Sex Stereotypes and Implicit Personality Theory: Toward a Cognitive–Social Psychological Conceptualization[1]

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Progress in understanding sex stereotypes has been impeded by the failure of researchers to address two critical conceptual questions: What is a sex stereotype? How do sex stereotypes function in social cognition and behavior? As a step toward answering the first question, the meaning of the term "sex stereotype" was considered. On the basis of points of agreement among extant conceptual definitions of the construct "stereotype" (in both the female-male and ethnic relations literatures), a generic definition of "sex stereotypes" is proposed: the structured sets of beliefs about the personal attributes of women and of men. In order to relate sex stereotypes more closely to research and theory on "normal" psychological processes, this basic definition is recast in terms of the person perception construct, "implicit personality theory": the structured sets of inferential relations that link personal attributes to the social categories female and male. Two studies are presented to illustrate the utility of this translation. The remainder of the article addresses the second question. Here we offer preliminary ideas regarding a more general cognitive–social psychological framework for the study of sex stereotypes. Stereotype and stereotyping are distinguished, and each is discussed in light of relevant research in cognitive and social psychology.

The past decade of intense political and social turmoil regarding "women's rights" has been accompanied by a dramatic increase in social scientific research on female-male relations. A significant proportion of the work by psychologists in this area has dealt with sex stereotypes and sex-role attitudes. In another paper (Del Boca & Ashmore, Note 1), we have reviewed the empirical research on sex stereotypes. Contrary to many discussions of this literature in secondary sources, we did not find a clear and consistent body of findings. While methodological factors account for some of the confusion and contradiction, our belief is that a large part of the problem is the failure of investigators to address the conceptual issues involved in sex stereotype research.

This paucity of conceptual analysis is not restricted to the topic of *sex* stereotypes. Brigham (1971) noted in his review of the *ethnic* stereotype literature that "scant attention" had been paid to the important "conceptual questions." We agree with Brigham that the two most critical are, What is a stereotype? What is the "function and importance of . . . stereotypes in social perception and behavior?" (p. 15) This article addresses these two questions. We begin by developing a generic definition of the term "sex stereotype." This basic definition is then reformulated in terms of the person perception construct, "implicit personality theory," and two studies are presented to illustrate the utility of this translation. The concluding section is devoted to Brigham's second question. The implicit personality theory formulation of sex stereotypes is placed within a more general framework based on the assumption that (wo)man is a cognitive creature as well as a social being. The presentation of this conceptualization is organized around the distinction between "stereotype" as a cognitive structure and "stereotyping" as a complex set of intra- and interpersonal processes.

WHAT IS A SEX STEREOTYPE?

While empirical data are the final arbiter of debates regarding social scientific phenomena, the value of such data is enhanced by careful attention to the meanings attributed to the constructs involved in the research process. Below we offer a generic definition of the term "sex stereotype," which incorporates the core set of agreements among investigators of stereotypes. The proposed definition is not asserted to be "the correct" meaning of the term; rather, it is intended to make explicit the minimal points of agreement regarding what a sex stereotype is and thus serve as a guide to research and theory development. The areas of disagreement are also made explicit below, so that they can be addressed directly rather than remain implicit components of seemingly contradictory or competing formulations.

As a first step toward answering the question, What is a sex stereotype? we consulted the literature for conceptual definitions of the term "sex stereotype"

or "sex-role stereotype."[3] The number found was small, especially considering the abundance of research on the topic (e.g., in 1977 alone, there were 159 sex stereotype entries in *Psychological Abstracts*). And, when a definition was put forth, it was often done in an offhand and indirect manner. For example, Rosen-Krantz, Vogel, Bee, Broverman, and Broverman (1968) specify the meaning of "sex stereotype" in a parenthetical phrase, "The existence of sex-role stereo-types, that is, consensual beliefs about the differing characteristics of men and women in our society" (p. 287). Further, "sex stereotype" has not always been clearly differentiated from terms which would seem to be conceptually distinct (e.g., Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz (1972) use the terms "sex-role stereotype" and "sex-role standards" interchangeably). Finally, only a handful of publications (e.g., Kutner & Brogan, 1976; Spence & Helm-reich, 1978) have discussed the meaning and theoretical status of the construct "sex stereotype."

