

/SCHEMATIC PROCESSING OF INFORMATION
ABOUT A MENTALLY RETARDED PERSON/

by

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A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Psychology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1985

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Acknowledgments

C. 2 I wish to express my sincere appreciation to Dick Harris, my major professor and dear friend, for his scholarly guidance and personal support throughout the course of this research and this first year of graduate school. As my advisor, Dick provided helpful, clear and accurate information. As a friend, he took the time to listen to my concerns as I made the rocky transition from career to graduate school. I want to also thank Leon Rappaport and Jim Shanteau for serving on my committee and for their helpful comments. I am also grateful to my wife, Emily, who frequently bolstered my spirits and gave me the energy and vision needed to complete this project. Finally, I wish to thank my son, Scott, who played with me and helped me not to take this project or life, in general, too seriously. Without Scott, I am certain that I would have never studied mental retardation or the mentally retarded. For this reason, this thesis is dedicated to him.

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INTRODUCTION

The present study was designed to examine the schematic processing of information about a mentally retarded person. In the first part of the literature review that follows, an explanation of the constructive nature of memory in the context of information processing theory is given. This is followed by an explanation of schema theory and the role of schemata in social perception. Finally, a review of the research on attitudes toward mentally retarded people is offered.

Information Processing and the Constructive Nature of Memory

Psychologists have long recognized the constructive nature of memory. The idea of memory as a constructive process refers to the idea that people do not literally store and retrieve information but rather modify it in accordance with their beliefs and the environment in which it is received. More specifically, information acquisition and comprehension as a constructive process presupposes that an understanding of new information will require reference to knowledge already possessed, such as attitudes and beliefs, and that comprehension is a product of the interaction of

the stimulus information and the context in which it is given (Spiro, 1983). This approach, sometimes referred to as the interactionist position, assumes that there is an interaction between new and stored information such that both are altered or affected by each other.

This is seen, for example, in psycholinguistic studies on inference which have shown that meaning is constructed beyond what is explicitly stated in the text (Harris, 1981; Singer, 1984). Inferences function to make relationships between new and old information, provide some structure to the integrated information and fill the "slots" of the new structure (Warren, Nicholas, & Trabasso, 1979).

So-called "pragmatic inferences" are seen in the work done by Johnson, Bransford and Solomon (1973). They found that subjects who read that a pitcher fell to the ground made the pragmatic inference that it broke. Harris (1974) presented subjects with complex sentences (Miss America said that she played the tuba). Some subjects were asked to judge the truth of the complement (Miss America played the tuba) at the end of the entire list (memory group), and others were asked to judge after each sentence (comprehension group). Subjects in the comprehension group judged the

sentences as indeterminate if the complement had no logically necessary truth value, and subjects in the memory group judged sentences according to their invited inference. Thus it appeared that over time subjects tended to evaluate truth values increasingly inferentially.

Bransford and Johnson (1972) showed the importance of overriding thematic factors external to the text itself for the integration and understanding of information. The contextual information of a story was given in a visual scene depicting a love-stricken youth serenading his lover with an electric guitar aided by amplifiers suspended in the air by balloons in front of her fifth-storey window. Some subjects saw the picture prior to reading the text and some after. Some subjects saw only certain elements of the picture, and for some, no extra-textual information was provided at all. The only condition in which subjects were able to recall a substantial amount of information about the passage was the one in which the contextual information (complete picture) was given before the passage was read. The researchers concluded that comprehension required relating the text to information external to it.

Research by Sulvin and Dooling (1974) suggests that extra-textual information not only helps encode the material to be remembered but also creates memory for information that is not actually presented. They presented stories to subjects and told them that either the story was about a famous person, e.g., Helen Keller, or an unknown person. They found that as delay in recall increased, subjects began remembering sentences appropriate to the person, Helen Keller, but not actually presented in the text.

Argument for the "reconstructive" view of memory is also supported by the work of Spiro (1977). He had subjects read a story which described an engaged couple who were in disagreement about whether or not to have children. Subjects who were told later that the couple eventually were married were found to produce errors in delayed recall that was in accordance with the discrepant information (e.g., recalling that the couple settled their differences about the whether to have children).

Finally, effects on inference processes have been studied using different types of prose materials such as stories (e.g., Thorndyke, 1977), and conversations (e.g., Bates, Masling & Kintsch, 1978). Also, research

has included studies which have application outside the laboratory including work in eyewitness memory (e.g., Loftus & Zanni, 1975), courtroom testimony (e.g., Harris, 1978), advertising (e.g., Harris, Dubitsky & Bruno, 1983), and diagnostic studies (Arkes & Harkness, 1980).

A general conclusion of the studies cited above is that people typically draw inferences from stimulus information. That is, the reader or hearer constructs meaning by going beyond what is explicitly given. Implicit in this research is the idea of memory as involving the active and interactive construction of new and old information. In the literature review that follows, this idea of memory as a constructive process is related to schema theory and research. As will be indicated, the idea of schemata as active representations of knowledge has been central in research in the role of schema in the memory process.

Schema Theory

Modern schema theory has its roots in Bartlett's work Remembering (1932), in which he defined a schema as "an active organization of past reactions, or past experiences, which must always be supposed to be operating in any well adapted organic response" (p.

210). Bartlett's mentalistic approach was effectively ignored by the behaviorism which dominated the study of psychology in the United States until the 1960's. Chomsky's (1965) work in generative linguistics, among other influences, presented a formidable challenge to the S-R tradition and provided a new climate which allowed for the acceptance of the earlier idea of schema which emphasized, with Bartlett, the active aspects of human cognition and schemata (Brewer & Nakamura, 1984).

Although modern definitions of schema vary, generally schemata are referred to as knowledge structures which represent general concepts stored in memory. Rumelhart (1980) states: "... it is useful to think of schema as a kind of informal, private, unarticulated theory about the nature of events, objects, or situations that we face. The total set of schemata we have available for interpreting our world in a sense constitutes our private theory of the nature of reality." (p. 37) Schema theory thus offers an understanding of how knowledge is represented and predicts how this representation influences the use of knowledge.

In Brewer and Nakamura's (1984) recent and comprehensive review and critique of the literature, the authors conclude that schemata clearly operate in three memory processes: as frameworks to preserve schema-related information (e.g., Bransford & Johnson, 1972); in integrating old schema-based information with new episodic information with the result being that of improved memory for schema-based episodic information (e.g., Chiesi, Spilich, & Voss, 1979), and in retrieval to facilitate the location of schema-related information (e.g., Wyer, Srull, Gordon & Hartwick, 1982). For all their support of the active role of schemata in memory, however, these researchers are not totally convinced of the adequacy of schema theory for explaining memory, pointing to studies which find memory for schema-unrelated information to be better than memory for schema-related information (e.g., Thorndyke & Yekovich, 1980).

Other findings inconsistent with schema theory are provided by Hastie's (1980; Hastie & Kumar, 1979, Experiment 3; Hastie & Mazur, 1978) "incongruence level experiments" in which he discovered higher recall of information that is incongruent with person impression than information that is congruent with it. Finally,

Alba and Hasher (1983) present evidence inconsistent with schema theory (e.g., Alba, Alexander, Hasher & Caniglia, 1981) and propose that the stored record of any event is far richer and detailed than schema theory would suggest.

Mixed support for the role of schemata in the memory process may in part be because the concept itself is so "ill-defined" (Brewer & Nakamura, 1984). This is not to deny the heuristic value for understanding social and cognitive phenomenon, however. Compared to other constructs which have been used to explain, for example, social perceptions (e.g., beliefs, attitudes), the concept of schema has several advantages. For example, by virtue of the cognitive understanding of schemata, cognitive techniques may be used to understand and predict the processes of information comprehension, including information about social events. In contrast, the study of attitudes, which has traditionally focused on social learning experiences and motivational factors of the attributor, has not explained the process of social behavior (Taylor & Fiske, 1981). (Further discussion of these two particular approaches to understanding social behavior will appear in the postscript.)

The Role of Schemata in Social Perception

The present study focuses on the role of schemata in the memory of persons, sometimes referred to as "person memory" (e.g., Hastie, Ostrom, Ebbesen, Hamilton & Carlston, 1980) or impression formation (e.g., Hamilton, Katz & Leirer, 1980), or more broadly, social cognition or social inference (e.g., Wyer & Carlston, 1979; Fiske & Taylor, 1984). Also pertinent to this study is an understanding of stereotypes as a product of social inference and thus explanatory of memory for persons (Borgida, Locksley & Brekke, 1981; Hamilton, 1981).

Schema theory suggests that memory for persons exists as schema representations constructed from past and current information (Snyder, 1979). With respect to person perception, research indicates that perceivers have schemata for organizing and storing information both about others and themselves (Markus, 1977; Rogers, Kuiper & Kirker, 1977; Hamilton, Katz & Leirer, 1980). For example, the self as a referent point in the perception of others has been seen in free descriptions of other people (Lemon & Warren, 1974), attribution judgment (Ross, 1977), and the processing of

information about the unknown other (Kuiper & Rogers, 1979).

"Self-schemata" (Markus, 1977), which are defined as "knowledge structures used to understand, explain, or integrate one's own behavior in particular situations" (Markus & Smith, 1981, p. 240), are believed to interact with incoming information and produce a biasing effect. Cantor and Mischel (1977), for example, identified several kinds of biases in recognition memory related to the personality of the target person, and Markus (1977) found that resistance to incorrect personal information was related to self-perception.

More recently, the concept of self-schema has proved useful in understanding the role of "gender-based" schematic processing of information about the self and others. Bem (1981) showed that sex-typed individuals organize their self-concepts and understandings of others in terms of sex-linked associations that constitute a gender schema. Markus, Crane, Bernstein and Siladi (1982) gave support to this biasing effect when they found that persons classified as masculine or feminine "schematics" endorsed more qualities, recalled more words, and supplied more

examples consistent with traditional gender identity. Markus and Smith (1981) concluded that individuals differentially process information about others that is relevant to their own schematic domain.

Schema theory suggests that the perceiver has some kind of "schema structure" based on past experiences with person-related information in terms of which information is encoded (Hamilton, Katz & Leirer, 1980). Researchers have typically referred to such schema structures as one's implicit personality theory (Rosenberg & Sedlak, 1972; Schneider, 1973), or the perceiver's implicit notions about the normative co-occurrence of traits related to people. One consequence of the person's implicit personality theory is that it becomes the basis for making inferences about a person. Taylor and Crocker (1981) have shown that perceivers frequently go beyond the information available about a person and in some cases actually use available schemata to fabricate new information in order to fill in the gaps in forming an impression.

An example of this is seen in a study by Cantor and Mischel (1977) mentioned above, in which judges received information about stimulus persons that conveyed either extraversion, introversion, or neither

of these characteristics. After reading a list which included original and new traits, the judges were asked to recall whether each trait was from the original stimulus list, and to estimate the extent to which the stimulus person possessed the trait. A biasing effect was observed: stimulus persons were judged to have new traits associated with extraversion if they had been previously described by traits typical of an extravert, regardless of whether they had been explicitly characterized as extraverted or introverted. In addition to this biasing effect, judges were observed recalling traits that were not in the original stimulus set as having been in the set if they were consistent with the personality type presented by the stimulus. These findings lend support to the idea that people make inferences about others based upon the activation of a previously formed schema of a person or group, and that the bias in favor of the schema is so strong that the perceiver will recall descriptions of the other person that were never presented.

In another study, Arkes and Harkness (1980) presented eight symptoms related to Down's syndrome and four unrelated symptoms to students in a speech and hearing class. Later, when asked to make a diagnosis,

it was found that students falsely recognized symptoms not presented earlier that were consistent with the diagnosis. The results, typical of many studies in the schema literature, showed that persons tend to falsely recognize unrepresented features of a schema, which in this case was invoked by the diagnosis.

Finally, Snyder and Uranowitz (1978) presented biographical material about a woman named Betty K. and informed some subjects that she was a lesbian, others that she was heterosexual, and still others learned nothing at all about her sexual preference. The impact of this information on recognition memory was tested one week later. It was found that subjects selectively remembered events that supported the information about Betty's sexual preference. These researchers concluded that the results of their experiment were the product of an interaction between stereotyped beliefs about sexuality and memory for factual events.

Other research on the role of schemata in impression formation include schemata related to knowledge about the actor's occupation (Ostrom, Linge, Pryor & Geva, 1978); race or ethnic group (Taylor, Fiske, Etcoff & Ruderman, 1978); and sex or sexual preference (Ashmore, 1981; Snyder & Uranowitz, 1978).

In the Taylor, Fiske, Etcoff and Ruderman (1978) study, subjects observed a simulated discussion in a group of persons, half of whom were white and half black. When asked later to recall what had been said, subjects were able to say accurately whether a black or white person had made a particular comment but were less accurate in identifying exactly which individual person had made the comment. In other words, subjects were seen as organizing information around categories of group membership, in this case, race.

In the area of social perception, similarity between the idea of schema seen in the research cited above and stereotyping is easily observed. Hamilton (1979) suggests that stereotypes can be viewed as schemata, in that they represent what a person has come to believe or expect regarding members of some social group, and they perform many of the same functions as schema structures (Hamilton, 1981). The idea of stereotypes as schemata implies that information congruent with a stereotype will be more likely to be attended to, comprehended, and represented in memory than will be information unrelated to the stereotype (Rose, 1981). One implication of this is that, once the schema for a member of a social group, e.g., black

people, has been constructed, future reference to a particular black person would be in terms of the previously formed impression rather than based totally on any new information acquired. Spiro (1977), in fact, demonstrated that as time passes, what is known to be true and what is believed to be true become increasingly fuzzy, with the result that errors in recall and judgment may occur.

One explanation for this distortion in perception is offered by Snyder (1981), who believes that when a person attempts to remember and interpret events in another person's life history, personally-held stereotypes serve to generate "behavioral confirmation" for themselves. In one study, Snyder, Tanke and Berscheid (1977) tested the widely held stereotype that physically attractive people possess more socially desirable personalities and experience more success in their personal and social lives than unattractive persons. They had male subjects interact with female targets over a telephone. Prior to the phone conversation, the subjects were given snapshots of the woman with whom they would supposedly be conversing. In actuality, the pictures were randomly given to the subjects. These photographs included pictures of women

independently judged to be attractive or unattractive. Judges listened to tape recordings of the phone conversations and evaluated the behavior of the conversants. The results of their evaluations showed that those men who anticipated physically attractive women expected interaction with sociable, poised, and socially adept persons, whereas men who anticipated physically unattractive women expected interactions with person who were unsociable, awkward, and socially inept.

Behavioral confirmation of the stereotype was also observed in the different styles of interaction between the partners. Not only did men interact differently according to how attractive they perceived their partner to be, but women responded in kind. That is, those women whom male subjects believed to be attractive behaved in a friendly and sociable way and those believed to be unattractive behaved in an opposite manner. Snyder and his colleagues concluded that the schema, in this case stereotype-based beliefs about attractive and unattractive people, initiated a chain of events that produced actual behavioral confirmation of these beliefs.

In conclusion, one can see the importance of schema in the theory and research of cognitive psychology, particularly psycholinguistic research and social cognition studies. Unfortunately, theoretical discussions of schema and schema theory reflect a reluctance to be specific regarding the definition of schema. For example, Rumelhart's (1980) theoretical treatment of schema lists a few basic understandings of schema theory, while the bulk of his essay is devoted to a presentation of analogies designed to help understand the nature of schemata. No formal description of schema is offered.

