SCHEMAS FOR MEMBERS OF SOCIAL GROUPS

by

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Running head: Person Schemas
Abstract

Four experiments investigated people's stereotypes of several ethnic groups, how the stereotypes are organized, and how they influence memory for personality information, the formation of impressions, and judgments of personality of single individuals. Of primary interest was whether ethnic stereotypes include one or many personality dimensions or content categories. Experiment 1 found that while ethnic prototypes differed on traits from several personality dimensions, subjects' immediate free recall of trait information ascribed to a group member was unrelated to stereotypes. Experiment 2 replicated the rating and immediate free recall patterns of Experiment 1 using behavioral rather than trait information. Experiment 2 found, however, that delayed recognition memory judgments of behaviors ascribed to a person were biased by his ethnic stereotype. These results do not indicate strong learning biases in processing information about members of ethnic groups. The recognition memory biases found in this and other studies seem to arise from a guessing strategy based on stereotypes. Experiment 3 found that when subjects knew only a person's ethnic identity, they will predict multicategorical personality trait impressions with frequencies highly correlated with the personality stereotypes collected in Experiment 1 and 2. Experiment 3 suggested that person schemas can influence the impression formation process. Experiment 4 found that subjects could easily and correctly match multicategorical personality trait profiles with the corresponding ethnic groups. Findings from all four experiments suggest that person schemas for members of ethnic groups are multicategorical in character.
Schema Processing of Information About Ethnic Group Members

Our goal is to understand how people comprehend and remember information about persons. As part of that goal, the present study investigates people's knowledge about members of common social groups, how that knowledge is organized, and how it is used in remembering persons, forming impressions and judging personalities. We will use the term person schema to refer to a preexisting data structure (see Bower, 1978, Rumelhart and Ortony, 1977) that serves in organizing, interpreting, and making inferences about a person or social group. We suppose that people have acquired knowledge (schemas) about many different aspects of the personalities of members of social groups. These schemas are used to understand, remember, and construct information about new members from these groups.

Three main questions were asked in the present study. The first question concerns the structure of person schemas. Research on implicit personality theory indicates that people employ several different dimensions or personality content categories when describing the personalities of others. Norman (1963), for example, derived five basic dimensions of personality that are used by people in judging the personalities of others. The dimensions are Extroversion, Agreeableness, Conscientiousness, Emotional Stability, and Cultured. Representative traits following in these dimensions are given in Table 1 below. Further research indicated that these same personality dimensions were used regardless of the judge's familiarity with the target person (Passini and Norman, 1966; Hakel, 1969). Thus, these dimensions reflect the perceiver's categories for understanding and interpreting others' behavior (for a review, see Schneider, 1973; Rosenberg, Nelson, 


Surprisingly, recent research and theory in social cognition has ignored this idea that personality prototypes, stereotypes, or person schemas might be multicategorical in character (see for example, Cantor and Mischel, 1977, 1980; Markus, 1977; Rogers, Kuiper, & Kirker, 1977; Taylor and Fiske, 1978). The most elaborate model of person schemas was proposed by Cantor and Mischel (1980). Their general taxonomy begins at the superordinate level with a single dimension of personality, such as Extroversion. The next subordinate level might include "Public Relations Type" and "Comic Joker." Below "PR Type" (two levels down) might be example, concepts, such as door-to-door salesmen, campaign managers, and press agents. Thus, in the Cantor and Mischel proposal we find, at the highest level, a single personality dimension, then general subtypes of such persons beneath, specific occupational or social roles at the lowest level.

We will propose a different conceptualization of person schemas or prototypes. Rather than suggesting that a number of occupational or social roles are organized under a single personality dimension, we propose that stereotypes for ethnic groups, occupations, or social roles have associated with them a point on a number of different personality dimensions or content categories. Thus, a door-to-door salesman might be considered not only Extroverted but also uncultured, somewhat unconscientious, and so on.

Recent experiments by Hamilton, Katz, and Leirer (1980) provide some evidence for this multicategorical perspective. In one of their experiments, some subjects were told to form a personality impression of the hypothetical
person described whereas other subjects were told just to memorize the descriptions. Subjects were then presented a list of behavior predicates containing information from four personality content categories (i.e., social, intellectual, athletic, religious). In a surprise recall task, subjects who formed an impression recalled more predicates, and organized them in recall (according to the a priori personality content categories) more than did the memorizing subjects. These findings suggest that people actively organized person information according to personality content categories.

If person schemes are multicategorical in nature, then so too should be personality-schemas for social or ethnic groups. Thus, the schema for members of a common social group may include information about how extroverted, agreeable, conscientious, cultured, and emotionally stable X typical members of the group are. Our first studies check whether ethnic schemas contain information on several different personality content categories. While this approach departs from current conceptions of person schemas, it enables an extensive body of literature on person perception and implicit personality theory to be integrated into the social cognitive framework.