When researchers have defined the term "sex stereotype" there has been considerable agreement. First, a sex stereotype is generally regarded as something *cognitive.* It is a "belief", judgment ("sex differences . . . judged to exist"), "view", "perception(s) and expectation(s)", attribution ("traits . . . attributed"), or "assumption(s) about . . . traits". Second, a sex stereotype is defined as a *set* of beliefs. While Williams and Bennett (1975) state this most directly by using the phrase "the constellation of psychological traits attributed to men and women" (p. 327), others who have offered definitions (except Spence, Helm-reich, & Stapp, 1974) seem to agree that a sex stereotype is a collection of cog-nitions. Third, a sex stereotype is seen as a set of beliefs about *what women and men are like,* particularly the "psychological traits" or "personalities" of women and men. Finally, a sex stereotype is a set of beliefs about the personal charac-teristics of women and men which is *shared* by the members of some group.

This analysis of how sex stereotype researchers define their central con-struct is a necessary but not sufficient step toward a generic definition of the term. It is also important to consider how the term "stereotype" has been used by researchers concerned with how other social groups are perceived. While female-male relations are different in many ways from relations between other social groups (cf. Hacker, 1951), the principle of parsimony is violated and scientific communication is impaired if the same term is used differently to refer to different targets. Until recently, most stereotype research has been concerned with ethnic groups. In his review of this literature, Brigham (1971) notes that there is no single widely accepted definition of "ethnic stereotype." There are,

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[3] The term "sex stereotype" is used rather than the commonly used "sex-role stereotype" for two reasons: (1) "stereotype" and "role" are related yet distinct psychological con-structs (cf. Brown, 1965, pp. 152-175); (2) the stereotypes to be dealt with are beliefs about the social categories female and male, not about the role or roles of women and men.

however, basic themes that can be identified in the various meanings attributed to this term. On the basis of Brigham's analysis (1971), it is possible to construct a two-level taxonomy of the psychological meanings of the term "ethnic stereotype." The most basic division is in terms of the ubiquitous evaluative dimension (cf. Osgood, Suci, & Tannenbaum, 1957). For some social scientists, an ethnic stereotype is *by definition* "bad"; for others this value judgment is not included in the definition of the term. According to this latter group of authors, an ethnic stereotype is simply a "generalization," "category," or "concept." Vinacke (1957) expresses this position clearly: "stereotypes are a kind of concept, with fundamentally the same functions and general characteristics as other concepts" (p. 241). Those who define stereotypes as bad do so for one of four basic reasons: Stereotypes are acquired through "faulty reasoning" (e.g., Klineberg, 1951, p. 505); they are overgeneralized (e.g., Allport, 1958, p. 187); they do not accord with the objective characteristics of the target group (e.g., Katz & Braly, 1935, p. 181); or they are rigid (e.g., Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950, p. 228).

While there is considerable disagreement in the ethnic stereotype literature about whether a stereotype is bad, there is consensus on three points which also coincide with areas of agreement regarding sex stereotypes. First, all writers agree that a stereotype is a cognitive construct. All the definitions reviewed by Brigham (1971) include the basic notion that a stereotype is a "generalization," "categorical response," "concept," "exceptancy," "impression," or "belief" (see also Ehrlich, 1973, p. 20; Oskamp, 1977, p. 124; Tajfel, 1969, pp. 81-82). Second, there is agreement that a stereotype is a set of beliefs. (Brigham, 1971, and Ehrlich, 1973, are exceptions to this generalization.) Further, many writers argue, and we agree, that a stereotype is a *structured* set of beliefs (cf. Cauthen, Robinson, & Krauss, 1971, p. 103). This notion of structure is clear in Lippmann's original definition (1922) of stereotypes as "pictures in our heads." As Gestalt psychologists have so clearly demonstrated, a picture is not simply a set of attributes but an organized or structured set of attributes. Finally, ethnic stereotypes refer to beliefs about the personality traits and other personal attributes of ethnic groups (cf. Fishman, 1956, pp. 40-41).

