 8.49, p < .01$), and the interaction between these two factors ($F(1,59) = 32.01, p < .001$). Figure 2b demonstrates that the interaction results because the 20 year old target persons were rated as more dissimilar to seventy year olds on stereotype traits than on non-stereotype ones. The t-tests for each contrast separately were both significant, however ($t(108) = 14.01, p < .001$; and $t(108) = 7.33; p < .001$ respectively).

Two other 2 × 2 analyses of variance were concerned with ethnic stereotypes. The first focussed on the stereotype of English Canadians, with the factors being Ethnicity of Target and Stereotypicality of Traits. No significant main effects were observed, and the interaction of Ethnicity of Target and Stereotypicality of Traits was only marginally significant ($F(1,59) = 3.46, p < .07$). Post hoc t-tests indicated that the French Canadian targets were rated as significantly more dissimilar to the concept English Canadians than were English Canadian targets on the stereotype traits ($t(112) = 2.22; p < .05$), but not on the non-stereotype traits ($t(112) = .03$, n.s.). The second analysis was concerned with the stereotype of French Canadians. Significant main effects were observed for Ethnicity of Target ($F(1,59) = 65.65$, $p < .001$) and Stereotypicality of Traits ($F(1,59) = 16.35, p < .001$), while the interaction of these two factors was marginally significant ($F(1,59) = 3.80$, $p < .06$). The main effects emerged because French Canadian targets were rated as more similar to the concept French Canadians than were the English Canadian targets and because ratings tended to be more similar on

TABLE 2
Times taken to rate the target persons

	English	French
female, 70 yr.	58.85	67.86
female, 20 yr.	59.30	58.22
male, 70 yr.	62.42	57.55
male, 20 yr.	56.74	66.06

non-stereotype traits than on stereotype traits. Post hoc t-tests indicated, however, that the English Canadian targets were seen as more dissimilar to French Canadians on the stereotype traits ($t(103) = 7.86, p < .001$) and on the non-stereotype ones ($t(103) = 5.84; p < .001$).

Latency of Reactions to Individuals

The time taken to judge the eight target persons was analyzed using a 2 × 2 × 2 repeated measures analysis of variance with the factors Age, Ethnicity, and Sex of Target. Significant effects were found for Ethnicity ($F(1,59) = 12.74$, $p < .01$), the two-way Age × Sex of Target interaction ($F(1,59) = 17.71, p < .01$), and the three-way Age × Sex of Target × Ethnicity interaction ($F(1,59) = 55.24$, $p < .01$).

Table 2 shows the mean time required to complete the ratings of each target individual. The main effect for Ethnicity emerged because the French targets ($M = 62.42$) took longer to rate than the English ones ($M = 59.33$). The interaction of Age of Target by Sex of Target emerged because the 70 year old female targets ($M = 63.36$) took longer to rate than the 20 year old female targets ($M = 58.76$)($t(107) = 2.81; p < .01$) whereas the ratings for the 70 year old male targets ($M = 59.98$) were only slightly faster than for the 20 year old male targets ($M = 61.40$)($t(107) = .87$; n.s.). The significant three way interaction occurred because this pattern was more characteristic and exaggerated for the French Canadian targets while an opposite but less extreme pattern characterized English Canadian targets.

Remembering the Target Persons

At the end of the study, the target persons were presented one at a time in random order, and subjects were asked to indicate their gender, age and ethnicity in a set of 24 judgements. A respondent's score for any given category (Gender, Age, or Ethnicity) could range from 0 (if consistently incorrect) to 8 (if correct each time). A single factor repeated measures analysis of variance of these scores resulted in a significant effect for Category ($F(2,118) = 3.82, p < .05$). Respondents were most accurate in their memory for age ($M = 5.35$), less accurate for gender ($M = 5.00$) and least for ethnicity ($M = 4.72$). Post-hoc t-tests indicated that only the difference between age and ethnicity was significant ($t(118) = 2.75; p < .01$). A similar analysis was conducted on the time taken to make these judgements, and again a

significant effect was obtained for Category ($F(2,118) = 3.27, p < .05$). Post-hoc t-tests of the means indicated that subjects spent significantly more time trying to recall the people's ethnicity ($M = 38.21$) than they did their gender ($M = 35.03$)($t(118) = 2.03$; $p < .05$) or their age ($M = 34.53$)($t(118) = 2.35$; $p < .05$).

DISCUSSION

This study is unique in simultaneously investigating stereotypes about age, sex, and ethnicity. The attributes on which the targets were rated were chosen to be relevant to at least one of the six groups (males, females, 20 year olds, 70 year olds, English Canadians and French Canadians). The lack of any significant differences in the degree of polarity of judgements across the six groups indicates that the set of attributes was not any more or less appropriate to any one group. Moreover, the significant polarity of some attributes, but not others, for each group suggests that different consensual beliefs (stereotypes) were being tapped for each group.