The second major question motivating our study is whether social schemas systematically bias peoples' memory about members of social groups. In reviewing the relevant literature, we noted that most prior studies of memory biases in person memory have typically measured recognition memory. For example, Cohen (1977) used a forced-choice recognition test in investigating biases in memory for a video-taped person described as a Librarian or a Waitress. Cantor and Mischel (1977) used recognition confidence ratings to study memory for Extroverts and Introverts; Snyder and Uranowitz (1978) used recognition confidence rating to investigate biases in memory for a person
characterized as heterosexual and homosexual. A danger in using recognition memory measures is that when subjects no longer have any memory for the original information they use their stereotypes to make plausible guesses about what information might have been presented. Thus, recognition ratings may largely reflect guessing biases rather than selective memory retrievals. In fact, Bellezza and Bower (in press) found precisely this response-bias (and only that in a replication of the Snyder Uranowitz experiment.

The third question asked by the present studies is whether person schemas are employed in impression formation and personality judgments. In situations where little is known about someone except his or her social group, will people use their stereotype of that group to aid them in forming an impression? Furthermore, will the impression so formed be multica
gerical in character?

**Experiment 1: Multicategorical Trait Ratings and Free Recall**

Our initial interest was in collecting personality norms for persons of different ethnic groups. If personality schemas exist for common ethnic groups, then people in a given culture should agree on some of their features. Our second interest was to check whether in remembering information about a member of an ethnic group, subjects would bias their recall towards the group stereotype.

Our subjects were asked to form an impression of someone described first as from a particular ethnic group (one of five) and then by 20 personality trait adjectives. Four traits were taken from each of the five personality dimensions described by Norman (1963). Norman's personality categories were used because people reliably use them in describing others, regardless of how familiar the rater is with the target person (Passini & Norman 1977). After
reading over the trait list, our subjects received a surprise recall test on
the traits. Finally, we asked them to rate how stereotypical of the ethnic
group were each of the original 20 traits plus 20 additional traits from the
same five personality content categories.

Our use of ethnic stereotypes rather than a "prototypic person"
descriptions (such as in the Cantor and Mischel studies) avoids a serious
problem in the latter design. In previous research, subjects first received a
description of a stimulus person which presumably activated a preexisting
prototype such as "introvert". Then, lists of traits or behaviors were
presented followed by a recognition memory test. A weakness of this procedure
is that the initial description may not cause subjects to use their own
preexisting or naturally occurring person schemas. In fact, Tsujimoto (1978)
has shown that subjects form cognitive prototype after a single presentation
of person information and that a prototype will be formed even when the
information consists of a randomly generated, contradictory set of person
descriptions. The problem is that these artificially derived prototypes may
have little resemblance to the cognitive structures employed in everyday
person perception.

To avoid this problem, we provided subjects with a single ethnic cue
(e.g., Black, Oriental, etc.). If subjects have a priori schemas for persons
from common ethnic groups we expect the initial ethnic label to activate them
so that these schemas will be used in processing information about persons
from these groups.

Method

Subjects. One hundred undergraduate university students participated as
part of a course requirement. There are 20 subjects in each of the five
ethnic cue conditions.

Materials and Procedures. The following general procedure was used in Experiments 1 and 2. First, the subjects were told this was an impression formation experiment. Next they received a deck of 22 3 x 5 in. cards that they read at the rate of one card every eight seconds. The first card reminded them to form an impression of this person using the information on the following cards. The second card said the target person was either one of three races, Black, Oriental, White, or one of two religions, Jew or Catholic. The different ethnic cues presumably called up different stereotypes to use in processing the forthcoming trait information.

After receiving the ethnic cue, the subjects continued reading through the remaining cards at the eight second rate. One trait adjective was presented on each card and all subjects read the same 20 traits. Two positive pole and two negative pole traits were taken from each of the five dimensions described by Norman (i.e., Extroversion, Agreeableness, Conscientiousness, Emotionally Stability, and Cultured). That is, the fictitious person was said to have two extroverted traits, two introverted traits, two agreeable traits, two disagreeable traits, and so on. The pool of traits are listed in Table 1. After randomizing the traits, a Latin Square design was employed to determine their presentation order. After reading the trait list, the subjects performed a two-minute, unrelated filler task. Next a surprise, four minute, free recall test was given. Subjects were asked to write down as many of the original trait adjectives as possible. Following this free recall, subjects completed the "Stereotype Rating Questionnaire".

The questionnaire contained the original 20 traits used in the recall task plus the 20 remaining traits, in Table 1. Thus, four positive pole and
four negative pole traits were included from each of Norman's (1953) five dimensions. The subjects were asked to rate each trait for how stereotypic it was of members of the ethnic group that they had been given. They used a scale from 1 (not at all likely to possess the trait) to 9 (very likely to possess the trait).

In completing the Stereotype Rating Questionnaire the subjects were told that we were not concerned with their personal beliefs, but rather their knowledge of other people's stereotypic beliefs. We hoped this procedure would provide more direct access to subjects' ethnic stereotypes. Asking subjects for their personal beliefs would probably have resulted in their giving socially acceptable answers, not necessarily honest ones.

Results

Ratings. Each ethnic cue produced a different stereotype rating pattern. The mean ratings averaged across the four traits at both the positive and negative poles of the personality categories for the five ethnic groups are presented in Table 2.