The points of agreement can be phrased in terms of the following generic definition of a stereotype: A *structured set of beliefs about the personal attributes of a group of people.* A basic definition of sex stereotypes can be phrased as *the structured sets of beliefs about the personal attributes of women and of men.* These definitions do not capture all the agreements noted about. They do not include consensus, which is part of most definitions of sex stereotypes,[4] or "badness," which many social scientists use to define ethnic stereotypes.

Although most authors have reserved the term "sex stereotype" for beliefs about the sexes which are widely shared, we believe that they have done so

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[4] Although not apparent in Brigham's analysis (1971) or the present discussion, many social scientists, particularly sociologists, have defined ethnic stereotypes in terms of agreement among perceivers.

not for any compelling theoretical reason, but because their methodology dictated the use of agreement among perceivers to identity stereotypes. Most researchers have assessed sex stereotypes by means of some variant of the Katz and Braly (1933) adjective checklist. Using this general approach, the stereotypes of females and males comprise the traits that some arbitrary percentage of "judges" agree are characteristic of these social categories. This does not provide a very useful definition of a social psychological construct, since a consensual set of beliefs about a particular social group is an abstraction that bears no clear relation to the "picture in the heads" of individual perceivers. The term "stereotype" should be reserved for the structured set of beliefs about a social group held by an individual. While present methods of inquiry are not adequate for assessing such beliefs (see, however, Funk, Horowitz, Lipshitz, & Young, 1976), it is unwise to adapt theoretical constructs to fit convenient methods. Rather, we urge that methods be developed for assessing the belief systems of individuals. The recent work of Rosenberg (1977) is a good example of such research.

This is not to imply that shared sets of beliefs about social groups are unimportant. On the contrary, Gardner (1973) is correct in noting that consensual beliefs have a "social reality" (Vinacke, 1957) and as a consequence are important in determining relations between social groups. We would simply suggest that these consensual beliefs be termed "cultural stereotypes." Gordon (1962), Secord and Backman (1964), and Karlins, Coffman, and Walters (1969) use "social stereotype" to denote the agreed-upon set of beliefs regarding a particular group. (These authors use the term "personal stereotype" to refer to what we label a "stereotype.") We prefer "cultural stereotype" because it more clearly implies that such shared beliefs are but one aspect of a larger cultural system, i.e., they are encoded in the language of a particular group and are transmitted in part by means of socialization.

Distinguishing "stereotype" from "cultural stereotype" has three advantages. First, communication is improved by using different terms to describe related, yet distinct, phenomena. Second, use of the term "cultural stereotype" points up the need to clearly specify what cultural group is being studied. While Broverman and her associates (1972) have argued that there is widespread consensus regarding the perceived attributes of women and men, our analysis of the existing literature (Del Boca & Ashmore, Note 1) indicates that this has not been clearly established. Perhaps looking for agreement among members of identifiable cultural or subcultural groups will help to reveal whatever consensus does exist about the perceived characteristics of females and males. Finally, by keeping stereotype and cultural stereotype distinct, it is possible to assess an individual's personal acceptance of the shared stereotype. In the case of sex stereotypes, personal acceptance of the cultural stereotypes could be indexed by the degree of overlap between an individual's ascriptions of personal characteristics to women and men and the consensual ascriptions of her or his cultural or subcultural group.

"Badness" was not incorporated into the generic definition of sex stereo-type for two primary reasons. First, the above definition is more parsimonious and yet captures the major points of agreement among social scientists. Second, the reasons that have been offered for the badness of stereotypes are actually hypotheses about the concept; that is, these reasons are part of a theory about the concept rather than elements of a definition. It is particularly troublesome to include badness in the definition of the terms "stereotype" and "sex stereo-type" when so little research has addressed the alleged reasons for badness. (See Ashmore and Del Boca, Note 2, for an in-depth discussion of this point.)