The lack of definitive ideas regarding schema has led some (e.g., Brewer & Nakamura, 1984; Thorndyke & Yekovich, 1980) to conclude that schema theory is still in the beginning stages and in need of development. An attempt at furthering the understanding of the role of schema in social perception is made in this study by focusing on the social perceptions of an identified group of people, namely the mentally retarded. Specifically, a comparison of memory for factual events about a person (named John K.) is made between subjects who receive information that John is retarded and those who do not receive this information. In the next

section, a review of the literature on attitudes towards mentally retarded people is offered.

Attitudes Toward Mentally Retarded People

Mental retardation is a term of wide and varied meaning and application (Thomas, 1978). It includes persons with chromosomal abnormalities such as Down's syndrome, those whose central nervous systems have been injured or have not developed properly, and those with very slow development from unknown causes. It covers both young and old persons who share generally low, but varied, levels of mental and social functioning. To some it refers to persons who have not met normal educational and social standards at some particular time. For others it is a stigma that lasts a lifetime.

According to some studies (e.g., Gottlieb, 1975), social attitudes about retarded persons are as varied and diverse as the meaning attached to the term. Generally, though, investigations of attitudes toward mentally retarded persons reveal that they are frequently perceived more negatively than are nonretarded persons (e.g., Goodman, Gottlieb & Harrison, 1972). For example, studies examining nonretarded students' acceptance of their retarded classmates, most of which have followed the

mainstreaming of mentally retarded children in the U.S. into regular classes in 1975, show that negative attitudes frequently prevent full acceptance (e.g., Corman & Gottlieb, 1978).

In addition to the large number of acceptance studies is research examining stereotypic attitudes toward retarded people. These include: attitudinal level of personnel involved in the field of mental retardation (White, 1981), judgments of the mentally retarded toward their retarded peers (Budoff & Siperstein, 1982), effects of the label "mentally retarded" on the attitude of others toward the mentally retarded (Severance & Gasstrom, 1977), parents' and teachers' perception of the mentally retarded person's ability to achieve academic success (Lavelle, 1978; Severance & Gasstrom, 1977, respectively), employers' attitudes toward retarded workers (Stewart, 1977), and judgment regarding the mentally retarded person's predisposition to emotional instability (O'Connor & Tizard, 1956).

Research indirectly related to the attitude studies on mentally retarded persons include studies on stereotypic attitudes toward handicapped children in society at large (Gottlieb & Gottlieb, 1977),

television's portrayal of the handicapped (Donaldson, 1981), physical stigma as negatively affecting nonhandicapped children's first impressions of handicapped peers (Siperstein & Gottlieb, 1977), and the negative evaluation about mothers of handicapped children in comparison to mothers of nonhandicapped children, referred to as stigma contamination (Render, 1982).

Along with this research are undocumented observations of stereotypes and myths about mentally retarded persons by practitioners working with retarded persons in clinical and educational settings. Included are false, and frequently negative, assumptions about intellectual capabilities, sexual habits and desires, emotional stability, vocational capabilities, personality attributes, social deviance and proneness to criminality, and physical defects and handicaps (Schulman, 1980).

Finally, with respect to what people perceive as the likelihood of a mentally retarded person's achieving success in life, studies have produced conflicting results. Severance and Gasstrom (1977) concluded that the label, "mentally retarded," has a negative influence upon the assessments of a retarded

person's abilities. On the other hand, MacMillan, Jones and Aloia (1974) claimed that there was no evidence to support the idea that the label itself created negative assessments. Farina, Thaw, Felner and Hust (1976) found that mentally retarded children were treated more leniently when they failed in a learning/shock machine experiment.

One explanation for these results is offered by Gibbons, Sawin and Gibbons (1979) who found that subjects assigned more responsibility for the retarded person's outcomes to situational factors, and that subjects reported less expectation of future success from the mentally retarded person on various kinds of behavior. This evaluation pattern, of reduced blame after failure and reduced credit for success, was termed a "patronization effect." These researchers concluded that success is not expected from retarded persons, and, when retarded persons are successful, the credit due to them is frequently ascribed to situational factors over which they have had little control. Such negative assessments of mentally retarded persons lend support to the conclusion of Edgerton (1967) in his classic study of the stigma of mental retardation: "No other stigma is as basic as mental

retardation in the sense that the person so labeled is thought to be so completely lacking in basic competence..." (p. 5).

Despite the plethora of literature on attitudes toward mentally retarded persons, several weaknesses in the research exist. One problem is the representativeness of the research (Gardner & Veno, 1979). For example, in a survey study by Stewart (1977), cited above, he concluded that employers were reluctant to employ handicapped people in the areas of sales and dry cleaning. Yet because employers were only queried about their handicapped workers, it is impossible to determine whether factors other than negative attitudes toward the handicapped, e.g., a recession, influenced employers' reluctance. The result of these and other similar types of studies has been a body of research mostly limited to the study of specific attitudes or the attitudes of specific samples. One might conclude that the research to date is thus not representative of the whole range of conditions that affect peoples' responses to mentally retarded persons and that the findings are therefore limited in their generalizability.

Finally, while much of the research agrees that people typically distort learned information about retarded people in accordance with beliefs about them, none of these studies has directly and systematically addressed the role of memory for a retarded person in stereotyping. Also, none have looked at the retarded issue in terms of schema theory or cognitive theory in general.

In response to the needs identified, the experimental design used in the present study differed from past research in three ways. First, it permitted the study of a broad range of attitudes. In contrast to the Stewart (1977) study, for example, which primarily studied a single attitude, the present study examined fourteen different attitude categories. Second, the research was designed to assess the attitudes of the population at large, rather than a specific population. Specifically, one of the goals was to understand current societal attitudes toward the mentally retarded and to empirically verify the stereotypes that have been identified in the literature on retardation. Third, by studying the role of memory for retarded persons, the present project represented a new approach to understanding attitudes toward the mentally

retarded. Also, representing a conceptual uniting of cognitive and social psychological research, it attempted to extend the literature of both by dealing with memory, a topic rarely addressed directly by traditional social psychology, and by focusing on a subject that has not been addressed in social cognition research, namely, attitudes toward mentally retarded persons.

Experiment 1

The purpose of Experiment 1 was to identify current social perceptions and stereotypes of mentally retarded persons and gather data to be used in constructing materials for Experiment 2. Subjects were asked to judge statements about a person in terms of whether they were consistent, inconsistent or neutral with the social perceptions of mentally retarded persons. With this information, the schema for retarded persons was identified. The effect of the schema on subjects' memory for information about a retarded person was measured in Experiment 2.

Method

Subjects. Seventy-seven undergraduate psychology students who have been U.S. citizens for at least ten years served as subjects and received course credit for

participation in an experiment on "social perceptions of mentally retarded persons." Due to the length of the 183-item questionnaire used, 38 of the 77 subjects responded to items 1 - 95 and 39 subjects responded to items 96 - 183. Subjects were run in groups ranging from 1-19 in sessions lasting 40-50 minutes.

Materials. The materials consisted of a questionnaire (see Appendix A) which included 183 statements about a fictitious person named John K. These statements were to be rated on seven-point scales, with number 1 as "definitely false" and number 7 as "definitely true." The first page of the set of scales presented to subjects appears in Appendix B. The scales also included an alternative marked "neutral." Along with these was a questionnaire (see Appendix C) designed to ascertain subjects' previous experience with mentally retarded persons.

The statements about John K. to which subjects responded were derived from an approximately 1000-word story, explained below, written by the experimenter. Most statements reflected identified stereotypes of mentally retarded persons. For example, the statement, "John had a speech impediment," was intended to be consistent with the stereotype of retarded people as

persons who have physical, as well as mental, handicaps. On the other hand, the statement "Many people perceived John as a successful person" was intended to be inconsistent with stereotyped beliefs about mentally retarded people as persons who are not capable of experiencing success as defined by normal standards.

Fourteen stereotype categories identified in research on attitudes toward the retarded were used in developing the test items. These included beliefs about intellectual and academic capabilities (Severance & Gasstrom, 1977), social acceptance and perception (Corman & Gottlieb, 1978), stigma contamination (which is seen when the stigma of retardation carries over to members of the retarded person's family) (Render, 1982), response of family members (Render, 1982), athletic and physical abilities (Schulman, 1980), physical handicaps (Schulman, 1980), vocational success (Stewart, 1977), proclivity to criminality (Schulman, 1980), relationships with the opposite sex (Schulman, 1980), independent lifestyle (Schulman, 1980), physical appearance (Sipperstein & Gottlieb, 1977), emotional stability (O'Connor & Tizard, 1956), and perception of success in life by others (Severance & Gasstrom, 1977).

Along with these were two categories - positive life experiences and irresponsible lifestyles - which have not been identified in the research as areas of stereotyping, but were of interest to the experimenter.

Procedure. Subjects were given a list of statements about a fictitious person named John K (see Appendix A). They were instructed to read each statement and indicate on a seven-point scale whether they believed it was true (consistent), false (inconsistent) or neutral with the social perceptions of a mentally retarded person.

After all the subjects completed this questionnaire, they filled out the questionnaire on previous experience with mentally retarded persons (see Appendix C). Subjects were dismissed after the experimenter explained the experiment to them.

Results

Subjects' responses to the follow-up questionnaire were compared in order to assure that both groups, i.e. those who responded to items 1 - 95 and those who responded to items 96 - 183, had had similar previous experience with mentally retarded persons. Mean responses for subjects in both groups varied no more

than 1.2 points and it was concluded that subjects' experiences with retarded people were similar.

Mean responses, calculated from the seven-point scale, and the number of neutral responses were figured for each item. The criterion used to decide whether an item was neutral with the schema was that, if 14 or more of the 39 subjects responded that the item was neutral, it was then classified as neutral. Fifty-two out of the 183 items were thus identified. Table 1 includes the number of neutral responses and the mean of these responses for each item.

Consistent and inconsistent items were chosen from the remaining 131 items. This information was used in Experiment 2 in order to test the effect of the schema for retarded people on subjects' memory for information contained in a narrative about a retarded person. The criterion used was that, if the mean response on the seven-point scale to an item was 2.6 or below, the item was classified as inconsistent. If the mean was 5.4 or above, the item was classified as consistent. All consistent and inconsistent items had 25 or more non-neutral responses, i.e., were rated by at least 25 of the 38 subjects.

The results were that 32 items were rated as inconsistent and 29 items rated as consistent with the social perception of mentally retarded persons. These appear in Tables 2 and 3. Also, as stated above, fourteen stereotype categories were identified in the mental retardation research. The category to which each item was assigned is seen in Tables 2 and 3 in the parentheses under each item.

Means and frequency counts were calculated from the follow-up questionnaire used to assess subjects' familiarity with mental retardation and mentally retarded persons. These figures appear in Table 4.

Discussion

One of the purposes of Experiment 1 was to assess current beliefs and stereotypes of mentally retarded persons, as well as to empirically confirm the literature on stereotypes of retarded people. The results would suggest support for some of the stereotypes of retarded persons identified and predicted in the literature. Below is a discussion of the results in each category, starting with those categories in which more than 50% of the items were seen as either consistent or inconsistent with the stereotype.

With respect to intellectual and academic abilities, the fact that such a high percentage of the items were linked to the social perception of retarded people is not surprising, given that retardation is defined as low intelligence. The only item seen as neutral with the stereotype was that related to John's preference for science class. The results suggest no reasons why subjects rated John's preference for math as inconsistent with the stereotype but rated his preference for science as neutral.

In the category of social acceptance and social perception, items which described John as overly sensitive to the acceptance or rejection he felt from others, a loner, someone who was frequently pitied, someone who received more teasing than was typical, and a person with whom his peers felt uncomfortable were rated as consistent with the stereotype of retarded persons. The idea that John received teasing that was typical of children his age, didn't get along well with his classmates, and had no friends was seen as neither consistent nor inconsistent with the social perception. The results suggest that the perception of the retarded person is that of a person who is not easily accepted into social relationships including peer relationships.

While this lack of acceptance is generally perceived as the result of attitudes and actions of members of the social group, it is also seen as the result of the high sensitivity of the retarded person to his or her feelings of acceptance or rejection in the group.

With respect to physical and athletic abilities, items which described John as a motorcycle racer, a good pool player and a member of the school basketball team were rated as inconsistent with the stereotype. The idea that John watched but didn't play sports and that he lacked the coordination to play basketball were seen as consistent with social beliefs. An item which described John as enjoying playing basketball was rated as neutral. The results would suggest that the perception of retarded people is that they do not have the physical abilities to qualify for participation in competitive sports or to attain some degree of excellence in an activity which requires, at minimum, normal fine motor skills. In addition, the stereotype suggests a person who does not have the abilities to participate in athletic events and, in fact, one who does not participate in such events.

Regarding emotional stability, rater-subjects judged items which described John as a person who

easily became emotionally upset, frequently needed professional counseling and had sessions with the school counselor as consistent with the perception of retarded people. The idea that John was an emotionally strong person was judged as neither consistent nor inconsistent with the stereotype but missed the criterion of inconsistent by one-tenth of a point. Also, the idea that John spent time in a mental institution was judged as neither consistent nor inconsistent. More items are needed in order to clearly identify facets of the stereotype. However, the results would suggest that retarded people are perceived as emotionally vulnerable.

With respect to physical appearance, items which described John as resembling a handsome actor, being a stylish dresser, and considered to be quite handsome were rated as inconsistent with the stereotype. The idea that John was physically unattractive was seen as consistent with the social perception. While more items are required for a clear assessment of the stereotype about physical appearance, it is noteworthy that all four items in this category were rated as either consistent or inconsistent with the stereotype.

In the category of physical handicaps, items which described John as having a speech impediment were seen as consistent with the stereotype of retarded persons. The idea that John had no physical handicaps was rated as neither consistent nor inconsistent with the stereotype. A clear stereotype about physical handicaps may be difficult to identify due to the variety of mental retardation conditions. In any case, more items are needed to clearly identify stereotypical beliefs of this category.

Regarding the perception of success, items which described John as one whom many perceived as successful or was expected to be successful were rated as inconsistent with the social perception of retarded persons. The idea that John had friends who were highly respected in the community was rated as neither consistent nor inconsistent with the stereotype. Again, more items are needed to clearly identify facets of this stereotype.

Categories which were not clearly identified with the stereotype (less than 50% of the items were seen as either consistent or inconsistent with the stereotype) were also of interest. One interesting finding was the low percentages of items rated as neither consistent

nor inconsistent in the categories of stigma contamination and family response and vocational success.

With respect to vocation, rater-subjects saw John's positions as gas station attendant, restaurant worker, postal worker and janitor as neither consistent nor inconsistent with the social perceptions of a retarded person. Also, the idea that John was in a job training program was rated as neither consistent nor inconsistent with the stereotype. Finally, the idea that John's manager hated to see John leave his job with him, that John was eager to work, and that John made more than just a minimal contribution to the overall operation of the restaurant in which he worked were all seen as neither consistent nor inconsistent with the social perception of retarded people. The results suggest a fairly positive perception of retarded persons with respect to the variety of jobs they are able to accomplish, their ability to be successful in these jobs, and their attitude toward their work.

Regarding stigma contamination and family response, subjects saw it as neither consistent nor inconsistent with the social perception that John's

twin brother completely accepted John, was not embarrassed by him, didn't ignore him, and expressed feelings of loneliness for him after leaving home. The idea that John's mother expressed confidence in John's ability to succeed in life, felt a sense of satisfaction about her parenting experience with John, and was not content to have John live with her indefinitely was rated as neither consistent nor inconsistent with the stereotype. It was seen as neither consistent nor inconsistent that John's brothers and sisters would not change a thing about John and that they saw their family life together as happy and normal.