Comparing the racial groups first, Blacks were rated as highly extroverted, but low on agreeableness, conscientiousness, emotional stability, and culture. Rating patterns of Asians were much the reverse. Whites were rated about equal to Blacks in extroversion but midway between Blacks and Asians on the remaining four personality content categories. Analyses of variance of these ratings indicated a significant interaction of racial cue and personality dimension for both the positive pole trait ratings, $F(8,228) = 5.27, p<.01$, and the negative pole ratings, $F(8,228) = 5.36, p<.01$. 
Comparing the two religious groups, Catholics were rated high on extroversion, agreeableness, and conscientiousness, but a bit lower on emotional stability and culture. Jews were rated about equal to Catholics on extroversion, conscientiousness, and culture but lower on agreeableness and emotional stability. An analysis of variance of these ratings indicated a significant interaction of religious cue and personality dimension for both the positive pole ratings, $F(4,152) = 3.18$, $p < .05$, and the negative pole ratings, $F(4,152) = 3.87$, $p < .01$.

To summarize briefly here, the results indicate very definite differences in average personality contents for racial and religious stereotypes.

**Free Recall.** If the different ethnic schemas bias memory, then recall of different traits should vary across the ethnic groups. Subjects' average recall of traits within positive and negative poles of the five personality content categories for each group is presented in Table 3.

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Insert Table 3 about here

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For the positive poles of the personality categories, subjects generally recalled more extroverted and cultured traits than agreeable, conscientious, or emotionally stable traits. An analysis of variance of these recall results indicated only one effect, that of personality content category, $F(4,380) = 9.69$, $p < .01$.

For the negative poles of the personality categories Table 3 shows generally higher recall for the Asian cue condition and for the emotional stability category. An analysis of negative pole results indicated a main effect of ethnic cue, $F(4,95) = 2.57$, $p < .05$, and personality content category, $F(4,380) = 2.62$, $p < .01$. Additional post hoc analyses indicated no
interactions of ethnic cue and individual trait terms. If ethnic stereotypes had been biasing recall of specific traits, then such interactions should have been significant. None were. Therefore, these results provide no evidence overall that free recall was biased by ethnic cues.

**Discussion**

The multicategorical trait rating results are interesting in two respects. First and foremost, different ethnic cues produced different ratings at the personality content category level. The results indicate that popular, schemas for these ethnic groups include evaluations on a number of personality content categories, not just a single dimension as suggested by Cantor and Mischel (1980). A second interesting feature of the stereotype rating results is that ratings on the positive and negative poles of the five personality content categories are negatively correlated, almost redundantly so. Jews, for example, were rated high on extroversion and low on introversion; Blacks were rated low on agreeableness and high on disagreeableness, and so on.

Unfortunately, the free recall results were ambiguous. If stereotypes bias recall of person information, one would have expected different recall patterns with different ethnic cues. This was not found. Instead there was an overall tendency to recall more traits from some personality categories than others, regardless of the ethnic group. The interpretation of this finding was further complicated by subjects' informal comments. They found the impression formation task difficult due to the inconsistent, bipolar information. Some subjects reported that the information was so confusingly inconsistent, that the stimulus person was simply not believable. These comments coupled with the ambiguous recall effects suggested the need for a
second experiment using a more coherent set of material for the impression formation and free recall tasks.

**Experiment 2: Multicategory Behavioral Ratings, Free Recall, and Recognition Judgments**

The results of Experiment 1 are perplexing. The trait ratings indicated that people have distinct ethnic group schemas which are multicategorical in nature. Yet the surprise memory test showed no recall biases related to these ethnic stereotypes. Individual traits were recalled about the same across the different ethnic conditions. Thus, while the stereotype ratings support the existence of ethnic schemas, the free recall data revealed no bias due to these ethnic schemas.

While the failure to find stereotype biases in free recall might have resulted from our presenting contradictory trait information, our results question the interpretation of earlier research that employed recognition memory. Those studies showed that people were more confident that schema-related information had been presented in some original information than that schema unrelated information had been included. This was interpreted to mean that the subjects' memory had been systematically biased by schema processing. However, an alternative explanation of these earlier results is plausible. Specifically, person schemas may be used to generate plausible guesses when subjects can not clearly remember what was stated about a target person. Thus, the results in these studies could have been due to a guessing bias rather than a memory bias based on schema relatedness. Experiment 2 investigates this hypothesis in the context of person schemas for ethnic groups.

In Experiment 2 subjects were asked to form an impression of two people
identified by their ethnic background— one Black, the other Asian. Each
target person was described by a block of ten positively valued behaviors, for
a total list of 20 behaviors. For each target person, two behaviors reflected
each of the five personality dimensions described by Norman (1963). After
reading the person descriptions, some subjects were given a free recall test.
Other subjects were given a recall recognition memory test. Eight weeks later
the first group was given a second free recall test and then a recognition
test. At this time a third group of subjects rated the stereotypicality of
each of the 20 behaviors for the two ethnic groups used in the study.

Several questions were asked. First, will stereotypicality ratings of the
20 behaviors from the five personality content categories correspond to the
trait ratings for the ethnic groups from Experiment 1? Second, will our new
procedure, modified from Experiment 1 by using only positive pole behaviors,
lead to schema biases in free recall? Finally, will a recognition memory
rating reflect schema biasing? If schemas affect guessing but not learning
then there will be schema related biases in recognition ratings but not in
free recall.