Subjects made judgements about the concepts consistently faster for stereotype traits than for nonstereotype traits when responding to groups. These results tend to replicate those obtained by Lalonde and Gardner (1989) and suggest that consensually defined stereotypes are processed more quickly than non-stereotypes, even for groups not defined in terms of ethnicity. These findings, along with those obtained by Cohen (1983) and Dovidio, Evans and Tyler (1986), indicate that processing tends to be more efficient for stereotype judgements than for non-stereotype ones.

The results also show that the judgements of the eight target persons are associated with the stereotypes about relevant groups. The effects emerged largely because of stronger contrasts between the targets on the stereotype traits as opposed to contrasts based on the non-stereotype traits. For example, the male targets were judged to be more similar to the concept "males" than were female targets, and the disparity between the ratings of male versus female targets was greater for the male stereotype traits. The concept "females" showed a similar effect; the female targets were judged to be more similar to the concept females, and the disparity between the male and female targets was greater for the traits stereotypical of females. Comparable results were obtained for age and for stereotypes about French Canadians though the latter was only marginally significant. This latter result may be related to the relatively infrequent use of French/English ethnicity for social categorization in this social context.

The results of this study also demonstrate that stereotyping can influence both the speed and accuracy of recall. These effects appear to be related to the contrasts along a given dimension in the social setting. That is, the greatest contrast between stereotypes was observed for age, followed by sex, then ethnicity, and both speed and accuracy of recalling the targets followed the same pattern.

The emerging picture from the data reported here is that the cognitive effects of stereotyping are based largely on contrasts. This is consistent with the results of name-confusion studies (Stangor et al., 1992; Taylor, 1981) showing that errors in attributing statements to particular speakers are less likely to occur if there is a basis for contrasting the speakers, such as race or sex. It is also consistent with the suggestion that the categorization of people is based on salient contrasts (Smith & Zarate, 1992; Zarate & Smith, 1990). Salient contrasts are the essential element of McCauley and Stitt's (1978) definition of stereotypes, thus our data support the validity of that definition and demonstrate that it can be demonstrated even when stereotypes are operationally defined in terms of consensus.

Using broad-based categories with a high degree of contrast would be quite functional in social settings. The process of social inference about strangers would be enhanced by encoding individuals in terms of the dimension on which that person is most different from the perceiver, the perceiver's group, or people in general, depending on context and social goals. Based on the data reported here, this would even appear to facilitate the speed and accuracy of recalling the information later. This is consistent with the perspective that stereotypes act as cognitive energy-saving devices (Macrae, Milne, & Bodenhausen, 1994).

Our results suggest that gender is not necessarily the most salient feature of an individual. The most salient feature is the one that provides the greatest discrimination from other persons in the social context, making it the most informative dimension (Stangor et al., 1992). Our results indicated that the two age groups (20 and 70 year olds) were the most discordant followed by the two genders, followed by the two ethnic groups. In this study, therefore, the wide age range (20 vs 70) provides for even more contrastive processing than does the target's gender or ethnicity.

Our data are consistent with Smith and Zarate's (1992) exemplar based model of stereotyping. In this case, we assessed stereotypes based on broad-based concepts, but we also had our participants rate individuals identified only by combinations of these concepts. One particular combination, the 20 year old male English Canadian, is of particular interest in that the combination of these characteristics is rated more quickly ($M = 56.74$) than are two of the superordinate categories, 20 year olds ($M = 59.80$)[4] and English Canadians ($M = 62.26$). According to Smith and Zarate (1992), this individual corresponds to the "cultural default" person, that is, in the absence of other information, a "person" will be assumed to be a young white male. It is noteworthy that among the attributes studied here, the stereotypes for males, 20 year olds and English Canadians are never discordant. Five of the 12 traits that comprise each of the stereotypes are significantly polarized in the same direction and no traits are polarized in opposite directions. The categorization

4 The means are based on the sum of reaction times to all 12 traits.

process can only be facilitated by this agreement.

The results presented in this study support those usually found in the literature on stereotypes and impression formation. The methodology used in this study, however, provides several advantages. First, we do not need to make *a priori* assumptions of the composition of the stereotypes of given concepts. The stereotypes are defined by the same subjects who ultimately judge the "persons". Second, the ratings of the concepts and the "persons" are based on a common set of traits and can therefore be directly compared. An added advantage of this procedure is the availability of an individual difference measure of stereotyping that can be correlated with other variables (Gardner, 1994). Finally, the use of verbal descriptions rather than photographs or voices minimizes the risk of unassessed dimensions (such as attractiveness) influencing the conclusions about the stereotyping process.

Several conclusions may be drawn from the present study. The consensual approach to defining stereotypes was successful in identifying polarized trait judgements and those stereotypical judgements affected cognitive processing. The ratings of the target persons were more similar to the ratings of the relevant superordinate categories on stereotypical traits. Thus stereotypes of the broad-based concepts may be applied to the more specific individuals or exemplars. Moreover, the speed and accuracy of recall of the target persons appears to be based on the contrasts available in the social context. In this study, age provided the greatest contrast in stereotypes and was the category most salient when recalling the individuals.

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