In spite of these positive views of family members' response to John, it is worth noting that rater-subjects did see it as consistent with the social perception of mentally retarded persons that a direct relative of John's, his uncle, was retarded, that John's brothers and sisters were overly concerned and protective of John, and that John's mother worried too much about and was overly protective of John. Also, rater-subjects saw it as inconsistent that John's mother and other members of his family anticipated a time when John would marry and have a family of his

own. While the results are mixed, some of the responses are in line with the research on stigma contamination which suggests that the stigma of retardation carries over to members of the retarded person's family in terms of how they are perceived to respond to the retarded member and to each other. Further research is needed to see exactly where this stigma contamination operates. It may be that negative perceptions in this area are more specific than previous research suggests.

The categories of positive life experiences and irresponsible lifestyle were not identified in the literature but were included by the experimenter. It is therefore not surprising that low percentages of the total number of items in each category were rated as either consistent or inconsistent with the stereotype. Due to the low number of items in each of these categories, the existence of stereotypical attitudes in these categories cannot be fully assessed.

With respect to the research which identifies a stereotype of retarded persons as someone prone to commit criminal acts, all items which related John to criminal activity were rated as neither consistent nor inconsistent with the stereotype. Therefore the results provided no evidence to support or refute this

stereotype. It may be that attitudes in this area were cancelled out by other, no less negative, attitudes, such as the belief that retarded people are too passive or uninvolved in life in general to commit a criminal act. Future research will need to include more items in order to fully assess stereotypical attitudes in this category.

In two categories, relationships with the opposite sex and independent lifestyle, ratings of similar items were mixed. Items describing John as sexually active were either seen as inconsistent or neutral with the stereotype. The idea of retarded people as sexually active was never seen as consistent with the stereotype. The statement which describes John as living with a woman was judged as clearly inconsistent. However, it is not clear whether this inconsistency is identified with John's sexual involvement or with the responsibilities that come with living with someone. Equally ambiguous is the item, identified as neither consistent nor inconsistent with the stereotype, which describes John as being in an intimate relationship with a woman. Some items which describe John as being rejected by women were judged as consistent with the stereotype while other items were seen as neither

consistent nor inconsistent. The results therefore do not reflect a clear stereotype of retarded people regarding their relationships with the opposite sex. A possible explanation is that subjects held two contradictory stereotypes, one which sees retarded people as sexually loose and deviant and another which sees them as passive and uninterested, or even asexual or sexually incapable. Both stereotypes have been identified in the literature but neither is confirmed or disconfirmed by these results. This is an interesting topic and certainly one worthy of further research.

Regarding independent lifestyle, rater-subjects identified the idea that John lived with his mother and was content to do this as consistent with the stereotype. The idea that John never financially depended upon his mother and that he managed his finances well was seen as inconsistent with the stereotype. Items which described John as regularly receiving money from welfare and as running local errands on a motorcycle were seen as neither consistent nor inconsistent with the stereotype. The results, while mixed, would nevertheless suggest that retarded people are perceived as being dependent upon others for

the accomplishment of routine matters of daily living and that they are content to be in these dependent relationships.

Follow-Up Questionnaire. Results from the follow-up questionnaire (see Table 4), which was designed to ascertain subjects' familiarity with retardation and retarded people, revealed that, while the majority (74%) of subjects knew at least one person who was mentally retarded, they did not consider themselves to be very familiar with this person (Mean = 4.5) and they did not meet and talk with this person very often (M = 4.9). Relatively few subjects (24%) knew anyone with Down's syndrome. These subjects considered themselves to be more familiar with the Down's syndrome people they knew (M = 3.7), relative to subjects' response to retarded persons in general, but met and spoke less often with them (5.33). Subjects had infrequent contact with persons who worked with retarded persons (M = 4.9) and did not consider themselves to be very knowledgeable about mental retardation (M = 4.32). Subjects responded that they had some uninvolved contact with retarded people (M = 3.7) but little exposure to the topic of mental retardation (M = 4.3). While subjects expressed some

desire to know more about mental retardation ($M = 3.6$) there was no strong desire to become personally acquainted with a retarded person ($M = 4.2$). Since the means are generally close to the mid-point of the scale, no clear conclusions can be drawn regarding general trends in familiarity. These results will be important in Experiment 2 in comparing the equality of familiarity of subjects in both experiments.

In conclusion, the results of this experiment suggests that the range of attitudes toward mentally retarded people is quite large and diverse. Within some categories explored in this study, however, stereotypical beliefs tend to be strong and well defined. With the exception of vocational potential, beliefs about mentally retarded people tend to be quite negative. Retarded people are seen as considerably limited in intellectual and academic abilities and physical and athletic capabilities. They tend to be perceived as emotionally vulnerable and heavily dependent upon others for the accomplishment of routine tasks. As a social group they are seen as not fitting into social circles, and they are perceived to be generally unsuccessful in their relationships with the opposite sex. Members of the retarded person's family

are seen as very protective of and highly involved in the retarded person's life. Also, it would appear that the stigma of retardation carries over to other members of the retarded person's family, affecting how they are perceived by others outside the family.

Regarding categories in which strong beliefs were not identified, it may be that the specific aspects of the stereotype for retarded people are inconsistent with each other. For example, the mixed results reported for the category of relationships with the opposite sex may be due to the fact that subjects held contradictory beliefs. Thus their responses cancelled each other out and no clear stereotype was seen. This study provided no direct evidence for this and future research is needed.

Finally, with respect to subjects' judgment of current stereotypes of retarded people, it is uncertain whether the opinions of the sample used are representative of the beliefs of the population. The first question in this regard is, have subjects, who are predominantly between the ages of 18 and 21, had enough experience to be able to make correct judgments regarding social beliefs and stereotypes about the mentally retarded? It is possible, for example, that

inexperienced subjects had little or no opinion at all about such beliefs. In this case, the responses would have been biased toward the middle of the scale. This may account for the lack of a clear stereotype in the categories identified above. Assuming that subjects did have the knowledge and experience necessary to make correct judgments, the second question is, were they willing to express them accurately or did they express more socially desirable, and less accurate, opinions. To prevent socially desirable responses, subjects were specifically instructed to indicate not what they they believed about retarded people but what they thought other people believed. However, the social pressure to not express negative thoughts and opinions about retarded people may have been so strong that such an objective evaluation was effectively precluded.

The stereotype of retarded people examined in Experiment 1 was used in the next experiment to represent a schema for retarded people. Specifically, the scores obtained in this first experiment were used in Experiment 2 for the selection of items for a memory test about events contained in a narrative about John.

Experiment 2

The purpose of Experiment 2 was to test whether there is an interaction between current stereotyped beliefs about mentally retarded persons, as obtained from Experiment 1, and subjects' memory for descriptions of the life of a person who may or may not be identified as mentally retarded.

Method

Subjects. One-hundred-and-ninety-five undergraduate psychology students from the same subject pool as Experiment 1 participated in a two-session experiment on memory for information about a person's life called "Memory for John K."

Materials. Three approximately 1000-word narratives (see Appendices D, E and F), giving a brief biography from the life of John K., were used. A memory test (see Appendix G), along with a seven-point answer sheet scale with number 1 as "definitely false" and number 7 as "definitely true," were used. The first page of the set of scales presented to subjects appears in Appendix H. This answer sheet scale is identical to that used in Experiment 1, except that included next to each scale was an alternative marked "Information not given." The same questionnaire used in Experiment 1

(see Appendix C) was used to ascertain subjects' previous experience with mentally retarded persons.

The narrative about John K. describes events in his life from childhood to adulthood. It was written in such a way that, if the reader did not know that John was retarded, there would be nothing in the story that would necessarily lead him or her to believe this, nor was there anything blatantly inconsistent with such an interpretation. In other words, the narrative was constructed to "fit" either a retarded or nonretarded person.

Memory test items were selected based on responses in Experiment 1. Specifically, those items which were identified as consistent or inconsistent with the schema of mentally retarded persons were used. Along with these were included some of the items identified as "neutral," or having no relation to the social perception of a mentally retarded person, and some of the items that were rated as relevant but which did not meet the criterion for consistent and inconsistent items (i.e., the means were between 2.6 and 5.4). Neutral items were used to help prevent subjects from guessing the intent behind the items.

The method used for selecting inconsistent and consistent items is described in Experiment 1. As stated previously, the results were that there were 32 inconsistent items, 29 consistent items and 52 neutral items. Memory test items were also chosen according to whether they were true or false according to the information given in the narrative. For some items (labeled ING) no information was given in the narrative. Items were equally distributed into three categories: 1) Items consistent with the schema for retarded people that were either true (T/C) or false (F/C) according to the information in the narrative, or for which no information was given (ING/C); 2) Items inconsistent with the schema that were true (T/I) or false (F/I) according to the information in the narrative, or for which no information was given (ING/I); and 3) Items which either were rated neutral in Experiment 1 in relation to the schema or were rated relevant but did not meet the criterion for consistent and inconsistent items and were true (T/N) or false (F/N) according to the information in the narrative, or for which no information was given (ING/N). Thus there were nine types of items, with schema consistency completely crossed with truth value. Items in each of

the nine categories appear in Appendix I. (See Appendix J for a list of item abbreviations.)

Procedure. At the first session, subjects were told that this was a study designed to test their memory for events contained in a narrative. They were then instructed to read the story about John K. The three different narratives used, along with instructions to subjects, appear in Appendices D, E and F. At the end of the session, subjects were told to return one week later at which time they would complete a questionnaire which would test their memory for information contained in the story about John.

One week later, subjects were given a memory test for events contained in the narrative. This test, along with instructions to subjects, appears in Appendix G.

After subjects completed the memory test, they were given a questionnaire designed to ascertain their familiarity with mentally retarded persons and mental retardation. This was the same questionnaire used in Experiment 1 (see Appendix C). Following this, the experimenter read the following debriefing statement to the subjects:

"The narrative and questionnaire that
you have read and answered tested your memory

for a fictitious person named John K. All of you were given the same questions to answer about John but not all of you were given the same information about him. Approximately three-fourths of you were told that John was mentally retarded and the rest of you were not given this information."

"My purpose for giving this information to some of you and not to others was to test to see whether you would selectively remember and forget some information about John. I predict that those persons given the information that John was retarded will answer the question about him differently than those who were not given this information. Specifically, I predict that those given information about John's retardation will remember information that is congruent with socially held, stereotypic beliefs about mentally retarded persons. "

"If you are interested in finding out more about my experiment, including the results, you are welcome to discuss this with me at any time."

"Thank you for your cooperation."

Label Variable. An additional variable involved explicitly presented information about John's mental capabilities. Four groups were formed. (See Appendix J for list of group abbreviations.) The narrative read by the early-label (EL) group (see Appendix D), was identical to the narrative read by the other three groups except that it included the following information embedded toward the beginning of the narrative: "Shortly after John began grade school, he took several tests which evaluated his mental development. The tests confirmed what those close to John had always believed: John was mentally retarded. Periodic evaluations throughout his lifetime consistently showed that John was mentally retarded." There were 44 subjects in this group.

The narrative read by the late-label (LL) group (see Appendix E), included information about John's retardation embedded in the last paragraph of the narrative. It reads as follows: "Even though John and Susan are both mentally retarded, they believe that they can successfully live together, and they have talked about the possibility of getting married." There were 52 subjects in this group.

The narratives read by the no-label (NL) group and very-late-label (VL) group (see Appendix F), did not include information on John's retardation. Rather, at the beginning of the second session, one week later, subjects in the VL group were told that an additional piece of information about John K., not included in the narrative, would be read to them. They then listened to the description of John as mentally retarded (the EL group narrative version above) as it was read to them by the experimenter. Subjects in the NL group did not receive any information, written or spoken, informing them that John was mentally retarded but merely read the story as it appears in Appendix F. There were 49 subjects in the NL group and 50 subjects in the VL group.

The rationale for presenting the label before and after the narrative came from previous memory research. Specifically, researchers have demonstrated the role of thematic information presented at the beginning of a narrative in the encoding and organization of information (e.g., Bransford & Johnson, 1972) and after the narrative in the retrieval and reconstruction of information (e.g., Snyder & Uranowitz, 1978). The results of previous research which tested retrieval or

reconstructive error, however, have not been consistent. This is seen specifically in studies which have varied the timing of labels presented after a narrative. For example, Dooling and Christiaansen (1977) reported greater reconstructive error by subjects who received the label immediately after reading the narrative, while Loftus, Miller and Burns (1978) reported greater error with subjects who received the label much later. Snyder and Uranowitz (1977), on the other hand, reported no differences between errors committed by subjects who received immediate and delayed labels.

Design. A three-way factorial (4x3x3) was used. Factor 1 (between-subjects) is the position of the label (NL, EL, LL, VL groups). Factor 2 (within-subjects) is schema consistency of test items (consistent, inconsistent, and neutral items). Factor 3 (within-subjects) is truth value of the test items, according to the information given in the narrative (true, false, or information-not-given). Also, the memory scores of subjects in all three label groups were combined and compared with the NL group in order to determine whether the answers of subjects who learned that John was retarded were more consistent

with the schema for retarded persons than those who received no such information.

Results were also analyzed by using Chi square analysis. Chi squares were calculated on subjects' responses to items for which no information was given (ING items) in order to see if subjects who received no information about John's retardation (the NL group) would differentially remembered information from the narrative as compared to subjects who received information (the EL, LL and VL groups) about John's retardation.

Results and Discussion

Coding Procedure. Information-not-given responses were coded as "0"'s and thus were "read" by the computer as missing data. The procedure used for filling in missing data substituted all "0"'s with the mean of each subject's responses in the particular category in which the information-not-given response was classified.

Follow-Up Questionnaire. Means and frequency counts were calculated for the follow-up questionnaire (Appendix C) used to assess subjects' familiarity with mental retardation and mentally retarded persons. These appear in Table 5.

Results from the follow-up questionnaire which was designed to ascertain subjects' familiarity with retardation and retarded people revealed that, while the majority (67%) of subjects knew at least one person who was mentally retarded, they did not consider themselves to be very familiar with this person (Mean = 4.2) and they did not meet and talk with this person very often (M = 4.85). Relatively few subjects (19%) knew anyone with Down's syndrome. These subjects considered themselves to be less familiar with the Down's syndrome people they knew (M = 5.36), relative to subjects' response to retarded persons in general, and met and spoke less often with them (M = 5.45). Subjects had infrequent contact with persons who worked with retarded persons (M = 4.47) and did not consider themselves to be very knowledgeable about mental retardation (M = 4.1). Subjects responded that they had some uninvolved contact with retarded people (M = 3.53) but little exposure to the topic of mental retardation (M = 4.34). While subjects expressed some desire to know more about mental retardation (M = 3.68), there was no strong desire to become personally acquainted with a retarded person (M = 4.4). Since the means are generally close to the midpoint of the scale, no clear

conclusions can be drawn regarding general trends in familiarity.

An important finding is the similarity of these results with the results of the follow-up questionnaire collected in Experiment 1 (Table 4). Except for subjects' familiarity with persons with Down's syndrome (Item 2), mean responses for subjects in both experiments varied no more than four-tenths of a point per item. With respect to Item 2, it was seen as important that subjects had similar familiarity with Down's syndrome people, due to the unique traits that they possess in comparison to other retarded people. Although subjects in Experiment 1 were more familiar with Down's syndrome people ($M = 3.7$) compared to subjects in Experiment 2 ($M = 5.4$), subjects in both experiments reported that they rarely met and talked with these people ($M = 5.3$ and 5.5 , respectively). While it is possible that this greater familiarity in Experiment 1 could have biased the schema, it is not certain whether this difference had an impact on subjects' responses.