Method

Subjects. Thirty nine high school seniors enrolled in an introductory
psychology course, volunteered to participate along with five paid
undergraduate university students.

Procedure. Written instructions asked subjects to form an impression of
two target people identified only by their ethnic background. Next they were
given a deck of 3 x 5 in. cards with each card containing the target person’s
identity (ethnic cue) and a single behavioral description. Four positive pole
behavioral exemplars were constructed to reflect each of the five personality
content categories. For example, an Extroverted behavior was "Went to a noisy party" and a Cultural behavior was "Went to a classical music concert." Each of the two target persons was randomly assigned two behaviors from each of the five behavior categories. Which pair of behavior dimensions from each personality were associated with the target persons was counterbalanced across subjects.

The subjects turned the pages of a booklet to read one behavior description every eight seconds. After finishing the list, they performed a 10 minute unrelated filler task. Next, 14 of the subjects were given a surprise free recall test over the original behavioral descriptions. They were given four minutes to write down as many descriptions as they could remember and to include the ethnic identity of the person associated with each behavior.

A second group of 10 subjects, after completing the ten minute filler task, was given a surprise recognition memory test, presented as a single page questionnaire. The left side of the page listed 20 originally presented behaviors presented to the subjects. To the right of each behavior a space was provided for subjects to indicate how confident they were that the behavior had been assigned, in the presentation list, to each of the target persons. They did this by using a scale from 1 (not very confident) to 7 (very confident).

Eight weeks later the subjects in the immediate free recall condition were given the same free recall test. After the free recall test these subjects were also given the recognition rating task. At this time a third group of 15 subjects normatively rated the stereotypicality of each of the 20 behaviors for both ethnic groups. They used a scale from 1 (not at all
stereotypic) to 7 (very stereotypic) to rate each behavior.

**Results**

**Ratings.** The stereotypicality ratings of the behavior predicates were as predicted by the trait ratings in Experiment 1. Table 4 reports ratings of behaviors within each personality content category for the two ethnic groups.

| Insert Table 4 about here |

Generally, the extroverted behaviors were rated as stereotypic of Blacks while agreeable, conscientious, emotionally stable, and cultured behaviors were not. The Asian stereotype was much the reverse. An analysis of variance indicated that these rating patterns resulted in a main effect of ethnic cue, $F(1,14) = 64.43$, $p < .01$, and a main effect of Personality Content Category, $F(4,56) = 7.53$, $p < .01$. Moreover, the interaction of Ethnic group and personality category was in the predicted direction and reliable, $F(4,56) = 42.16$, $p < .02$.

**Immediate free recall and recognition recall.** The data from the immediate recognition test were clear: these subjects were perfectly accurate in their recognition judgments. They used only the end points (1 and 7) of the confidence scale and without exception they were accurate in their judgments. Thus, no distinguishing results can be gleaned from this test.

The subjects given immediate free recall were much less accurate. The means for the immediate free recall of behaviors from the five personality content categories in the two racial cue conditions are reported in Table 5.

| Insert Table 5 about here |

Generally, the pattern of free recall across the behavior predicates in Experiment 2 are consistent with free recall of the corresponding traits in Experiment 1. Specifically, extroverted behaviors were recalled more than
behaviors from other remaining personality categories. An Ethnic Cue (2) by Personality Content Category (5) analyses of variance indicated only one significant effect; Personality Content Category, $F(4, 72) = 2.78$, $p < .05$. The interaction in recall of category with ethnic cue, predicted by schema-reconstruction, was not significant, $F(4, 72) = 1.46$, NS.

To summarize the memory test results, we found no support for the idea that ethnic stereotypes bias episodic memory for personality-related behaviors. (The recognition memory test provided no discriminative information due to a ceiling on performance.) The free recall data suggested that subjects remember more extroverted than other behaviors but the recall pattern across behavior types was the same for the Black and Asian target person.

**Delayed free recall and recognition recall.** Eight weeks later the subjects who had initially done immediate free recall were tested again for free recall and then for recognition memory.

The results of the delayed free recall and recognition measures were quite different. Free recall was virtually nonexistent in the delayed condition; subjects, run in a group, pleaded complete inability to recall any of the information presented eight weeks earlier.

Subjects were able to complete the recognition memory test; however, their recognition ratings bore little relation to the material presented originally. Their lack of specific memory was indicated by equality confidence ratings of the two behaviors presented within each personality category for a target person versus the two unpresented behaviors of that category. This comparison was computed separately for the Asian and Black cue conditions. If subjects could remember which behaviors had been associated
with the two racial cues, then confidence ratings should have been higher for presented behaviors. In contrast, however, subjects' recognition confidence ratings, within each personality content category, for items presented vs. not presented with the ethnic cue showed no difference in confidence ratings, for either the Black cue condition, $t(25) = 0.65$, NS; or the Asian cue condition, $t(25) = 0.30$, NS.

While the original information was completely forgotten dramatic, schema-consistent biases were conspicuous in the recognition ratings. Table 6 reports the mean recognition confidence ratings for behaviors predicated for the five personality categories in the two ethnic cue conditions.