Sex Stereotypes in Terms of Implicit Personality Theory

As defined above, stereotype is an individual-level (i.e., psychological) construct that is not by definition bad. One important implication of this defini-tion is that stereotypes can be related to "normal" psychological structures and processes. If progress is to be made in understanding relations between social groups, including women and men, the relationship between stereotypes and basic psychological research and theory must be fully explored. We agree with Rose's contention (1970) that the study of intergroup relations was derailed in the 1920s and 1930s when the topic became separated from mainstream sociology and psychology and identified as a "social problem" that could only be understood in terms of a special set of constructs.

If one entertains the possibility that stereotypes are not bizarre psycholo-gical structures, what aspects of psychological research and theory become rele-vant? Most directly applicable to stereotypes is the topic of person perception (cf. Hastorf, Schneider, & Polefka, 1970) in social psychology. While the various subfields of person perception are all necessary for the fullest understanding of stereotypes and stereotyping, the construct "implicit personality theory" is most helpful in answering the basic question, What is a sex stereotype?

The term "implicit personality theory" was first proposed by Bruner and Tagiuri (1954) and Cronbach (1955). One of the clearest definitions is provided by Hays (1958):

> It seems reasonable to suppose that an individual makes his inferential judgments of persons in some fairly characteristic way. That is, a person must have some re-latively stable scheme of expectations and anticipations about others, which is gradually built up through both direct and vicarious experience. This scheme may be thought of as the set of inferential relationships among experienced attributes and traits which exists for an individual. This set of expected relations among traits of other persons has been called the individual's "implicit theory of per-sonality" by Bruner and Tagiuri (2), Cronbach (3), and others (p. 289).

Other definitions have been proposed by Hastorf and his associates (1970, p. 46), Rosenberg and Sedlak (1972, p. 236), D. J. Schneider (1973, p. 294), and Wegner and Vallacher (1977, p. 89). There is substantial agreement about

the meaning of the term "implicit personality theory" (IPT). First, IPT is a hypothetical construct, and it is something inside a person's head. Second, the basic components of IPT are the personal attributes — particularly "trait elements" or "attributes of personality" — that a person believes others others to possess and the "inferential relations" between these attributes. Third, the word "implicit" is used because researchers assume that most people are unaware of the "theory of personality" they possess.

It is now possible to reformulate the generic definition of stereotype in implicit personality theory terms: A stereotype is *a structured set of inferential relations that link a social category with personal attributes.*[5] Sex stereotypes, in turn, are *the structured sets of inferential relations that link personal attributes to the social categories female and male.*

*Research Based on the Implicit Personality Theory
Formulation of Sex Stereotypes*

A major advantage of the present formulation is that it makes the methods of implicit personality theory research available for the assessment of stereotypes. As noted above, stereotypes have most often been assessed by self-report measures that are essentially variants of the original Katz and Braly (1933) procedure. This reliance on a single measurement strategy is methodologically undesirable (Campbell & Fiske, 1959) and has been a major factor limiting our acquisition of knowledge about stereotypes (cf. Brigham, 1971; Taylor & Aboud, 1973).

Rosenberg and Sedlak (1972) identify two basic approaches to investigating implicit theories of personality: (1) personality description, where subjects ascribe traits to other people, and (2) trait inference, where subjects are presented with a list of traits said to characterize a particular person and asked to make inferences about the presence of other attributes. The first two studies of a larger overall program of research (see Ashmore, Note 3) have used these two basic approaches to assess stereotypic perceptions of women and men.

The first study (Ashmore & Tumia, in press) was an extended replication of Rosenberg, Nelson, and Vivekananthan (1968), which is a classic example of the personality description approach to IPT. Subjects used a sorting procedure to describe people they knew in terms of 66 trait adjectives. These sorting data were converted into "psychological distance" scores among all of the pairs of traits under the assumption that traits which seldom co-occur (e.g., *warm* and *unsociable*) are psychologically dissimilar while traits which are often used in

[5] Other writers have argued that progress has been impeded because the study of stereotypes has proceeded in relative isolation from more general areas of psychological investigation (e.g., Taylor & Aboud, 1973; Vinacke, 1957), and some have adopted implicit personality theory frameworks that are, in many respects, similar to our own (i.e., Feldman, 1972; R. A. Jones, 1977; Secord, Note 11).

descriptions of the same person are psychologically similar (e.g., *practical* and *determined*). The distance scores were used as input to a multidimensional scaling computer program which produced geometrical representations of the traits in five, four, three, two, and one dimensions.