Hypotheses. Four hypotheses were proposed. First, it was hypothesized that subjects' memory for events in the story about John K. would differ according to

whether or not they had received information about John's retardation. One way of testing this is to compare subjects' responses to ING items. It was predicted that subjects who did not receive information about John's retardation (the NL group) would correctly remember that no information was given for the ING items. In effect, there should be more information-not-given, i.e. correct, responses for ING items judged to be consistent with the schema (ING/C items) and ING items judged to be inconsistent with the schema (ING/I items), given by subjects in the NL condition than for those in the other three conditions. Finally, there should be no differences in the memory of subjects in all conditions for ING items rated as neutral (ING/N).

The second hypothesis was concerned with differences in responses to ING items by subjects in the three label groups only. Specifically, it was of interest to see if subjects in certain label conditions more correctly remembered that no information was given for ING items in comparison to subjects in other label conditions. This was of interest because of previous research which focused on encoding and retrieval processes by manipulating the position of the label

(see above). One way to test this is to compare the number of information-not-given responses to ING items in each label condition.

Third, it was hypothesized that there would be an effect of label such that the three groups which received information that John was retarded (the EL, LL, and VL groups) would remember information about him in a way that was consistent with the schema for retarded persons. Specifically, in comparison to the one group that did not receive information about John's retardation (the NL group), it was predicted that subjects in the three label groups would remember consistent items as more true than inconsistent ones and inconsistent items as less true than consistent ones regardless of their actual truth value. One way of testing this to compare subjects' mean responses on the seven-point scale. Responses of subjects in the label conditions should be higher for consistent items and lower for inconsistent items regardless of whether these items were true or not according to the story.

Finally, it was hypothesized that there would be an effect of the position of the label such that the three groups which received information that John was retarded (the EL, LL, and VL groups), would

differentially remember information about John when compared to each other. This hypothesis is based upon past research which has examined encoding versus retrieval processes by testing the effects on memory of thematic information presented before and after a narrative. This research has produced conflicting results (see above), and, therefore, no specific predictions were offered.

Hypothesis 1. Chi square tests were used to compare the number of information-not-given responses in the NL condition with the number of such responses collapsed across the three label conditions. This involved a separate analysis of each item. Only one showed significant differences: Item 96: "Some of John's classmates felt uncomfortable around him," $p < .05$. This item was rated as consistent with the social perception of retarded people in Experiment 1. The difference is in the smaller number of information-not-given responses given by subjects in the NL group in comparison to the other three groups. This result is in contradiction to the prediction that subjects in the NL group would correctly remember that information was not given for ING items and, as a result, give more information-not-given responses in

comparison to the other groups. As predicted, no items rated as neutral (ING/N) showed significant differences.

Hypothesis 2. Two-by-two Chi squares were used to compare the number of information-not-given responses in each label condition. Significant differences occurred on only four items and most often between the LL group and the VL group. These are seen below.

Item 3: "John was put in a special class in grade school." LL responses were significantly higher than the (NL) and (VL) responses ($p < .05$ for both).

Item 88: "John was frequently the object of pity." (LL) responses were significantly higher than VL responses ($p < .01$).

Item 18: "John was voted 'most likely to succeed' in high school." LL responses were significantly higher than VL responses ($p < .05$).

Item 136: "John's mother was very uninvolved in John's life." LL responses were significantly lower than VL responses ($p < .05$).

Item 157: "John was never the object of pity," LL responses were significantly higher than VL and EL responses ($p < .05$ for both).

Discussion of Hypotheses 1 and 2. The results of the Chi square analysis failed to support the hypotheses proposed. Contrary to what was predicted, subjects in the NL group did not give more information-not-given responses for ING/C and ING/I items in comparison to subjects in the three label groups. As predicted, there were no differences in the memory of subjects in all conditions for items rated as neutral (ING/N). Since there were virtually no differences in subjects' memory for items rated as other than neutral, this finding is not particularly interesting.

In 13 of the 23 ING/C and ING/I items, the LL items had the most information-not-given responses and in 5 of these 13 items the responses were significantly higher in comparison to responses in the VL group. With the exception of item 136, the difference was due to the higher number of information-not-given responses by subjects in the LL group. This would seem to indicate that subjects in the LL group in comparison to those in the VL group more correctly remembered that no

information had been given for ING items. However, neither the results of this experiment nor the results of previous research suggest exactly why the differences observed exist and, due to the fact that there are relatively few occurrences, one cannot reject that they are probably due to chance alone.

Hypotheses 3 and 4. Means were calculated in order to examine the truth ratings on items which subjects remembered as being in the narrative, i.e., items rated on a seven-point scale and not responded to as information-not-given. These appear in Table 7. A four-way analysis of variance was conducted which included sex of the subject as a fourth variable in addition to truth, consistency and label. Since there were no significant main effects or interactions involving sex (all $F_s < 1$), a three-way Anova without the sex variable was conducted next. The source table for the three-way Anova is seen in Table 6.

The results of the Anova (see Table 6) indicate that Truth and Consistency yielded significant main effects, $F(2, 382) = 1,250.01, p < .001$ and $F(2, 382) = 86.36, p < .001$, respectively. Also, there was a significant interaction of Truth and Consistency, $F(4, 764) = 17.47, p < .001$. However, neither the main

effect of label nor any interaction involving label was significant.

The mean numbers of responses for true, false and ING test items collapsed across label were calculated and are seen in Table 8. These means suggest that the differences that account for the main effect of truth are due to subjects' higher ranking of items which were true according to the narrative in comparison to false items. This suggests that subjects correctly remembered true items as true and false items as false.

The differences that account for the main effect of consistency are seen in subjects' higher ratings of consistent items in comparison to inconsistent items. With one exception, items that were judged to be neutral with the schema but were true according to the narrative (T/N items), the cell means of neutral items fell between the means of consistent and inconsistent items. The results do not suggest why responses to TN items were higher on the average than responses to items judged to be consistent with the schema and true according to the narrative (T/C items).

The difference in subjects' responses to consistent and inconsistent items was explored further in planned comparisons of consistent and inconsistent

items. The results revealed significant differences between subjects' responses to T/C and T/I items, $F(2, 764) = 6,39, p < .01$; F/C and F/I items, $F(2, 764) = 16.14, p < .001$; and ING/C and ING/I items, $F(2, 764) = 10,78, p < .01$. The fact that subjects assigned significantly higher ratings to consistent items and significantly lower ratings to inconsistent items regardless of truth value suggests one of two things: either the consistent items were more likely to be true and the inconsistent items false for idiosyncratic reasons unrelated to the story or to the schema for retarded people, or a schema did affect memory for information in the narrative. However, before one can accept that the schema operating is the one for retarded people, the fact that differences were also observed in the NL group needs to be explained.

In conclusion, the results failed to confirm the hypotheses which predicted a label and position of label effect. An interesting finding was subjects' higher rating of consistent items and lower rating of inconsistent items regardless of truth value. A discussion of possible reasons for the absence of a label effect and the presence of higher consistent item ratings follows.

General Discussion

Summary. This research began with an assessment of current social perceptions of mentally retarded persons. The results indicate that the range of attitudes about retarded people is generally quite large and diverse. Within the categories explored in these studies, however, stereotypical beliefs either tend to be strong and well-defined or quite varied. Specific and clear attitudes were identified in eight of the fourteen stereotype categories examined, including vocational potential, stigma contamination, independent lifestyle, intellectual and academic abilities, social acceptance and perception, physical and athletic abilities, and physical appearance. With the exception of vocational potential, the attitudes and beliefs identified were generally negative.

Using the information gathered about social perceptions of retarded people, a schema for retarded people was defined and used in the second part of the study in order to examine its effects on memory. It was hypothesized that subjects in the three label groups would assign higher ratings to consistent items regardless of truth value. It was also hypothesized that the "retarded" label and the position of that

label would interact with memory for information about factual events from the narrative. Regarding the effect of the "early label" (EL group), the assumption was that the schema for retarded people would provide information that would cause subjects to generate ideas consistent with the schema at encoding. It was assumed that the effect of the two late label conditions (the LL and VL groups) would be that subjects would reconstruct their memory of events in the story in a way that was consistent with that schema. Recall, for subjects in the EL, LL and VL conditions, would thus reflect information that was a joint function of input information and prior knowledge.

Discussion. The results of the study failed to show the presence of an effect due to label or position of label. Reasons for these results may be due to the information provided by the label. First, stored information evoked by the label may have been different for different subjects. For example, some subjects may have perceived retarded people to be fairly competent, while others saw them as very incompetent. The result would have been a wide variation in subjects' responses which, on the average, would have meant smaller differences. Also, perceptions might have differed

across the knowledge categories. For example, subjects may have seen the retarded person as socially backward but occupationally productive.

Finally, in Experiment 1, it was suggested that for some stereotype categories, e.g., relationships with the opposite sex, the schema is quite general and includes varying and even contradictory beliefs, while in other categories, e.g. intellectual abilities, the schema is very specific and well defined. In order to reduce or eliminate variance due to differing perceptions, future research could measure subjects' pre-experiment schema for retarded people and use this information to adjust the sources of variance by conducting an analysis of covariance. Also, it could focus on a subset of retardation or type of retardation for which there is less variability regarding social beliefs (e.g., severely retarded persons). It could also examine a narrower range of attributes associated with mentally retarded people. Finally, future research could use social groups for whom there are more generally agreed-upon social perceptions. For example, there is probably less variation in the schema for lesbians, a group studied by Snyder & Uranowitz (1979), than for retarded people.

Second, information in the narrative, regardless of the presence or absence of the label, may have led subjects, including those in the NL group, to believe that John was retarded. In this case, the label manipulation would have been redundant. This interpretation would seem to be particularly viable in view of the main effect of consistency. Future research could check whether subjects in the NL group inferred that John was retarded by including a fifth condition which labels John as having normal intelligence. Responses from this condition could then be compared with responses from the NL condition to see whether the latter are more consistent with the schema. One problem is that informing subjects about something which is generally assumed by default, i.e. normal intelligence, may unduly draw their attention to this characteristic of the person.

A simpler way of checking for this problem would be to ask subjects, in some subtle way, if they had inferred that John was retarded. Of course, there is the problem that subjects would say that they had inferred this when, in fact, they had not. One solution would be to tell subjects at the end of the experiment that John had one of three problems (for example, he

was mentally retarded, he had a physical handicap or he had emotional problems), and ask them to respond which problem they believed was John's. If, with three choices, more than 33% of the subjects responded that they thought John was retarded, there may be reason to believe that they inferred this regardless of the presence or absence of the label.

Finally, the information provided by the narrative may have not been used by subjects. While unlikely, it is possible that subjects in the VL condition were not listening when told that John was retarded or that subjects in the EL and LL groups did not read that John was retarded. A simple way to check for this possibility is to include a question on the memory test which asks if John was retarded. This question would also provide a check for subjects in the NL group who inferred that John was retarded.

With respect to the hypothesis that subjects in the label groups would assign higher ratings to consistent items regardless of truth value, the results showed a main effect of consistency. Planned comparisons of response means revealed that subjects assigned significantly higher ratings to consistent items regardless of truth value. This result suggests

that a schema was present and affected memory for information in the narrative. If one accepts this interpretation, there are at least three possible explanations for the lack of label effect and the fact that a consistency effect was seen in the NL group.

One explanation is that subjects in all four conditions, including the NL group, inferred that John was retarded. As stated before, the intent of the experimenter was to write the narrative in such a way that, if the reader did not know that John was retarded, there would be nothing in the story that would lead him or her to believe this, nor would there be anything blatantly inconsistent with such an interpretation. If one accepts this first explanation, however, it must be assumed that information contained in the narrative did in fact lead all subjects, regardless of the condition they were in, to believe that John was retarded. Thus, the label manipulation was largely redundant.

A second explanation assumes that a coherent schema was operating but it was not the schema for a retarded person. In other words, although the consistency main effect suggests that subjects formed similar impressions about John, this explanation

suggests that the impressions formed were not that John was retarded. What, then, was it about John that consistently impressed the subjects? While there was no attempt made to ascertain subjects' impressions, it may be that subjects believed that John was not a very intelligent person. This seems more plausible than the explanation that subjects inferred that John was retarded for two reasons. First, it is probable that subjects assumed by default that John was not retarded regardless of the material they read about him. Thus, it is very unlikely that information contained in the narrative so strongly contradicted this assumption that every reader inferred that John was retarded. Second, while it is likely that subjects assumed by default that John was not retarded, it is not as likely that they assumed he had average intelligence. Specifically, information about John contained in the narrative which, for example, described him as having a difficult time learning in school and as being employed in menial jobs as an adult, may have led subjects to infer that John was very unintelligent. Thus, according to this explanation, the schema used by all subjects, including those in the NL group, was a schema for unintelligent

people and the dependent measure was not sensitive enough to distinguish this and a retarded person.

This explanation assumes that the schema used by subjects was formed as they read about John. In other words, what subjects inferred about John was not based upon previous experience with or preexisting knowledge about retarded people, but represented on-the-spot inference-making. Thus all subjects, regardless of the condition they were in, constructed a schema as they read the information about John. As will be mentioned later, one problem with using memory measures is the inability to verify whether subjects' responses represent what is actually stored in memory or, simply, on-the-spot inferences.

A third explanation allows for the possibility of a schema at work, but, in addition, assumes that it does not distort information about John, i.e. there is a schema but there is no bias. Since subjects showed no bias, no differences were seen across the conditions. This raises the question as to what the experimenter could have done to "trigger" the bias. In response, future experiments could use a stronger manipulation. Although the verbal label has been successfully used in cognitive studies on memory, it has been used

infrequently in studies on stereotyping. A stronger manipulation, for example, might employ the use of photographs of people who are obviously retarded, e.g., those with Down's syndrome. Also, using more ambiguous stimuli may cause greater distortion. An example of ambiguous information provided in the narrative used was that which informed the reader that John lived with his mother as an adult. This is ambiguous because it could apply to either retarded or non-retarded, intelligent or unintelligent people. On the other hand, narrative material which described John as one for whom learning never came easy provided unequivocal information about his intelligence. It is suggested that future research pretest the narrative for ambiguity by having subjects read the story and give their impressions of John. Items which lead subjects to believe that John is unintelligent would be omitted. Finally, future research could use a dependent measure which is more sensitive to distortion than the recognition measure that was used. For example, by forcing subjects to choose one of two erroneous statements about John, one may be better able to understand their underlying attitudes.

Finally, as mentioned above, another interpretation, which makes no assumptions about the existence of a schema, is that the consistent items were more likely to be true and inconsistent items false for idiosyncratic reasons unrelated to the story or the schema. Although there is no way to completely rule out this possibility, there is nothing to suggest, when taken at face value, that consistent items were more likely to be true and inconsistent items false.

In summary, the results of this study suggest that there is an interaction between subjects' schema for John and memory for events contained in the narrative about him. Specifically, the fact that subjects remembered consistent items to be more true than inconsistent ones regardless of their actual truth value suggests that a schema was present and affected subjects' memory for information about John contained in the narrative. Failure to show an effect of label or position of label may be explained in several ways. First, this may have been because of the materials used. That is, information contained in the narratives may have led subjects in all four conditions to make on-the-spot inferences that John was mentally retarded or very unintelligent. Thus, the label manipulation,

being consistent with or at least not contradicting subjects' schema for John was largely redundant. Finally, the lack of differences due to label or position of label may be because the schema used by subjects did not activate a distortion of the information about John.

An Alternative Interpretation. The preceding explanations assume that the introduction of the label affects the encoding and retrieval of information, and they attempt to explain why the results of this study do not fully support this. Some research indicates, however, that the memory trace is far more resistant to change than schema theory suggests. In their critique of schema theory, Alba and Hasher (1983) question the schematic base of memory, citing research which shows that memory is not easily altered by the introduction of a schema. Below, several points made by these experimenters are discussed in the context of the findings of the present study.