Table 6 reveals a striking similarity of the pattern of recognition confidence ratings to the stereotypicality ratings in Table 5. The correlation between the mean stereotype ratings and the mean recognition-memory ratings of each of the five personality dimensions for both the Asian and Black stimulus cues was $r(10) = .95$, $p < .01$.

To summarize the recall and recognition findings, data from the immediate free recall task provided no evidence of schema biasing in memory. While free recall was considerably below ceiling, the remembered behaviors were not related to the ethnic cue associated with them. In the delayed condition, subjects could not freely recall any of the information originally presented. In the delayed recognition test they could not accurately judge which behaviors within each of the personality content categories had been originally associated with each of the ethnic cues.

A strong bias was found for both ethnic conditions, viz., delayed
recognition ratings conformed closely to stereotypes. Subjects were generally more confident that schema-consistent information had been presented about a particular ethnic person than that other, less consistent information had been presented.

Discussion

The results of Experiment 2 suggest that recognition confidence ratings actually reflect a schema-driven guessing bias rather than a memory bias. While immediate free recall was far below ceiling (mean recall was less than eight out of twenty behavioral items), no ethnic effects were found, just more recall of extroverted behaviors. Thus, employing a memory measure relatively free of guessing biases, we found no schema biasing effects on memory.

In the delayed condition, we found practically no specific memory for the originally presented ethnic behaviors or attributions. Subjects could recall none of it; and they were unable to recognize which behaviors had been associated or not with the Asian or the Black persons. But striking schema-consistent biases appeared in delayed recognition. Thus, a guessing strategy based on schema consistency was probably used.

An important result was the consistently reliable support across Experiments 1 and 2 for the multicaegorical characterization of person schemas. Immediate free recall, delayed recognition ratings, and stereotypicality ratings all showed significant recall and rating biases according to the personality content category. In both experiments, free recall and stereotype ratings of information from the five personality content categories was much the same for traits as for behavior predicates. The reliability of results for both behaviors and traits supports the multicaegorical nature of the person schemas.
Experiment 3: Multicategorical Impressions

The next experiment asked whether the multicategorical personality perspective is applicable to the impression formation process as well as to memory. In Experiment 3 subjects were presented with a target person who was described as a Black. Based on the ethnic cue the subjects were asked to call to mind and construct an impression and then write down traits reflecting their impressions. Finally, subjects categorized the traits they generated according to the personality content categories employed in Experiment 1 and 2. Experiment 3 asked two questions. First, do subjects' schema for Blacks result in their thinking of traits from the personality categories described by Norman (1963)?; and second, does one's schema for members of an ethnic group have any influence on the relative proportion of traits generated from each of the personality content categories? More specifically, is there a correspondence between the proportion of traits generated from each category and stereotypicality ratings on these categories?

Method

Subjects. Twenty five undergraduate university students participated as part of a course requirement.

Procedure. On a written set of instructions the subjects were told that this experiment was concerned with the way in which we form an impression of a person on the basis of his or her actions, racial or religious background, behavior patterns, interests, etc. The subjects were then asked to turn to the next page, read about the person described there, and form an impression of that person. As in Experiment 1 and 2 the person was described as being Black and living near the center of a large city. After reading the description, the experimenter waited two minutes for the subjects to call to
mind an impression of the target person. At the end of two minutes they were asked to list nine personality traits that accurately describe the type of person they had in mind. After five minutes another test booklet was passed out. This contained eleven personality categories. The first 10 categories were the labels for the five positive poles and the five negative poles of Norman's (1963) five dimensions of personality (see Table 1). The eleventh category was simply labeled, "None of the 10 categories seem appropriate." The subjects were asked to decide to which of the 11 categories each of their listed traits belonged. The subjects were told that they may use as many or as few of the categories as they wished. The subjects completed this final part of the experiment at their own pace.

Results and Discussion: Experiment 3

Table 7 reports the mean number of traits included within each of the eleven categories. The table shows considerable difference in the mean number of traits assigned to each category. An analysis of variance comparing the numbers of traits categorized in the

first 10 categories found significant differences, F(9,24) = 2.93, p<.05. Thus, traits were not randomly generated and categorized across the five dimensions.

To investigate the relation between the trait ratings of Experiment 1 and the trait generation task of Experiment 3, a correlation was computed between the rank ordering of ratings and rank ordering of the number of traits included in each personality content category. Rankings were done separately for the positive and negative poles of the content categories. Thus, scores
ranged from 1 to 5 for the fine positive pole categories and 1 to 5 for the five negative pole categories. A strong positive correlation of \( r = 0.94(p < .01) \) was obtained between the number of traits generated from the positive and negative poles of the five personality categories and the ratings of the same trait categories.

This outcome suggests that ethnic stereotypes systematically affect which trait dimensions are thought about when calling to mind an impression of a specific Black person. Also, the rankings of traits generated frequently from each of the personality content categories in Experiment 3 correlated almost perfectly with the stereotypicality ratings of the personality content categories for Blacks in Experiment 1.