The results of the multidimensional scaling analysis were quite similar for both female and male perceivers. The two-dimensional configuration (based on the responses of both sexes) provided an adequate representation of the sorting data. This configuration was interpreted in terms of two orthogonal trait properties, Social Desirability and Potency. The property values for the traits were based on the ratings made by independent judges on the scales Good in Social Activities—Bad in Social Activities and Hard-Soft, respectively. To assess the inferential relations between the trait adjectives and the social categories female and male, a set of Indirect Female-Male property scores was determined by computing the proportion of times each trait was used in the sorting task to describe a male. This Indirect Female-Male property was strongly related to the configuration indicating that traits were assigned in a consistent manner on the basis of sex of target. Also, when the axis representing the Indirect Female-Male property was fitted to the configuration by means of multiple regression, it fell quite close to the fitted axis for the Potency property. Female targets were rather consistently described in terms of "soft" traits (e.g., *sentimental, naive*), while males were seen as possessing "hard" characteristics (e.g., *scientific, critical*). In terms of the present implicit personality theory formulation of sex stereotypes, these results suggest a close inferential relationship between the social categories "female" and "male" and the personality trait distinction "soft" versus "hard."

The multidimensional scaling analysis portrayed sex stereotypes in dimensional or spatial terms. "Female" and "male" were depicted as the end-points of a bipolar dimension in a continuous Euclidean space composed of trait adjectives, and this dimension was situated near a second dimension whose end points were "soft" and "hard." While this portrayal is empirically sound and plausible in terms of previous research, additional insights regarding sex stereotypes can be gained by representing the dissimilarity data from the sorting task in nonspatial terms. In this approach — referred to as "categorical" or "typological" (cf. Rosenberg & Sedlak, 1972) — the dissimilarity data are used to partition the objects under study (in this case, trait adjectives) into homogeneous subsets or "clusters."

Ashmore and Tumia (Note 4) used Johnson's hierarchical clustering computer program (1967) to represent the categorical structure in the dissimilarity data previously analyzed by the multidimensional scaling procedure. The results supported and extended the conclusions from the scaling analysis. The trait clusters used to describe females were also judged to be "soft." For example, the cluster comprising *submissive, naive, wavering,* and *squeamish* was consistently assigned to female targets and these traits were rated well toward the "soft" end of the Potency scale. Similarly, "hard" trait clusters (e.g., *critical, discriminating, stern, shrewd, dominating*) were ascribed most often to male targets. The scaling

results were extended in two ways. First, the clustering revealed some subtle differences in cognitive structuring between female and male perceivers. (Both of the above clusters were provided by male perceivers.) Of particular importance was the indication that sex of target was a more central or basic construct for male perceivers than for females. Second, several clusters were consistently assigned to females and males; this suggested that the perceivers were distinguishing different types of women and men. For example, female perceivers seemed to distinguish two "soft" and positively evaluated types of women: *honest-sincere-sentimental* (a "nurturant" woman?) and *meditative-modest-reserved* (a "quiet thoughtful" woman?).

Del Boca and Ashmore (in press) employed the second general approach to explicating implicit personality theory, trait inference, to assess sex stereotypes. Two experiments were conducted using the impression formation paradigm originated by Asch (1946). In both, subjects were asked to make inferences about the personality of a female or a male stimulus person who was described by a brief list of traits. In Experiment 1, this trait list described targets as either good or bad in intellectual activities and as either warm or cold; in Experiment 2, the introductory list comprised traits which were relatively neutral in terms of evaluation. Subjects rated the stimulus persons on adjective scales selected to reflect dimensions of personality perception reported in previous research.