This research proposed that subjects who received the information that John was retarded would differentially remember factual events from the narrative at recall compared to those who did not receive such information. It also predicted differences

in memory according to the position of the label. These hypotheses are, in part, based upon the work of Bransford and Johnson (1972). They found that information comprehension was facilitated when subjects related the text they read to information external to it, i.e., a theme. Furthermore, they discovered that significant differences in memory occurred when the theme was presented prior to the reading of the text. Alba, Alexander, Hasher and Caniglia (1981) have shown, however, that the advantage gained by an activated schema disappears when memory is tested using a recognition measure.

If recognition measures are, as Alba and Hasher suggest, relatively insensitive to changes due to the schema, this would explain the absence of differences among the conditions. How does one then explain the differences found by Bransford and Johnson? The evidence cited by Alba and Hasher suggests that these differences may have been due to the type of material used by Bransford and Johnson in comparison to that used in this study. Specifically, without the relevant theme, the material used by Bransford and Johnson was quite bizarre. These researchers, in fact, stated that, prior to receiving the theme, subjects reported

searching for some underlying theme by which to structure their thoughts about the strange scene. In contrast, the material used in the present study, and the studies cited by Alba and Hasher, were not extraordinary and would have made sense to subjects with or without the activation of the "retarded" schema. Assuming that subjects in the present study did not feel the need for a theme or schema in order to understand the narrative, is it possible that the differences observed by Bransford and Johnson, which were related to the activation of the theme, were a function of the type of material used and therefore not necessarily descriptive of memory for other types of material? This would explain, in part, the differences seen when the theme was presented before and after the reading of the narrative. In other words, when presented before the narrative, the theme provided a needed structure for subjects. When presented after the narrative, this structure was neither needed nor useful.

The present study assumed an interactionist explanation of memory, or, more specifically, an understanding of retrieval as a reconstructive process. It was proposed that the schema for retarded people,

representative of previous knowledge, beliefs and attitudes, would affect memory such that that which was remembered would be consistent with the schema. Thus subjects' memory of events in the narrative would represent a distorted version of the factual events recorded. Alba and Hasher state, on the contrary, that evidence for a reconstructive process is weak and, under normal circumstances, distortion is either rare or nonexistent. If the memory trace is, as Alba and Hasher imply, quite strong and affected very little by the schema, recognition error, which was predicted by the introduction of the label, should be minimal and an effect due to the position of the label should be practically nonexistent.

Finally, this study hypothesized that the schema would lead subjects to infer characteristics and traits about John that were consistent with the schema but not presented in the narrative. This prediction, in line with schema theory, assumes that people make inferences during comprehension. Alba and Hasher challenge this assumption and cite previous research (e.g. Singer, 1981) which indicates that inference making cannot be assumed to operate in all situations or with all types of information. If inference making is, as these

researchers contend, not obligatory, this would explain why differences were not seen in subjects' responses to items for which no information was given. In general, the major predictions of the present study rest upon the assumption that subjects make schema-based inferences consistent with current input and previous experiences and that these inferences in turn affect their retrieval of information.

Summary and Benefits of the Research. This study examined the role of subjects' schema for mentally retarded people in their memory for events in the life of a retarded person named John K. Experiment 1 identified the characteristics of the schema by examining subjects' responses to a questionnaire designed to assess current social perceptions of retarded people. In Experiment 2, it was hypothesized that previous experiences with retarded people would interact with current information about John contained in a narrative which subjects read. Specifically, it was predicted that, as a result of this interaction, later recall of factual events contained in the narrative would be distorted in a way that was consistent with the schema.

The results of this study are seen as potentially useful both to psychologists involved in schema research and to persons who work professionally with mentally retarded persons and who desire to understand the social attitudes and perceptions of their clientele by the general public. With respect to those who work with retarded people, the results of this study may facilitate a clearer understanding of current social perceptions of mentally retarded people. The fact that perceptions in one category, vocational potential, were markedly more positive in comparison to other categories, is encouraging and certainly warrants further exploration.

With respect to schema research, although the study failed to show an effect predicted for the presence and position of a label, these results may due to the materials used. The fact that subjects rated items consistent with the schema significantly higher than inconsistent items regardless of the item's actual truth value suggests the presence of the schema in memory recall. While these results largely support schema theory, they may also be useful in showing the limits of schema theory for understanding social phenomena and noting areas where revision is needed.

For example, as mentioned before, the ability of schema theory to assess social perceptions of a group, such as retarded people, may be limited when those perceptions are generally varied or diffuse. In other words, schema theory's primary contribution may be limited to understanding processes of information-gathering about groups for which beliefs are strong and easily identified. It appears that it is not helpful in understanding what the social perceptions are, or in understanding more about perceptions for which little is known to begin with. Thus, while schema theory may contribute greatly to an understanding of the cognitive processes behind social perception, it probably adds little to an understanding of the social phenomena itself. Limitations and strengths of schema theory and, more broadly, social cognition research, for understanding social phenomena are explored further in the postscript.

Postscript: Using Cognitive Theories
to Explain Social Phenomena

The results of the present study suggest that people make inferences about retarded people that are consistent with social beliefs and attitudes. The question of whether the inference making that is

observed in the laboratory is indicative of the kind of information processing that takes place in actual social settings, however, is not addressed in this study, nor is it typically examined in the social cognition research. This has been identified as a major weakness of the social cognition research with respect to its ability to accurately study and understand social behavior (Taylor & Fiske, 1981). Major points of this criticism are presented below and discussed in the context of the present study.

A cognitive approach to understanding social phenomena represents a divergence from traditional attribution study which has typically focused on the social learning experiences and motivational factors of the attributor and the affect associated with particular beliefs. [There are some exceptions to this approach. For example, Asch (1946), like social cognition psychologists, was interested in the cognitive processes of impression formation. Unlike social cognition researchers, however, Asch's work proceeded from Gestalt principles of perception rather than from the recently developed information-processing paradigm.] In contrast, social cognition research, of which the present study is representative, has

typically focused on cognitive processes and has assumed that different perceptions of groups, such as retarded people, can be explained as a consequence of normal cognitive functioning.

This purely cognitive approach has led to a major criticism of schema studies on social perception, in this case, as applied to stereotyping, and that is its lack of social verification and application. Presumably, if the interest of social perception and stereotyping research is social behavior, then the theory and methodology behind the research must in some sense be social. Yet, in most of the schema research on stereotyping there is a deliberate effort made to avoid any influences caused by previously developed associations or values subjects have regarding certain social groups. Hamilton (1976, p. 92) summarizes this cognitive approach: "... stereotyping does not reflect the overgeneralization of actual differences between groups (but rather) aspects of our cognitive functioning (which) lead us to 'see' differences that do not actually exist."

One result of this cognitive approach is a body of research that has a proclivity for reductionism (Taylor & Fiske, 1981) That is, by borrowing cognitive

psychological models and techniques, the primary concerns of social cognition researchers have been reduced to the details of the cognitive processes of social perception and attribution inference, while the role and context of the social process itself has been all but ignored. For example, Cantor and Mischel's (1979) study, cited in the literature review, suggests that people perceive others more in terms of roles than traits. In examining the methodology used, which consisted of subjects learning lists of trait adjectives about a hypothetical person, however, it is questionable whether this paradigm actually indicates the level at which persons are categorized. Can the use of a single judgment, such as the one used in Cantor and Mischel's (1977) study, capture the overall impression of another person's personality as implied by the notion of impression? By ignoring the social qualities of, in this instance, the phenomenon of person impression, application of the results to the social setting seems untenable.

In conclusion, several weaknesses can be seen in the social cognition research on schema which are directly attributable to the application of cognitive theory to the study of social events. One weakness is

that instead of letting the social phenomenon constitute and guide the empirical inquiry, social cognition researchers have typically allowed cognitive relationships to direct the focus of research. The result is that there seems to be more interest in seeing how a social phenomenon verify particular cognitive phenomenon and less interest in an in-depth analysis of the social phenomenon itself as a basis for the development of theory. It is, after all, relatively easy to apply a cognitive hypothesis to a social situation. It is more difficult, however, to understand what is uniquely social about the process that is being observed.

The Use of Memory Measures. Another problem that has been identified is concerned with the memory measures that are used. One problem with the use of memory measures, in particular recognition measures, is that the experimenter must be able to accurately predict errors. For example, in order to create differences among subjects, it was the experimenter's responsibility in the present study to choose stimuli that effectively anticipated wrong answers. While much effort was given to correctly understanding the schema for retarded people, it is, nevertheless, partly

correct to say that the usefulness of the design to identify inferences consistent with this schema was only as good as the experimenter's intuitions. Therefore, the extent to which one is able to measure completely social attitudes and stereotypes is limited.

A second problem with using memory measures is the inability to verify whether subjects' responses represented what was actually in memory or mere guessing. Similarly, there is the difficulty of knowing whether subjects' responses represented on-the-spot inferences or stored material in actual memory. As indicated earlier, unless and until one can verify that subjects' responses are indeed representative of inference making, the assumption that information is reconstructed in accordance with the person's schema cannot be made.

A third problem, which is implicit in the use of memory measures, is the idea that cognitions mediate social judgment. Taylor and Fiske (1981) have pointed out that it could be that the affective processes, associated with judgment, mediate cognitive processes, or that both processes are mediated by a third process.

In conclusion, social cognition studies, particularly those studying schema, have relied heavily

upon the assumption that new information is reconstructed in accordance with the perceiver's schema. This is seen above in the methodology of error analysis in which the experimenter determines what the right answers should be and examines subjects' deviations from those answers. The processes of information processing, however, may not be identified or defined clearly enough to justify this assumption. Another assumption made is that cognitions mediate affective processes. Yet, evidence for this assumption is questionable, and there is research that has shown that, under some circumstances, evaluative processes are not mediated by cognitive ones. Thus while memory measures such as recognition tests may help delineate the processes of social perception and judgment, it is not clear, given the limitations of the experimenter and the experimental paradigm used, that what is being measured is actually indicative and inclusive of these processes.

Recommendations for Future Research. Keeping in mind the issues and problems identified thus far, this postscript concludes with several recommendations for future research. First, it is recommended that future theoretical and methodological discussions begin by

addressing a fundamental question, and that is, what is uniquely social about social cognition? To this end, it is suggested that future discussions begin with the understanding that both domains, social psychology and social cognition, have something to learn from the other.

First, traditional social psychology has something to learn from social cognition in its concern for the process of interpersonal social perception. Social cognition's study of the processes of perception relies heavily upon memory measures designed to study inferences and common styles of reasoning. A weakness of this approach is that it assumes an implicit trust in the subject's ability to describe his or her own experience. As was indicated before, one cannot be completely sure whether what the subject is reporting is what is actually in memory or mere guessing, and it is never certain whether the subject's response represents an on-the-spot inference or stored material in memory. Although this assumption of trust in the subject may serve to weaken the research, one needs to consider the alternative before being too critical. For example, the assumption that the subject is not able to accurately report his or her experience, as seen in

some traditional social psychological studies which attempt to trick or deceive the subject in some way, would seem to be no less problematic than a model which assumes such trust.

Second, social cognition research has much to gain from traditional approaches of studying social phenomena. Perhaps social psychology's greatest contribution in this regard is a body of research which has been frequently based in real-world, social settings. Taking cognitive hypotheses to social settings may have several advantages. First, it can help define the parameters and the boundaries of the hypothesis by examining the conditions in which it is viable and the conditions in which it does not apply. Second, research in the social setting may help elucidate the behavioral consequences of social inference; something which is nearly impossible to do in the confines of the laboratory. Finally, taking the research to the field may offer a bridge between social psychology and other applied disciplines. For example, the present study has the potential to benefit both psychologists and professionals who work with mentally retarded people.

In conclusion, this postscript has identified some of the weaknesses of the social cognition research on schema. This approach to understanding social phenomena stands in direct contrast to the more traditional approaches. At the same time, it offers a new and distinctive approach to understanding. Thus future research, instead of emphasizing the differences between social cognition and traditional social psychology, needs to consider what both domains have to offer each other. In this regard, it is suggested that traditional social psychology may have something to gain by using more precise cognitive techniques for measuring processes assumed to mediate between affect and cognition. Social cognition, on the other hand, has a lot to glean from social psychology's rich tradition of study concerned with real-world, social phenomena. It is believed that, by providing the opportunity for social cognition researchers to test out a number of cognitive relationships with ecologically valid stimulus materials, the door is open for a more wholistic understanding of the social as well as cognitive dynamics of social behavior.

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APPENDIX A

RATER QUESTIONNAIRE

The purpose of this study is to understand the social perceptions of a mentally retarded person.

Below is a list of statements describing a fictitious person named John K. If you believe that the statement is consistent with the social perceptions of John as mentally retarded, circle a number on the right or "true" side of the scale. If you believe that the statement is inconsistent with the social perception of John as mentally retarded, circle a number on the left or "false" side of the scale. If you believe that the statement has no relation at all to the social perception of John as mentally retarded, circle "Neutral." If, after careful consideration, you cannot decide whether the statement is consistent, inconsistent or has no relation to the social perception of John as mentally retarded, circle number four. It is important that your response reflect what you think is the way most people in American society view a mentally retarded person. Your response should not primarily reflect your own views or what you think is an accurate view of a mentally retarded person.

For example, you may decide that the statement, "John's family expected that he would become a physicist someday," is inconsistent with the social perception of a mentally retarded person. You would therefore circle a number on the left side of the scale, depending on how false you think this description is in relation to the social perception. On the other hand, you may decide that the statement, "John needed other people to help him manage his household affairs," is consistent with the social perception of a mentally retarded person. You would therefore circle a number on the right side of the scale, depending on how true you think this description is in relation to the social perception. Finally, you may determine that the statement, "John's favorite ice cream was chocolate," has no relation at all to the social perception of John as mentally retarded. You would therefore circle Neutral.

When you have responded to each statement, turn your Rater Questionnaire and Answer sheet Scale over and wait for further instructions.

.....

1. One of John's favorite T.V.shows was Quincy.

2. John was in a jobs training program.
3. John was put in a special class in grade school.
4. The family John grew up in consisted of five girls.
5. John had a speech impediment.
6. Many people perceived John as a successful person.
7. John was once convicted of stealing a car.
8. John collected baseball cards when he was a boy.
9. John was a motorcycle racer.
10. John's favorite subject in school was science.
11. As an adult, John lived in a house with some other people.
12. John enjoyed playing basketball when he was a boy.
13. As an adult, John never lived with his mother.
14. John's family regularly attended church.
15. John's manager at the Postal Service hated to see him leave his job with them.
16. John would occasionally come home drunk.
17. The family John grew up in consisted of seven members.
18. John was voted "most likely to succeed" in high school.
19. John was a vegetarian.
20. Learning never came easy for John.

21. John had an intimate relationship with a woman named Susan.
22. John's father had a brother who was mentally retarded.
23. John's favorite subject in school was physical education.
24. John's parents were strong Republicans.
25. John was an emotionally strong person.
26. John was a gas station attendant.
27. John had brown hair.
28. John had a problem with drug abuse.
29. John's managers at the restaurant where he worked saw John as a sincere worker.
30. John's mother was a full-time homemaker all of her life.
31. John's favorite team was the New York Knickerbockers.
32. John's father died of a heart attack.
33. John was overly sensitive to the acceptance or rejection he felt from others.
34. John was content to live with his mother indefinitely.
35. Doug, John's twin brother, always completely accepted John.