Another important finding is that almost all the traits generated in Experiment 3 were categorized as belonging to either the positive or negative pole of the five dimensions used in Experiment 1 and 2. An average of only one trait per subject was categorized as belonging to neither the positive nor negative pole of some one of the five personality content categories. In many cases, these unclassified traits appeared to reflect combinations of two or more dimensions. For example, many of these traits referred to violence or aggression, which reflect a combination of disagreeable, emotionally unstable, and uncultured characteristics. The results of Experiment 3 thus support the hypothesis that in the absence of specific information, people will rely on their ethnic schemas to form impressions of persons, and the traits they typically think of come from differing personality categories with frequencies correlated with stereotypicality ratings of these some categories.

**Experiment 4**

Experiment 4 investigates the multicategorical nature of person schemas.
in a novel way; but it also provides a means of testing a possible problem with aggregating trait or behavioral information at the personality content category level. It has been argued in the multidimensional scaling literature that aggregating the data of many subjects may create a multidimensional solution (or a set of content category ratings) that is not representative of any individual's beliefs (Jackson and Messick, 1963). Applied to the present study, the argument would be that the ratings, recognition biases, and impression formation biases found thus far may not reflect any particular subject's biases but rather a group composite. Experiment 4 tests this possibility within the context of a personality judgment task.

Experiment 4 asked whether person schemas can be used to identify mult categorical characterizations of common ethnic groups. Subjects were presented personality profiles made from the aggregated personality content category ratings of Experiment 1. The subjects were asked to classify these profiles as coming from one of several ethnic groups. If subjects can correctly classify such profiles, that would further support the notion that subjects' stereotypes are mult categorical and can be employed in judging personality.

Method

Subjects. Thirty three undergraduate university students acted as subjects in this experiment. These students participated either as part of a course requirement or were paid $3.00.

Procedure. The first page of the experimental booklets informed the subjects that they would be asked to identify the "personality profiles" that are stereotypic of three racial and two religious groups. They were told that: "We are not interested in your personal beliefs, but rather, we are
interested in your knowledge of the general stereotypes of ethnic groups." The next two booklet pages contained the graphs shown in Figures 1 and 2.

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Insert Figure 1&2 about here
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These figures depict the average ratings on the positive poles of the five personality content categories from the trait rating task of Experiment 1. The first figure contains the ratings of the three racial groups and the second figure contains the ratings of the two religious groups. The three racial cue labels were written below the graph shown in Figure 1 and the two religious cue labels were written below the graph shown in Figure 2. The subjects were asked to assign these ethnic group labels to the graphs in the two figures. The order of the graphs were randomized across subjects.

Results and Discussion

Twenty two of the 33 subjects correctly labeled all three of the racial group profiles, (p<.001 by a binomial test) 26 of the 33 subjects correctly labeled the religious group profiles (p<.001). Subjects' informal comments indicated that the task was easy and the personality profiles were quickly identified. Thus, subjects find some correspondence between their schemas for common ethnic groups and the multicategorical characterization constructed from the aggregate trait ratings for each ethnic group.

General Discussion

To summarize our main points, we have investigated particular knowledge structures called "person schemas" which are like concepts or stereotypes for persons from commonly identified social groups. Just as one can collect normative ratings for features of concepts like furniture and animal, so is it
possible to collect normative, culturally-shared ratings for features of person schemas for members of social groups. Importantly, for any particular social group these features reflect not one but several personality content categories. The properties of person schemas include reliable ratings, judgments, and inferences about the categories of personality traits and behaviors that are associated with different social groups.

Our four experiments suggest consistent conclusions. Experiments 1 and 2 found that subjects rated members of ethnic groups differently on several different personality content categories. The same personality content were found using both trait information and behavioral predicates. Thus reliable, multicategorical personality schemas definitely exist for common ethnic groups. Experiments 1 and 2 found no free recall biases related to these person schemas. On the other hand, delayed recognition memory (after forgetting) consisted largely of guessing, with biases closely paralleling the stereotype ratings. Comparing our recognition ratings to our free recall results leads us to suspect that previous studies employing recognition ratings may not have been tapping differential memory so much as schema-directed guessing biases.

Experiment 3 found that when told to imagine a hypothetical member of a given ethnic group, subjects generated personality descriptions of him that were multicategorical in character. Also, the proportions of traits generated within different personality content categories were highly correlated with the multicategorical personality ratings of Experiment 1. Thus, Experiment 3 suggested that person schemas can influence impression information and that these impressions are multicategorical in character.

Experiment 4 found that subjects can accurately match multicategorical
descriptions of common ethnic groups with their appropriate ethnic label. Thus, multicategorical characterizations of ethnic group stereotypes correspond validly with subjects' cognitive representations of these stereotypes.

In general, our results suggest two conclusions. First, ethnic stereotypes may be appropriately conceptualized as multicategorical. Second, schema processing of person related information seems not to bias episodic memory; rather, when people forget specific attributes or behaviors of a target person, they will rely on that person's ethnic stereotype to guess what might have been said about him or her.

Our stereotype data do not fit with Cantor & Mischel's (1980) hierarchical conception of prototypes. Within their proposed hierarchy, person categories, such as ethnic identity would have a position subordinate to some unidimensional trait (e.g., Extroversion). Thus, schemas for ethnic groups could not include information about more than one category of personality. However, our results indicate that ethnic stereotypes comprise attributes from many different personality content categories. Thus, the hierarchial structure proposed by Cantor and Mischel (1980) does not adequately describe our findings.