In both studies, male targets were rated significantly higher than females in terms of traits reflecting Intellectual Desirability (e.g., *scientific-unscientific*). In addition, female targets tended to be rated higher on Communion (e.g., *generous-selfish*) in Experiment 1, and lower than males on Potency (e.g., *weak-strong*) in Experiment 2. No differences as a function of stimulus sex were obtained for Social Desirability (e.g., *sociable-unsociable*), Activity (e.g., *active-passive*), and Agency (e.g., *ambitious-unambitious*). The results suggest that the dimension of implicit personality theory most closely associated with perceived sex differences is a combination of Intellectual Desirability and Potency. Results of the analyses of individual trait items suggest that the "male end" of this dimension is relatively well-defined by traits which convey a hardheaded, rational approach to problem solving, while the "female end" is less elaborated and consists of traits reflecting softheartedness.

Taken together, the results of these studies demonstrate the utility of formulating stereotypes in terms of the "implicit personality theory" construct.[6]

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[6] Two points need to be noted regarding these methods in relation to the generic definition of sex stereotypes. First, in both studies aggregate data were used to depict the beliefs of individuals. While we feel that methods which directly tap individual-level belief systems need to be developed, we do not urge that aggregate methods be abandoned, since they can indicate cognitive structures of "modal" individuals (cf. Funk et al., 1976). Second, we have assessed sex stereotypes through subjects' descriptions of individual women and men. Our IPT approach and the associated methods, however, do not require that only responses to individuals be used — for example, Funk and her associates (1976) and R. A. Jones and Ashmore (1973) used group labels as stimuli. Comparison of stereotype structures based responses to individuals versus groups will increase understadig of how the sexes are perceived.

With respect to sex stereotypes, they indicate a close inferential relationship between the social categories, "female" and "male," and the personality trait distinction, "soft" versus "hard." Further, the clustering analysis of the sorting task data suggests that sex stereotypes vary as a function of sex of respondent and that perceivers may distinguish different types of women and men.

TOWARD A COGNITIVE–SOCIAL PSYCHOLOGICAL CONCEPTUALIZATION OF SEX STEREOTYPES

The remainder of this article is devoted to placing our IPT formulation of sex stereotypes within the context of a more inclusive cognitive–social psychological framework. It is important to note two points at the outset. First, the framework is a general one, applicable to stereotypes of all social groups, though the focus here is on perceptions of females and males. Second, we are not proposing a "theory" or "model." Rather, we present some ideas which might be included in a more complete conceptualization of stereotypes, particularly sex stereotypes, in the hope that these ideas might inform future research and theory.

The phrase "cognitive–social psychological conceptualization" is used for three reasons. First, as noted above, a stereotype is a "picture in the head"; it is first and foremost a psychological phenomenon. Even those who adopt a stereotype-as-consensual-belief approach would not dispute the importance of analyzing stereotypes at the level of the individual: "the [stereotyping] process as such *takes place only* in individuals and must be explicable on the level of psychological processes of individuals who feel themselves to be members of groups" (Fishman, 1956, p. 45). Second, a stereotype is a cognitive construct, that is, a set of thoughts or beliefs. Third, a stereotype is presumed to influence social behavior. Thus, it is necessary to place stereotypes within the context of (wo)man as a cognitive creature and a social being. In the following pages, we present some ideas from the cognitive psychology literature (cf. Cohen, 1977; Neisser, 1967), particularly the subfields of semantic memory, concept formation (cf. Cohen, 1977) and object identification (cf. Vurpillot, 1976); and from social psychology, particularly the area of person perception (cf. Hastorf et al., 1970).[7]

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[7] Our cognitive-social psychological framework is not identical with the emerging approach to research and theory called "cognitive social psychology" (Carroll & Payne, 1976). Also, it is not assumed that the perception of people and groups of people is directly analogous to the perception of non-social objects (Mischel, 1974). People are clearly more important to most of us than are objects. We use others as standards in social comparison (Festinger, 1954) and as sources of feedback and appraisal in the formation and maintenance of a self concept (Wegner & Vallacher, 1977). Further, we perceive others as autonomous centers of action and intention (Hastorf et al., 1970). Probably among the more important perceptual differences between people and things is that the most important attributes of persons are not revealed by physical states and changes (Jones & Gerard, 1967). Hence, observation and inference are more complicated with respect to people, and they may even involve qualitatively different perceptual and cognitive strategies.