36. John's boss at the gas station expressed dissatisfaction with his work.
37. John spent some time in a juvenile delinquent correctional institution.
38. John's uncle was an engineer.
39. John wanted to own his own restaurant someday.
40. John's mother was confident that John would be successful in life.
41. One of John's sisters received professional counseling.
42. John's two sisters were named Jackie and Emily.
43. John was born in Kansas City, Missouri.
44. John physically resembled a handsome, well-known actor.
45. John's brothers and sisters were overly concerned about and protective of John.
46. John never financially depended on his mother.
47. The death of John's father was unexpected.
48. John purchased a small motorcycle.
49. The names of John's two sisters were Jean and Patty.
50. John's mother had wanted to be a nurse.
51. John knew that he couldn't pass a civil service test.

52. When she reflected on her experience as John's parent, John's mother felt a sense of satisfaction.
53. John lived with his mother.
54. Doug, John's twin brother, eventually became a dentist.
55. John's father was a mechanic.
56. John's favorite subject was math.
57. John's mother had always worked full-time.
58. John was always financially dependent on his mother.
59. John was physically unattractive.
60. John once enrolled in an undergraduate college program.
61. John bussed dirty trays in a restaurant.
62. John regularly received a check from welfare.
63. Until the third grade, John never missed a single day of school.
64. John was saddened by his father's death.
65. John was a stylish dresser in high school.
66. John's father had fought in World War II.
67. One of John's friends was convicted of stealing a car.
68. John's mother never went to work full-time.

69. John lacked the physical coordination to play basketball.
70. John thought that taking a civil service test would not be intellectually challenging.
71. John said that marriage was not a possibility for him.
72. John's uncle took him to a Cub's game.
73. John was not saddened by his father's death.
74. All of John's relationships with women were "brother-sister" with no sex involved.
75. John's family expected that John would own his own restaurant some day.
76. John's mother remembers him as untypical compared to most teenagers.
77. John got his girlfriend pregnant.
78. John was never rejected by the women he dated.
79. John ran local errands on a motorcycle.
80. John's present manager at the restaurant where he worked had some reservations about John's ability to do good work.
81. John was a good pool player.
82. John's favorite team was the New York Yankees.
83. John had a pet dog named Pete.
84. John easily became emotionally upset.

85. Doug, John's twin brother, went to school in New York.
86. John was a loner through most of his teenage years.
87. John was hired by the Postal Service to sort mail.
88. John was frequently the object of pity.
89. John's oldest brother's name was Henry.
90. John described his childhood as happy and normal.
91. John's oldest brother was a famous football player.
92. John was very pleased with his life.
93. John was a janitor.
94. John received less teasing than is typical of grade school relationships.
95. All the women John dated eventually rejected him.
96. Some of John's classmates felt uncomfortable around him.
97. John's previous managers at the restaurant where he worked saw John as eager to work.
98. John's favorite team was the Los Angeles Lakers.
99. John's mother admitted to worrying a lot about John.
100. John's family consisted of four members.
101. John's uncle was a professional umpire.
102. John's friends were highly respected in the community.

103. Doug, John's twin brother, was born an hour after John.
104. John's manager at the Postal Service was relieved to see John leave his job with them.
105. John found his job as a gas station attendant to be intellectually boring.
106. John's teachers expected that John would be a medical doctor some day.
107. Financially, John had always had to depend upon his mother.
108. John was considered to be quite handsome.
109. John had a friend named Susan.
110. John frequently needed professional counseling.
111. Learning always came easy for John.
112. John and Doug, John's twin brother, shared a circle of friends.
113. John's mother did ironing on the side.
114. John was sexually involved with all of the women he dated.
115. John took a short time to train at the Postal Service.
116. Most people found John's speech difficult to understand.
117. John was never ignored by his twin brother, Doug.

118. The name of John's grade school was Woodrow Wilson School.
119. The restaurant where John worked was located in downtown Evanston.
120. John said that he planned to get married some day.
121. John received more teasing than is typical of grade school relationships.
122. John managed his finances well.
123. John felt a sense of disappointment with his life.
124. John was a basketball player on the school team.
125. John's favorite music was country western.
126. John's mother was overly protective of John.
127. John had sessions with a school counselor.
128. John loved life.
129. John's father was a mail carrier.
130. John's favorite dish was lasagne.
131. John's mother was content to have John live with her indefinitely.
132. None of John's relationships with women had been "brother-sister" with no sex.
133. Many people expected that John would not be successful in life.
134. John's mother was very close to all her children.
135. Doug, John's twin brother, was embarrassed by John.

136. John's mother was very uninvolved in John's life.
137. John's mother received professional counseling.
138. John's brothers and sisters described their family life together as happy and normal.
139. John's father preferred Chevrolet cars over Fords.
140. John's family expected that he would get married someday.
141. John did not play on the school baseball team.
142. When she thought about John, John's mother felt sadness.
143. John didn't care whether he was rejected by others.
144. John's high school teacher was born in Germany.
145. John's mother looked forward to the day when he would become a parent.
146. Academically, John had a difficult time keeping up with his classmates.
147. John had no plans to get married.
148. John was born in 1947.
149. One of John's managers at the restaurant where he worked saw John as one who made a minimal contribution to the overall operation of the restaurant.

150. Academically, John was always near the top of his class.
151. John's father died unexpectedly of a heart attack.
152. When it came to sports, John watched but didn't play.
153. John's brothers and sisters would not change a thing about John.
154. John had many pets.
155. John's previous managers at the restaurant where he worked saw John as eager to do a good job.
156. John took a long time to train at the Postal Service.
157. John was never the object of pity.
158. John quit his job as a gas station attendant.
159. Doug, John's twin brother, often wrote that he was lonely for John.
160. John did not enjoy watching T.V.
161. The teasing John received was typical of most grade school relationships.
162. John's favorite team was the Chicago Cubs.
163. John has been in a jobs training program.
164. John had lived with a woman.
165. John has spent some time in a mental institution.
166. John had no physical handicaps.

167. John had had six managers at the restaurant where he worked.
168. John's parents showed a lot of pride in all their children.
169. John enjoyed being with animals.
170. John never had sessions with the school counselor.
171. John did not generally get along well with his grade school classmates.
172. John was never the target of teasing.
173. The name of the oldest son in John's family was Bill.
174. John was a law abiding citizen.
175. John didn't care whether he was accepted by others.
176. John's favorite candy was Payday Peanut Bar.
177. Doug, John's twin brother, never ignored John.
178. John planned to be a parent someday.
179. One of the women John dated completely rejected him.
180. John's friends had a reputation for being rowdy.
181. John always had to financially depend on his mother.
182. John had no friends.
183. Two brothers were born after John.

APPENDIX B

RATER SHEET SCALE (First Page Only)

Age -

Sex -

Class -

ANSWER SHEET SCALE

1. Definitely False	1	2	3	4	5	6	7	Definitely True	Neutral

2. Definitely False	1	2	3	4	5	6	7	Definitely True	Neutral

3. Definitely False	1	2	3	4	5	6	7	Definitely True	Neutral

4. Definitely False	1	2	3	4	5	6	7	Definitely True	Neutral

5. Definitely False	1	2	3	4	5	6	7	Definitely True	Neutral

6. Definitely False	1	2	3	4	5	6	7	Definitely True	Neutral

7. Definitely False	1	2	3	4	5	6	7	Definitely True	Neutral

APPENDIX C

FOLLOW-UP QUESTIONNAIRE

1. Do you know any person who is mentally retarded? If no, go to question number three. If yes, how familiar are you with this person?

Very Not Very
 Familiar 1 2 3 4 5 6 7 Familiar

Are you related to this person? If yes, how are you related?

How often do you meet and talk with this person?

Frequently 1 2 3 4 5 6 7 Never

2. Do you know anyone who has Down's syndrome? If no, go to question number three. How familiar are you with this person?

Very Not Very
 Familiar 1 2 3 4 5 6 7 Familiar

Are you related to this person? If so, how are you related?

How often do you meet and talk with this person?

Frequently 1 2 3 4 5 6 7 Never

3. How often do you have contact with someone who works with mentally retarded persons?

Frequently 1 2 3 4 5 6 7 Never

4. How knowledgeable are you about mental retardation?

Very								No Know-
Knowledge-								ledge At
able	1	2	3	4	5	6	7	All

5. How often have you had uninvolved contact with a mentally retarded person in the last year? Example: saw a mentally retarded person in a restaurant.

Frequently 1 2 3 4 5 6 7 Never

6. How much exposure to the topic of mental retardation have you had in the last year? Example: T.U. program, class.

Very								Very
Much								Little
Exposure	1	2	3	4	5	6	7	Exposure

7. Do you desire to know more about mental retardation? You will not be contacted.

Yes,								No, Not
Very Much	1	2	3	4	5	6	7	At All

8. Do you desire to become personally acquainted with a mentally retarded person? You will not be contacted.

Yes,								No, Not
Very Much	1	2	3	4	5	6	7	At All

Thank you for your cooperation!

APPENDIX D

EARLY LABEL NARRATIVE

Today you will be reading a story about a fictitious person named John K. You are to read this at your own speed. When you are finished reading the story, it is important that you immediately turn the sheet over and not read back over the story or parts of it a second time. When you have finished reading the story and have turned the sheet over, spend a few minutes going over the story in your mind and thinking about your impressions of John K. You will return next week at which time you will respond to statements which will test your memory for this story.

You will be dismissed after everyone has read the narrative.

A NARRATIVE ON JOHN K.

This is the story of John K. John was born on March 10, 1956 in Evanston, Illinois. When John was born, his family included his mother and father, Alice and Henry, two sisters, Jean and Patty, and a brother, Bill. His twin brother, Doug, was born three minutes

after John completing Alice and Henry's family of seven. The twins were a special part of the family. Being the youngest members of the family, sometimes John's brothers and sisters were overly concerned and protective of John and Doug. Together, Henry and Alice provided well for their family. They were even able to help their extended family, and occasionally cared for one of Henry's brothers who had emotional problems.

When John was five-years-old, his father died unexpectedly of a heart attack. Alice, who had always worked full-time, could not support her family by herself. Her income, plus the income earned by her oldest son, Bill, however, allowed Alice to adequately provide for the needs of her family. Shortly after his father's death, John took several tests which evaluated his mental development. The tests confirmed what those close to him had always believed: John was mentally retarded. Periodic evaluations throughout his lifetime consistently showed that John was retarded.

As children, John and Doug enjoyed swimming, bike riding and playing on the school baseball and basketball team. Both boys liked sports and their favorite teams were the Chicago Cubs and the New York Knickerbockers. One of the highlights of John's boyhood

was when his uncle, Bob, took Doug and him to a Chicago Cub's baseball game.

John enjoyed attending school and one of his favorite subjects was Art. John enjoyed being with animals and liked drawing pictures of different jungle beasts. Learning never came easy for John, and academically, he had a difficult time keeping up with his classmates. Still, John looked forward to each day of school, and, until the sixth grade, never missed a single day.

John generally got along well with his grade school classmates but sometimes someone would tease him and hurt his feelings. Doug would frequently defend his brother, and, occasionally, John would come to Doug's rescue when he was being bullied or laughed at. Overall, the teasing Doug and John received from others was typical of grade school relationships and their mother, Alice, generally ignored it unless one of the boys got into a fight or got hurt.

Alice remembers John as a typical teenager who liked fast cars and couldn't wait to have his first beer. He was an attractive person and was known as a stylish dresser. Soon after they entered high school, Alice remembers that Doug started to ignore John. John

eventually began to withdraw from Doug and their friends which was unusual as John was not typically a loner. Alice became concerned about John and unsuccessfully tried to get him an appointment with the school counselor. She was able to talk with Doug and shortly after their discussion Doug slowly began to accept his brother as usual. Alice thought that part of the problem was that John was overly sensitive to the rejection or acceptance he felt from others.

At eighteen, John quit school and went to work full-time. He continued to live with his mother. Not having any homework, John took up bowling and enjoyed watching T.V. One of his favorite shows was Quincy. In his first job he was a gas station attendant. John didn't make much money at this job, but he managed his money well and was able to buy a small motorcycle which he used to run local errands. He eventually bought another larger motorcycle which he occasionally raced with. Although John and his mother were satisfied with his living at home, both agreed that they did not want to live together indefinitely.

After living with his mother for six years, John moved to a nearby city where he entered a Jobs training program sponsored by the state university. By this time

John was no longer financially dependent upon his mother. After John left home, his mother admitted to worrying a lot about him. At the training program John met some new friends and began to establish himself as a good pool player. After six months of training John was hired by the U.S. Postal Service to sort mail. John was required to take a civil service test in order to keep his job. John chose not to take the test because he didn't enjoy the work that much and was ready for a new job. His manager hated to see John leave. Although John had taken a little longer than most to train, the manager had begun to see a steady improvement and was beginning to take a liking to John.

After finishing the jobs training program, John was hired to work at a restaurant called the Chuck Wagon Inn. The restaurant is near his mother's house. John loves his job at the Chuck Wagon Inn and says it is one of the most important things in his life. He spends most of his time at the restaurant bussing trays and serving customers. John's friends and family are happy with John's progress at the Chuck Wagon Inn and many people perceive John as a successful person because of his strong commitment to his work.

Besides work and an occasional game of pool, John enjoys an intimate relationship with a woman named Susan. Prior to meeting Susan John had seriously dated two other women. His relationship to Edy was close, like a sister, but no sex was involved. The other woman, Jane, and John lived together during the time he was at the jobs training program. They both decided to end the relationship just before John left the program. John had hoped to continue a friendship with Jane but, for reasons unknown to John, she completely rejected him after the relationship ended. John has dated Susan longer than anyone else and his family expects that they will get married someday.

APPENDIX E

LATE LABEL NARRATIVE

Today you will be reading a story about a fictitious person named John K. You are to read this at your own speed. When you are finished reading the story, it is important that you immediately turn the sheet over and not read back over the story or parts of it a second time. When you have finished reading the story and have turned the sheet over, spend a few minutes going over the story in your mind and thinking about your impressions of John K. You will return next week at which time you will respond to statements which will test your memory for this story.

You will be dismissed after everyone has read the narrative.

A NARRATIVE ON JOHN K.

This is the story of John K. John was born on March 10, 1956 in Evanston, Illinois. When John was born, his family included his mother and father, Alice and Henry, two sisters, Jean and Patty, and a brother,

Bill. His twin brother, Doug, was born three minutes after John completing Alice and Henry's family of seven. The twins were a special part of the family. Being the youngest members of the family, sometimes John's brothers and sisters were overly concerned and protective of John and Doug. Together, Henry and Alice provided well for their family. They were even able to help their extended family, and occasionally cared for one of Henry's brothers who had emotional problems.

When John was five-years-old, his father died unexpectedly of a heart attack. Alice, who had always worked full-time, could not support her family by herself. Her income, plus the income earned by her oldest son, Bill, however, allowed Alice to adequately provide for the needs of her family.

As children, John and Doug enjoyed swimming, bike riding and playing on the school baseball and basketball team. Both boys liked sports and their favorite teams were the Chicago Cubs and the New York Knickerbockers. One of the highlights of John's boyhood was when his uncle, Bob, took Doug and him to a Chicago Cub's baseball game.

John enjoyed attending school and one of his favorite subjects was Art. John enjoyed being with

animals and liked drawing pictures of different jungle beasts. Learning never came easy for John, and academically, he had a difficult time keeping up with his classmates. Still, John looked forward to each day of school, and, until the sixth grade, never missed a single day.

John generally got along well with his grade school classmates but sometimes someone would tease him and hurt his feelings. Doug would frequently defend his brother, and, occasionally, John would come to Doug's rescue when he was being bullied or laughed at. Overall, the teasing Doug and John received from others was typical of grade school relationships and their mother, Alice, generally ignored it unless one of the boys got into a fight or got hurt.