One may well ask why earlier researchers appeared to find schema related memory differences. We believe that those claims came from studies with certain methodological weaknesses. As an illustration, let us consider one of the pivotal studies in this area, namely, a classic paper by Cantor and Mischel (1976) titled: "Traits as Prototypes." We believe their conclusions were compromised by three serious problems. First, the authors used recognition ratings to demonstrate differential memory resulting from
prototypes. But, as we have shown here, recognition confounds differential memory with guessing biases. When their experiment was replicated with free recall, no schema-based memory differences were obtained (Leirer, unpublished study). Much the same confound, of guessing biases in recognition, has been found to compromise the interpretation of Snyder and Uranowitz’s (1978) research on reconstructive person memory (Bellezza & Bower, in press).

A second problem with Cantor and Mischel’s (1976) method is that it did not insure that the schemas under investigation in fact, existed as coherent structures. Subjects were presented with traits prerated for their degree of extraversion, and asked to form an impression of the person described. The experimenters believed that subjects had prototypes of the Extrovert or Introvert, that one of these would be instantiated to encode the traits of the target person, and that differential memory would result for schema consistent vs. schema-independent information. Although the results provided some support for this hypothesis, the effect in the Introverted condition were statistically weak.

Unfortunately, the trait terms used by Cantor and Mischel (1976) partly confounded likeableness and extroversion. To investigate this confound, Leirer (unpublished study) replicated the Cantor and Mischel study and found their basic result, but then reanalyzed the data to check an alternative hypothesis. That alternative supposes that subjects were forming an impression and evaluating the traits on the basis of how likeable the person was rather than how extroverted or introverted he was. To test this hypothesis, other subjects were asked to rate how likeable were each of the traits. It turned out that these likelibility ratings of the test traits predicted their recognition-memory ratings more accurately than did their
extraversion-introversion rating. Thus, subjects’ scheme for forming an impression and evaluating the target person seemed not to correspond to the Extrovert-Introvert schema assumed by Cantor and Mischel.

Finally, and closely related to the last point, we feel that one must exercise caution in interpreting data obtained by forcing subjects to employ a prototype representational structure prescribed by the experimenter, as Cantor and Mischel (1980) have done in their recent studies. The problem with this procedure is that compliant subjects will perform almost any task that the experimenter asks. However, the cognitive representations that the subjects can be forced to employ may bear little resemblance to those they use in everyday person perception. For example, in one of Cantor and Mischel’s (1990) studies, subjects are required to sort cards into groups within the four superordinate categories prescribed by Cantor and Mischel. In another study, subjects are asked to consider the notion of Extroversion, and to give good, moderate, and poor examples of this prototype. If the same procedure had been employed in our study of ethnic groups, then Blacks, Whites, and Jews would have all been categorized as good examples of an extrovert prototype. But, as we have found, when a multicategorical approach is employed subjects’ representations of these three ethnic groups are very different.

We consider these experiments as preliminary investigations of a currently neglected aspect of social cognition, namely, the multicategorical nature of person knowledge. In these experiments we have successfully employed the multicategorical conception of person schemas to provide additional facts and better characterize the inferences made and the impressions formed of members of common social groups. The ultimate goal of our research is to understand the processes and products of people’s
apprehension of other persons.
References


Table 1

Four positive and four negative traits from each of the five personality content categories used in the Stereotype Rating Questionnaire

<table>
<thead>
<tr>
<th>Factor Names</th>
<th>Scale Dimensions</th>
<th>Positive/Negative Poles</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Extroversion</td>
<td>Talkative/Silent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Open/Secretive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adventurous/Cautious</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sociable/Reclusive</td>
<td></td>
</tr>
<tr>
<td>II. Agreeableness</td>
<td>Good-natured/Irritable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unjealous/Jealous</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mild/Headstrong</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooperative/Negativistic</td>
<td></td>
</tr>
<tr>
<td>III. Conscientiousness</td>
<td>Tidy/Careless</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Responsible/Undependable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scrupulous/Unscrupulous</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Persevering/Pickle</td>
<td></td>
</tr>
<tr>
<td>IV. Emotional Stability</td>
<td>Poised/Nervous</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calm/Anxious</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Composed/Excitable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not hypochondriacal/Hypochondriacal</td>
<td></td>
</tr>
<tr>
<td>V. Culture</td>
<td>Artistic/Unartistic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intellectual/Narrow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refined/Crude</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Imaginative/Simple, Direct</td>
<td></td>
</tr>
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</table>
Table 2.
Mean stereotype rating score on both positive and negative poles of the Five Personality Dimensions for the Three Racial Conditions (7 is highly stereotypic, 1 is low).

<table>
<thead>
<tr>
<th>GROUP</th>
<th>BLACK</th>
<th>ASIAN</th>
<th>WHITE</th>
<th>JEWISH</th>
<th>CATHOLIC</th>
</tr>
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<tbody>
<tr>
<td><strong>Positive Pole</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extrovert</td>
<td>5.7</td>
<td>5.0</td>
<td>5.9</td>
<td>6.2</td>
<td>6.1</td>
</tr>
<tr>
<td>Agreeable</td>
<td>4.3</td>
<td>6.0</td>
<td>4.7</td>
<td>4.7</td>
<td>6.0</td>
</tr>
<tr>
<td>Conscientious</td>
<td>4.3</td>
<td>6.1</td>
<td>5.2</td>
<td>5.9</td>
<td>5.9</td>
</tr>
<tr>
<td>Emotionally Stable</td>
<td>4.2</td>
<td>6.3</td>
<td>4.9</td>
<td>4.5</td>
<td>5.3</td>
</tr>
<tr>
<td>Cultured</td>
<td>4.4</td>
<td>6.5</td>
<td>5.4</td>
<td>5.3</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Negative Pole</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introvert</td>
<td>4.8</td>
<td>6.2</td>
<td>4.8</td>
<td>4.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Disagreeable</td>
<td>6.0</td>
<td>4.5</td>
<td>5.5</td>
<td>5.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Unconscientious</td>
<td>5.5</td>
<td>3.7</td>
<td>5.0</td>
<td>4.3</td>
<td>4.1</td>
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<tr>
<td>Emotionally Unstable</td>
<td>5.8</td>
<td>4.8</td>
<td>5.9</td>
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<td>4.9</td>
</tr>
<tr>
<td>Uncultured</td>
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<td>4.5</td>
<td>5.1</td>
<td>4.7</td>
<td>5.1</td>
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Table 3.
Mean recall of traits within the two poles of the Five Personality Dimensions and the Five Ethnic Cue Conditions.

<table>
<thead>
<tr>
<th>Ethnic Cue Condition</th>
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<th>WHITE</th>
<th>JEW</th>
<th>CATHOLIC</th>
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<tbody>
<tr>
<td><strong>DIMENSION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Positive Pole</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extroversion</td>
<td>65</td>
<td>50</td>
<td>58</td>
<td>50</td>
<td>53</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>30</td>
<td>53</td>
<td>33</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>38</td>
<td>30</td>
<td>45</td>
<td>40</td>
<td>38</td>
</tr>
<tr>
<td>Emotionally Stable</td>
<td>43</td>
<td>45</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>Cultured</td>
<td>48</td>
<td>73</td>
<td>68</td>
<td>38</td>
<td>55</td>
</tr>
<tr>
<td>Negative Pole</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extroversion</td>
<td>50</td>
<td>53</td>
<td>33</td>
<td>28</td>
<td>33</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>28</td>
<td>35</td>
<td>45</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>20</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>40</td>
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<tr>
<td>Emotionally Stable</td>
<td>48</td>
<td>60</td>
<td>95</td>
<td>38</td>
<td>45</td>
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<tr>
<td>Cultured</td>
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<td>43</td>
<td>28</td>
<td>35</td>
<td>41</td>
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</table>
Table 4.
Mean ratings on each personality content category for both Black and Asian target persons (7 means very stereotypic, 1 means not at all stereotypic).

<table>
<thead>
<tr>
<th></th>
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</tr>
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<tbody>
<tr>
<td>BLACK</td>
<td>5.98</td>
<td>2.72</td>
<td>2.73</td>
<td>3.06</td>
<td>1.98</td>
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<tr>
<td>ASIAN</td>
<td>3.13</td>
<td>5.03</td>
<td>5.45</td>
<td>4.79</td>
<td>4.88</td>
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</table>
Table 5.

Average percentage immediate free recall of behaviors from the personality content.

<table>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BLACK</td>
<td>58</td>
<td>32</td>
<td>24</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>ASIAN</td>
<td>42</td>
<td>24</td>
<td>42</td>
<td>21</td>
<td>34</td>
</tr>
</tbody>
</table>
Table 6.

Mean recognition confidence ratings of behaviors from the five personality content categories in the two ethnic cue condition (7 means very confident, 1 means not at all confident).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BLACK</td>
<td>5.68</td>
<td>3.71</td>
<td>4.00</td>
<td>3.35</td>
<td>2.70</td>
<td></td>
</tr>
<tr>
<td>ASIAN</td>
<td>3.23</td>
<td>4.56</td>
<td>5.50</td>
<td>4.77</td>
<td>4.91</td>
<td></td>
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</tbody>
</table>
Table 7.
Average number of traits included within each of the eleven categories in Experiment 4.

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>MEAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extroversion</td>
<td>1.7</td>
</tr>
<tr>
<td>Introversion</td>
<td>0.5</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.6</td>
</tr>
<tr>
<td>Disagreeableness</td>
<td>1.1</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.7</td>
</tr>
<tr>
<td>Unconscientiousness</td>
<td>0.3</td>
</tr>
<tr>
<td>Emotional stability</td>
<td>0.4</td>
</tr>
<tr>
<td>Emotional instability</td>
<td>0.4</td>
</tr>
<tr>
<td>Cultured</td>
<td>0.9</td>
</tr>
<tr>
<td>Uncultured</td>
<td>0.9</td>
</tr>
<tr>
<td>None of the above</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Figure 1. Figure presented to subjects for the three Racial Cues.
Figure 2. Figure presented to subjects for the two Religious Cues.