Alice remembers John as a typical teenager who liked fast cars and couldn't wait to have his first beer. He was an attractive person and was known as a stylish dresser. Soon after they entered high school, Alice remembers that Doug started to ignore John. John eventually began to withdraw from Doug and their friends which was unusual as John was not typically a loner. Alice became concerned about John and unsuccessfully tried to get him an appointment with the

school counselor. She was able to talk with Doug and shortly after their discussion Doug slowly began to accept his brother as usual. Alice thought that part of the problem was that John was overly sensitive to the rejection or acceptance he felt from others.

At eighteen, John quit school and went to work full-time. He continued to live with his mother. Not having any homework, John took up bowling and enjoyed watching T.V. One of his favorite shows was Quincy. In his first job he was a gas station attendant. John didn't make much money at this job, but he managed his money well and was able to buy a small motorcycle which he used to run local errands. He eventually bought another larger motorcycle which he occasionally raced with. Although John and his mother were satisfied with his living at home, both agreed that they did not want to live together indefinitely.

After living with his mother for six years, John moved to a nearby city where he entered a jobs training program sponsored by the state university. By this time John was no longer financially dependent upon his mother. After John left home, his mother admitted to worrying a lot about him. At the training program John met some new friends and began to establish himself as

a good pool player. After six months of training John was hired by the U.S. Postal Service to sort mail. John was required to take a civil service test in order to keep his job. John chose not to take the test because he didn't enjoy the work that much and was ready for a new job. His manager hated to see John leave. Although John had taken a little longer than most to train, the manager had begun to see a steady improvement and was beginning to take a liking to John.

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woman, Jane, and John lived together during the time he was at the jobs training program. They both decided to end the relationship just before John left the program. John had hoped to continue a friendship with Jane but, for reasons unknown to John, she completely rejected him after the relationship ended. John has dated Susan longer than anyone else and his family expects that they will get married someday. Even though John and Susan are both mentally retarded, they believe that they can successfully live together, and they have talked about the possibility of getting married.

APPENDIX F

NO LABEL AND VERY LATE LABEL NARRATIVE

Today you will be reading a story about a fictitious person named John K. You are to read this at your own speed. When you are finished reading the story, it is important that you immediately turn the sheet over and not read back over the story or parts of it a second time. When you have finished reading the story and have turned the sheet over, spend a few minutes going over the story in your mind and thinking about your impressions of John K. You will return next week at which time you will respond to statements which will test your memory for this story.

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animals and liked drawing pictures of different jungle beasts. Learning never came easy for John, and academically, he had a difficult time keeping up with his classmates. Still, John looked forward to each day of school, and, until the sixth grade, never missed a single day.

John generally got along well with his grade school classmates but sometimes someone would tease him and hurt his feelings. Doug would frequently defend his brother, and, occasionally, John would come to Doug's rescue when he was being bullied or laughed at. Overall, the teasing Doug and John received from others was typical of grade school relationships and their mother, Alice, generally ignored it unless one of the boys got into a fight or got hurt.

Alice remembers John as a typical teenager who liked fast cars and couldn't wait to have his first beer. He was an attractive person and was known as a stylish dresser. Soon after they entered high school, Alice remembers that Doug started to ignore John. John eventually began to withdraw from Doug and their friends which was unusual as John was not typically a loner. Alice became concerned about John and unsuccessfully tried to get him an appointment with the

school counselor. She was able to talk with Doug and shortly after their discussion Doug slowly began to accept his brother as usual. Alice thought that part of the problem was that John was overly sensitive to the rejection or acceptance he felt from others.

At eighteen, John quit school and went to work full-time. He continued to live with his mother. Not having any homework, John took up bowling and enjoyed watching T.V. One of his favorite shows was Quincy. In his first job he was a gas station attendant. John didn't make much money at this job, but he managed his money well and was able to buy a small motorcycle which he used to run local errands. He eventually bought another larger motorcycle which he occasionally raced with. Although John and his mother were satisfied with his living at home, both agreed that they did not want to live together indefinitely.

After living with his mother for six years, John moved to a nearby city where he entered a jobs training program sponsored by the state university. By this time John was no longer financially dependent upon his mother. After John left home, his mother admitted to worrying a lot about him. At the training program John met some new friends and began to establish himself as

a good pool player. After six months of training John was hired by the U.S. Postal Service to sort mail. John was required to take a civil service test in order to keep his job. John chose not to take the test because he didn't enjoy the work that much and was ready for a new job. His manager hated to see John leave. Although John had taken a little longer than most to train, the manager had begun to see a steady improvement and was beginning to take a liking to John.

After finishing the jobs training program, John was hired to work at a restaurant called the Chuck Wagon Inn. The restaurant is near his mother's house. John loves his job at the Chuck Wagon Inn and says it is one of the most important things in his life. He spends most of his time at the restaurant bussing trays and serving customers. John's friends and family are happy with John's progress at the Chuck Wagon Inn and many people perceive John as a successful person because of his strong commitment to his work.

Besides work and an occasional game of pool, John enjoys an intimate relationship with a woman named Susan. Prior to meeting Susan John had seriously dated two other women. His relationship to Edy was close, like a sister, but no sex was involved. The other

woman, Jane, and John lived together during the time he was at the jobs training program. They both decided to end the relationship just before John left the program. John had hoped to continue a friendship with Jane but, for reasons unknown to John, she completely rejected him after the relationship ended. John has dated Susan longer than anyone else and his family expects that they will get married someday.

APPENDIX G

MEMORY TEST FOR A NARRATIVE ON JOHN K.

QUESTIONS ON JOHN K.

Thank you for returning to this second part of the experiment called Memory for John K. Today you will be responding to statements about information contained in the narrative you read last week.

The following statements are designed to test the accuracy of your memory for factual information contained in the narrative on John K. If you think a statement is true, based on that narrative, circle a number on the right ("true") side of the scale. If you think it is false, circle a number on the left ("false") side of the scale. If you think not enough information on the statement was given in the narrative to evaluate the statement, circle "Information Not Given." If, after careful consideration, you cannot remember whether the statement is true, false, or one for which no information was given, circle number four.

For example, below is an excerpt from a narrative entitled "A Narrative on Mary T."

"Mary T. grew up in Los Angeles, California. Mary lived with her mother and an older sister. At an early age she enjoyed dancing and her mother enrolled her in ballet classes at the age of four."

If you had read this narrative about Mary T., you might rate statements like the following in the indicated way:

Mary enjoyed dancing.	7(T)
Mary lived in New York.	1(F)
Mary preferred jazz to classical music.	Information Not Given

Finally, if you were given a statement about Mary and could not remember whether it was true, false, or one for which information was not given, you would circle number 4.

Work through the statements at your own speed. When you are finished responding to all of the statements, turn your papers over and await further instructions.

BE SURE TO ANSWER ALL QUESTIONS!

1. One of John's favorite T.V.shows was Quincy.

2. Many people perceived John as a successful person.
3. John was a motorcycle racer.
4. John enjoyed playing basketball when he was a boy.
5. As an adult, John never lived with his mother.
6. John was voted "most likely to succeed" in high school.
7. Learning never came easy for John.
8. John had an intimate relationship with a woman named Susan.
9. John's father had a brother who was mentally retarded.
10. John was an emotionally strong person.
11. John's mother was a full-time homemaker all of her life.
12. John was in a jobs training program.
12. John was overly sensitive to the acceptance or rejection he felt from others.
13. John was content to live with his mother indefinitely.
14. John physically resembled a handsome, well-known actor.
15. John's brothers and sisters were overly concerned about and protective of John.
16. John never financially depended on his mother.

17. John purchased a small motorcycle.
18. John's favorite subject was math.
19. John's favorite team was the New York Knickerbockers.
20. The names of John's two sisters were Jean and Patty.
21. When she reflected on her experience as John's parent, John's mother felt a sense of satisfaction.
22. John was physically unattractive.
23. John lived with his mother.
24. John's mother had always worked full-time.
25. John once enrolled in an undergraduate college program.
26. John was saddened by his father's death.
27. John was a stylish dresser in high school.
28. John lacked the physical coordination to play basketball.
29. John's father died of a heart attack.
30. John thought that taking a civil service test would not be intellectually challenging.
31. John was put in a special class in grade school.
32. All of John's relationships with women were "brother-sister" with no sex involved.

33. John's family expected that John would own his own restaraunt some day.
34. John's mother remembers him as untypical compared to most teenagers.
35. John got his girlfriend pregnant.
36. John was never rejected by the women he dated.
37. John ran local errands on a motorcycle.
38. John was a good pool player.
39. John easily became emotionally upset.
40. John was born in Kansas City, Missouri.
41. John was a loner through most of his teenage years.
42. John was hired by the Postal Service to sort mail.
43. John was frequently the object of pity.
44. John was a janitor.
45. John received less teasing than is typical of grade school relationships.
46. All the women John dated eventually rejected him.
47. Some of John's classmates felt uncomfortable around him.
48. John's mother admitted to worrying a lot about John.
49. John's friends were highly respected in the community.

50. John's manager at the Postal Service was relieved to see John leave his job with them.
51. John's uncle took him to a Cub's game.
52. John found his job as a gas station attendant to be intellectually boring.
53. John's teachers expected that John would be a medical doctor some day.
54. John was considered to be quite handsome.
55. John frequently needed professional counseling.
56. Learning always came easy for John.
57. John was sexually involved with all of the women he dated.
58. John took a short time to train at the Postal Service.
59. Most people found John's speech difficult to understand.
60. The restaurant where John worked was located in downtown Evanston.
61. The family John grew up in consisted of seven members.
62. John received more teasing than is typical of grade school relationships.
63. John managed his finances well.
64. John was a basketball player on the school team.

65. John's mother was overly protective of John.
66. John had sessions with a school counselor.
67. John's family regularly attended church.
68. John's mother was content to have John live with her indefinitely.
69. None of John's relationships with women had been "brother-sister" with no sex.
70. Many people expected that John would not be successful in life.
71. Doug, John's twin brother, was embarrassed by John.
72. John's mother was very uninvolved in John's life.
73. John's mother received professional counseling.
74. John's family expected that he would get married someday.
75. John did not play on the school baseball team.
76. When she thought about John, John's mother felt sadness.
77. John didn't care whether he was rejected by others.
78. John's mother looked forward to the day when he would become a parent.
79. Academically, John had a difficult time keeping up with his classmates.

80. One of John's managers at the restaurant where he worked saw John as one who made a minimal contribution to the overall operation of the restaurant.
81. Academically, John was always near the top of his class.
82. When it came to sports, John watched but didn't play.
83. John's brothers and sisters would not change a thing about John.
84. John took a long time to train at the Postal Service.
85. John was never the object of pity.
86. John had a speech impediment.
87. The teasing John received was typical of most grade school relationships.
88. John had lived with a woman.
89. John had no physical handicaps.
90. John enjoyed being with animals.
91. John never had sessions with the school counselor.
92. John did not generally get along well with his grade school classmates.
93. John was never the target of teasing.
94. John didn't care whether he was accepted by others.

95. One of the women John dated completely rejected him.
96. John always had to financially depend on his mother.

GO BACK TO MAKE SURE YOU RATED EVERY SENTENCE. IF YOU MISSED ANY, RATE THEM NOW!

APPENDIX H

MEMORY TEST ANSWER SHEET SCALE (First page only)

Age -

Sex -

Class -

ANSWER SHEET SCALE

1. Definitely False	1	2	3	4	5	6	7	Definitely True	Information Not Given

2. Definitely False	1	2	3	4	5	6	7	Definitely True	Information Not Given

3. Definitely False	1	2	3	4	5	6	7	Definitely True	Information Not Given

4. Definitely False	1	2	3	4	5	6	7	Definitely True	Information Not Given

5. Definitely False	1	2	3	4	5	6	7	Definitely True	Information Not Given

6. Definitely False	1	2	3	4	5	6	7	Definitely True	Information Not Given

7. Definitely False	1	2	3	4	5	6	7	Definitely True	Information Not Given

8. Definitely False	1	2	3	4	5	6	7	Definitely True	Information Not Given

APPENDIX I

TEST ITEMS USED IN EXPERIMENT 2

True/consistent (TC) items are items which were judged in Experiment 1 to be consistent with the schema of retarded people and were true according to the information given in the narrative in Experiment 2. There were nine TC items: 33, 45, 20, 53, 99, 146, 156, 169, 179.

True/inconsistent (TI) items are items which were judged in Experiment 1 to be inconsistent with the schema and were true according to the narrative in Experiment 2. There were eight TI items: 6, 9, 65, 81, 122, 125, 140, 164.

True/neutral (TN) items are items which were judged in Experiment 1 to be neutral with the schema and were true according to the narrative in Experiment 2. There were nine TN items: 1, 31, 32, 72, 87, 161, 4, 48, 2.

False/consistent (FC) items are items which were judged in Experiment 1 to be consistent with the schema and were false according to the narrative in Experiment 2. There were eight FC items: 34, 69, 86, 121, 141, 152, 181,; 59.

False/inconsistent (FI) items are items which were judged in Experiment 1 to be inconsistent with the schema and were false according to the narrative in Experiment 2. There thirteen FI items: 13, 46, 56, 60, 78, 94, 111, 114, 115, 143, 150, 172, 175.

False/neutral (FN) items are items which were judged in Experiment 1 to be neutral with the schema and were false according to information given in the narrative in Experiment 2. There were six FN items: FN: 30, 43, 49, 95, 104, 171.

Information not given/consistent (INGC) items are items which were judged in Experiment 1 to be consistent with the schema and ones for which no information was given in the narrative in Experiment 2. There were twelve INGC items: 3, 5, 22, 84, 88, 96, 110, 116, 126, 127, 133, 142.

Information not given/inconsistent (INGI) items are items which were judged in Experiment 1 to be inconsistent with the schema and ones for which no information was given in the narrative in Experiment 2. There were eleven INGI items: 18, 44, 75, 77, 105, 106, 108, 136, 145, 157, 170.

Information not given/neutral items (INGN) items are items which were judged in Experiment 1 to be neutral with the schema and ones for which no information was given in the narrative in Experiment 2. There were seven INGN items: 14, 52, 102, 119, 149, 153, 166.

APPENDIX J

TABLE OF ABBREVIATIONSGroup Abbreviations

NL group: This group read a narrative which contained no information about John's retardation.

EL group : Early-label group. This group read a narrative which contained information about John's retardation at the beginning of the story.

LL group: This group read a narrative which contained information about John's retardation at the end of the story.

VL group: Very-late-label group. The narrative read by this group contained no information about John's retardation. Prior to taking the memory test (one week later), subjects in this group were told that John was retarded.

Item Abbreviations

T/C items: True/Consistent items. Items which were true according to information given in the narrative. These

items were rated as consistent with the schema for retarded people in Experiment 1.

T/I items: True/Inconsistent items. Items which were true according to information given in the narrative. These items were rated as inconsistent with the schema for retarded people in Experiment 1.

T/N items: True/Neutral items. Items which were true according to information given in the narrative. These items were rated as neutral with th schema for retarded people in Experiment 1.

F/C items: False/Consistent items. Items which were false according to information given in the narrative. These items were rated as consistent with the schema for retarded people in Experiment 1.

F/I items: False/Inconsistent items. Items which were false according to information given in the narrative. These items were rated as inconsistent with the schema for retarded people in Experiment 1.

F/N items: False/Neutral items. Items which were false according to information given in the narrative. These

items were rated as neutral with the schema for retarded people in Experiment 1.

ING items: Information-not-given items. (See below)
These include all items for which no information was given in the narrative.

ING/C items: Information-not-given/Consistent items.
Items for which no information was given in the narrative. These items were rated as consistent with the schema for retarded people in Experiment 1.

ING/I items: Information-not-given/Inconsistent items.
Items for which no information was given in the narrative. These items were rated as inconsistent with the schema for retarded people in Experiment 1.

ING/N items: Information-not-given/Neutral items. Items for which no information was given in the narrative. These items were rated as neutral with the schema for retarded people in Experiment 1.

TABLE 1

Experiment 1: Mean Responses for Items Judged to be
Neutral with Respect to the Schema

Item	Mean	N
1. One of John's favorite T.V. shows was <u>Quincy</u> .	2.89	9
4. The family John grew up in consisted of five girls.	3.64	14
8. John collected baseball cards when he was a boy.	2.83	18
10. John's favorite subject in school was science.	2.22	23
12. John enjoyed playing basketball when he was a boy.	2.91	23
14. John's family regularly attended church.	3.35	18
17. The family John grew up in consisted of seven members.	3.73	11
19. John was a vegetarian.	3.29	15

24. John's parents were strong Republicans.	2.64	11
27. John had brown hair.	3.75	8
30. John's mother was a full- time homemaker all of her life.	4.24	18
31. John's favorite team was the New York Knickerbockers.	4.08	13
32. John's father died of a heart attack.	3.75	16
38. John's uncle was an engineer.	3.78	9
42. John's two sisters were named Jackie and Emily.	3.50	6
43. John was born in Kansas City, Missouri.	2.83	6
47. The death of John's father was unexpected.	4.44	18
49. The names of John's two sisters were Jean and Patty.	4.17	6

50. John's mother had wanted to be a nurse.	4.19	16
54. Doug, John's twin brother, eventually became a dentist.	4.00	17
55. John's father was a mechanic.	3.71	14
66. John's father had fought in World War II.	3.27	11
72. John's uncle took him to a Cub's game.	4.60	15
82. John's favorite team was the New York Yankees.	3.40	10
83. John had a pet dog named Pete.	4.27	11
85. Doug, John's twin brother, went to school in New York.	4.20	10
89. John's oldest brother's name was Henry.	3.13	8
91. John's oldest brother was a famous football player.	2.53	17

98. John's favorite team was the Los Angeles Lakers.	4.22	8
100. John's family consisted of four members.	3.89	8
101. John's uncle was a professional umpire.	3.00	7
103. Doug, John's twin brother, was born an hour after John.	3.79	14
109. John had a friend named Susan.	4.21	13
113. John's mother did ironing on the side.	4.22	8
118. The name of John's grade school was Woodrow Wilson School.	4.50	5
119. The restaurant where John worked was located in downtown Evanston.	4.13	7
125. John's favorite music was country western.	5.17	11

129. John's father was a mail carrier.	5.00	7
130. John's favorite dish was lasagne.	4.60	9
134. John's mother was very close to all her children.	5.18	21
139. John's father preferred Chevrolet cars over Fords.	4.33	5
144. John's high school teacher was born in Germany.	3.57	6
148. John was born in 1947.	4.00	6
151. John's father died unexpectedly of a heart attack.	4.40	9
154. John had many pets.	5.05	19
158. John quit his job as a gas station attendant.	4.10	19
160. John did not enjoy watching T.V.	2.16	24

162. John's favorite team was the Chicago Cubs.	4.50	7
167. John had had six managers at the restaurant where he worked.	3.39	12
173. The name of the oldest son in John's family was Bill.	3.75	7
176. John's favorite candy was Payday Peanut Bar.	3.75	7
183. Two brothers were born after John.	4.00	10

TABLE 2

Experiment 1: Mean Responses for Items Judged to be Consistent with the Schema (Stereotype categories in parentheses)

Item	Mean	N
3. John was put in a special class in grade school. (Academic abilities)	6.55	38
5. John had a speech impediment. (Physical handicap)	5.78	38
20. Learning never came easy for John. (Intellectual abilities)	5.43	38
22. John's father had a brother who was mentally retarded. (Stigma contamination)	5.51	31
33. John was overly sensitive to the acceptance or rejection he felt from others. (Social perception)	6.06	37

		161
34. John was content to live with his mother indefinitely. (Independence)	5.61	37
45. John's brothers and sisters were overly concerned about and protective of John. (Family response)	5.61	38
53. John lived with his mother. (Independence)	6.03	31
59. John was physically unattractive. (Physical appearance)	5.38	37
69. John lacked the physical coordination to play basketball. (Athletic capabilities)	5.75	36
84. John easily became emotionally upset. (Emotional stability)	6.00	38
86. John was a loner through most of his teenage years. (Social acceptance)	5.89	35

		162
88. John was frequently the object of pity. (Social acceptance)	5.74	38
96. Some of John's classmates felt uncomfortable around him. (Social acceptance)	6.29	28
99. John's mother admitted to worrying a lot about John. (Family response)	5.82	33
110. John frequently needed professional counseling. (Emotional stability)	5.87	36
116. Most people found John's speech difficult to understand. (Physical handicap)	5.54	38
121. John received more teasing than is typical of grade school relationships. (Social acceptance)	6.24	37

- | | | |
|--|------|----|
| 126. John's mother was overly protective of John.
(Family response) | 6.49 | 36 |
| 127. John had sessions with a school counselor.
(Emotional stability) | 6.16 | 36 |
| 133. Many people expected that John would not be successful in life.
(Perception of success) | 6.21 | 37 |
| 141. John did not play on the school baseball team.
(Athletic capabilities) | 6.03 | 35 |
| 142. When she thought about John, John's mother felt sadness.
(Family response) | 5.74 | 33 |
| 146. Academically, John had a difficult time keeping up with his classmates.
(Academic abilities) | 6.28 | 38 |

		164
152. When it came to sports, John watched but didn't play. (Athletic capabilities)	6.69	35
156. John took a long time to train at the Postal Service. (Vocational success)	5.87	36
169. John enjoyed being with animals. (No category)	5.59	26
179. One of the women John dated completely rejected him. (Opposite sex relationships)	5.42	32
181. John always had to financially depend on his mother. (Independence)	5.64	35

TABLE 3

Experiment 1: Mean Responses for Items Judged to be
Inconsistent with the Schema (Stereotype category in
parentheses)

Item	Mean	N
6. Many people perceived John as a successful person. (Perception of success)	2.40	36
9. John was a motorcycle racer. (Physical capabilities)	1.77	26
13. As an adult, John never lived with his mother. (Independence)	2.52	26
18. John was voted "most likely to succeed" in high school. (Perception of success)	1.78	37
44. John physically resembled a handsome, well-known actor. (Physical appearance)	2.35	29

		166
46. John never financially depended upon his mother. (Independence)	2.20	35
56. John's favorite subject was math. (Academic abilities)	2.10	29
60. John once enrolled in an undergraduate college program. (Academic abilities)	2.61	33
65. John was a stylish dresser in high school. (Physical appearance)	2.00	35
75. John's family expected that John would own his own restaurant some day. (Family response)	2.09	34
77. John got his girlfriend pregnant. (Irresponsible lifestyle)	2.65	34

		167
78. John was never rejected by the women he dated. (Opposite sex relationships)	2.22	37
81. John was a good pool player. (Physical capabilities)	2.47	30
94. John received less teasing than is typical of grade school relationships. (Social acceptance)	2.17	35
105. John found his job as a gas station attendant to be intellectually boring. (Intellectual capabilities)	2.16	36
106. John's teachers expected that John would be a medical doctor some day. (Academic abilities)	1.46	38
108. John was considered to be quite handsome. (Physical appearance)	2.14	28

111. Learning always came easy for John. (Intellectual abilities)	1.82	38
114. John was sexually involved with all of the women he dated. (Opposite sex relationships)	1.97	31
115. John took a short time to train at the Postal Service. (Vocational success)	2.46	36
122. John managed his finances well. (Independence)	2.42	37
124. John was a basketball player on the school team. (Athletic capabilities)	2.11	34
136. John's mother was very uninvolved in John's life. (Family response)	2.47	35
140. John's family expected that he would get married some day. (Family response)	2.63	37

- | | | |
|--|------|----|
| 143. John didn't care whether
he was rejected by others.
(Social acceptance) | 2.55 | 37 |
| 145. John's mother looked forward
to the day when he would become a
parent.
(Family response) | 2.16 | 36 |
| 150. Academically, John was always
near the top of his class.
(Academic abilities) | 1.37 | 37 |
| 157. John was never the object of
pity.
(Social acceptance) | 1.65 | 36 |
| 164. John had lived with a woman.
(Opposite sex relationships) | 1.61 | 30 |
| 170. John never had sessions with
the school counselor.
(Emotional stability) | 1.95 | 37 |
| 172. John was never the target
of teasing.
(Social acceptance) | 1.64 | 38 |

175. John didn't care whether	2.46	36
he was accepted by others.		
(Social acceptance)		

TABLE 4

Experiment 1: Responses to the Follow-Up Questionnaire

Item	Means and Frequencies
1. Do you know any person who is mentally retarded?	Yes - 56 No - 20
1a. If yes, how familiar are you with this person? [Very Familiar (1) to Not Very Familiar (7)]	4.54
1b. How often do you meet and talk with this person? [Frequently (1) to Never (7)]	4.92
2. Do you know anyone who has Down's syndrome?	Yes - 18 No - 58
2a. If yes, how familiar are you with this person? [Very Familiar (1) to Not Very Familiar (7)]	3.67

- 2b. How often do you meet
and talk with this person?
[Frequently (1) to Never (7)] 5.33
3. How often do you have
contact with someone who works
with mentally retarded persons?
[Frequently (1) to Never (7)] 4.87
4. How knowledgeable are you
about mental retardation?
[Very Knowledgeable (1) to No Knowledge At All (7)] 4.32
5. How often have you had uninvolved
contact with a mentally retarded person
in the last year? Example: saw a mentally
retarded person in a restaurant.
[Frequently (1) to Never (7)] 3.67
6. How much exposure to the topic of
mental retardation have you had in the
last year? Examples: TV program, class.
[Very Much Exposure (1) to Very Little Exposure (7)] 4.34

7. Do you desire to know more about mental retardation? You will not be contacted. 3.58

[Yes, Very Much (1) to No. Not At All (7)]

8. Do you desire to become personally acquainted with a mentally retarded person? 4.21

You will not be contacted.

[Yes, Very Much (1) to No, Not At All (7)]

TABLE 5

Experiment 2: Responses to the Follow-Up Questionnaire

Item	Means and Frequencies*
1. Do you know any one who is mentally retarded?	NL: Yes - 30, No - 19 EL: Yes - 31, No - 13 LL: Yes - 34, No - 18 VL: Yes - 36, No - 14
1a. If yes, how familiar are you with this person?	NL: 3.83 EL: 4.32
[Very Familiar (1) to Not Very Familiar (7)]	LL: 4.74 VL: 3.70
1b. How often do you meet and talk with this person?	NL: 5.22 EL: 4.48
[Frequently (1) to Never (7)]	LL: 5.38 VL: 4.31
2. Do you know anyone who has Down's syndrome?	NL: Yes - 13, No - 36 EL: Yes - 5, No - 39 LL: Yes - 10, No - 42 VL: yes - 9, No - 41

2a. If yes, how familiar are you with this person? [Very Familiar (1) to Not Very Familiar(7)]	NL: 5.54 EL: 5.00 LL: 5.10 VL: 5.78
2b. How often do you meet and talk with this person? [Frequently (1) to Never (7)]	NL: 5.75 EL: 4.75 LL: 5.64 VL: 5.67
3. How often do you have contact with someone who works with mentally retarded persons? [Frequently (1) to Never (7)]	NL: 4.63 EL: 4.57 LL: 4.20 VL: 4.50
4. How knowledgeable are you about mental retardation? [Very Knowledgeable (1) to No Knowledge At All (7)]	NL: 3.86 EL: 4.16 LL: 4.12 VL: 4.24

5. How often have you had
 uninvolved contact with a
 mentally retarded person
 in the last year? Example:
 saw a mentally retarded
 person in a restaurant.
 [Frequently (1) to Never (7)]
- NL: 3.55
 EL: 3.39
 LL: 3.58
 VL: 3.60
6. How much exposure to the topic of
 mental retardation have you had in the
 last year? Examples: TV program, class.
 [Very Much Exposure (1) to
 Very Little Exposure (7)]
- NL: 4.22
 EL: 4.61
 LL: 3.94
 VL: 4.60
7. Do you desire to know
 more about mental retardation?
 You will not be contacted.
 [Yes, Very Much (1) to No, Not At All (7)]
- NL: 3.82
 EL: 3.75
 LL: 3.44
 VL: 3.70
8. Do you desire to become personally
 acquainted with a mentally retarded
 person? You will not be contacted
 [Yes, Very Much (1) to No, Not At All (7)]
- NL: 4.51
 EL: 4.50
 LL: 4.31
 VL: 4.26
- *NL = "no-label group"; EL = "early-label group"; LL =
 "late-label group"; VL = "very-late-label group"

TABLE 6

Experiment 2: Source Table for 3-Way Anova

SOURCE	SUM SQUARES	DF	MEAN SQUARE	F
Mean	26,732.54	1	26,732.54	25,944.11
Label (L)	2.03	3	0.68	0.68
Error	189.50	191	0.99	
Truth (T)	2,260.51	2	1,130.26	1.250.01
TL	8.24	6	1.37	1.52
Error	344.85	382	0.90	
Cons (C)	169.90	2	84.95	86.36
CL	3.59	6	0.60	0.61
Error	375.74	382	0.98	
TC	37.50	4	9.37	17.47
TCL	7.87	12	0.66	1.22
Error	409.94	764	0.54	

TABLE 7

Experiment 2: Mean Responses for True, False, and
Information-Not-Given (ING) Items

	LABEL				MEAN
	No	Early	Late	Very Late	
	Label	Label	Label	Label	
	NL	EL	LL	VL	
TRUTH-					
CONS.*					
TC	5.46	5.78	5.54	5.44	5.55
TI	5.22	5.18	4.77	4.81	4.99
TN	5.92	5.87	5.89	5.80	5.87
FC	3.33	3.10	3.44	3.28	3.29
FI	2.40	2.26	2.43	2.47	2.40
FN	2.87	2.64	2.77	2.65	2.73
INGC	3.82	3.67	3.86	3.59	3.74
INGI	3.08	3.03	2.94	3.11	3.04
INGN	3.50	3.65	3.61	3.58	3.59
MEAN	3.95	3.91	3.92	3.86	3.91

*T = True, F = False, ING = Information-Not-Given C = Consistent Item, I = Inconsistent Item, N = Neutral Item

TABLE 8

Experiment 2: Mean Responses for True, False and
Information-Not-Given Items (ING) Collapsed Across Label

	TRUTH VALUE			MEAN
	TRUE	FALSE	ING	
SCHEMA-CONS				
Consistent	5.55	3.30	3.74	4.18
Inconsistent	4.99	2.40	3.04	3.27
Neutral	5.87	2.73	3.59	4.21
Mean	5.47	2.74	3.45	

SCHEMATIC PROCESSING OF INFORMATION
ABOUT A MENTALLY RETARDED PERSON

by

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AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

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1985

ABSTRACT

This study examined the role of subjects' schema for mentally retarded people in their memory for events in the life of a retarded person (named John K.).

In the first experiment, characteristics of the schema for retarded people were identified by examining subjects' responses to a questionnaire designed to assess current social perceptions of retarded people. In the second experiment, it was hypothesized that previous experiences with retarded people would interact with current information about John contained in a narrative which subjects read. Specifically, it was predicted that, as a result of this interaction, later recall of factual events contained in the narrative would be distorted in a way that was consistent with the schema.