As a first step toward a cognitive—social psychological conceptualization of sex stereotypes, it is necessary to distinguish a stereotype from stereotyping. Basically, this is a distinction between a *structure* (stereotype) and a *process* (stereotyping). While agreeing with Neisser (1976) that cognitive structures and the use of these structures in perceiving, categorizing, integrating, and decision-making (all processes) are highly interconnected, we feel that it is useful to separate structure and process in order to discuss a very complex set of phenomena.

Just as it is important to distinguish structure from process, the *functional value* of stereotypes and stereotyping must be clarified. While the psychological function of sex stereotypes has seldom been discussed, some social scientists have argued that ethnic stereotypes serve an ego-defensive function. That is, they allay, via projection and displacement, the anxiety caused by internal, intrapsychic conflict. While stereotypes may serve ego-defensive functions for some people — particularly the extremely bigoted or those hostile to a wide variety of social groups (Ashmore, 1970) — cognitive—social psychological framework for stereotypes is best built around what Katz (1968) calls the "knowledge function."

We regard the individual as a "naive scientist" (Heider, 1958)[8] who strives to make sense out of a complex environment (cf. Kelly, 1955). Stereotypes are one form of the "implicit theories" which individuals use to organize their experience of the world (Wegner & Vallacher, 1977). More specifically, a stereotype is an individual's "implicit theory" about a social group (Hastorf et al., 1970). Although such "theories" are implicit (i.e., the perceiver is generally unaware of their existence and operation), they are, in many respects, analogous to the more formal and explicit personality theories advanced by trained psychologists (e.g., D. J. Schneider, 1973).

The goals of the naive scientist are similar to those of the trained researcher: the description, prediction, and explanation of a particular phenomenon. The scientific goal of description involves organizing observations on the basis of perceived regularities. For the naive personologist, stereotypes serve this organizing function. They provide the means by which the individual breaks the social environment into categories of people, and they organize the perceiver's information about these social groups. The order imposed on a set of phenomena permits the trained scientist to predict previously unobserved relationships (Wegner & Vallacher, 1977). While the lay scientist may rarely make "explicit predictions," stereotypes do create expectancies which allow the perceiver to anticipate the behavior of others as well as the consequences of her or his own actions. Like scientists, however, naive personality theorists are not content to anticipate events. Rather, they seem to be inherently motivated to explain the

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[8] The label "naive" is not intended to be pejorative, but to contrast the *relatively* formal, explicit, to-be-tested theories of the professional scientist with the more informal, implicit, and assumed-to-be-true constructions of the "person in the street." This distinction, of course, should not be overdrawn (cf. Kuhn, 1962).

causes of behavior (cf. Heider, 1958). Stereotypes supply the perceiver with explanations for the state of relations between social groups (Tajfel, 1969) and the behavior of individual group members. Further, they may provide explanations for the perceiver's own attitudes and actions (Brown, 1965; Campbell, 1967).

The analogy between the lay personality theorist and the trained scientist is not intended to suggest that stereotypes reflect veridical perceptions of social groups or that stereotyping is a purely objective phenomenon serving only rational ends. On the contrary, the naive scientist frequently deviates from the ideal scientific model. We will postpone discussion of these deviations and turn now to stereotypes as cognitive structures.

Stereotypes: Cognitive Structure and Organization

According to our implicit personality theory formulation, a stereotype is a mental representation that comprises three structural components: (1) a social category, (2) personal attributes, and (3) inferential relations. All stereotypes have a specific referent, that is, a particular social category. A social category may be thought of as a rule or set of specifications that a perceiver uses to classify people as similar. Thus, a social category is simply a special case of what Allport (1958) and Bruner (1957) refer to as a "category" and E. E. Jones and Gerard (1967) define as a "cognitive category."

The nature of social categories has received little conceptual or empirical attention. Implicit in the way in which stereotypes have generally been studied, however, is the notion that (1) individuals cognitively partition the social environment into "natural" groups; (2) these groups are defined and recognized in terms of a small number of easily identifiable cues; and (3) all members of a social category are regarded as equivalent. This implicit model does not accord well with common sense, current thinking in cognitive psychology, or the available intergroup relations literature.

That the social world is populated by "natural groups" defined by clear physical cues suggests a direct realist (e.g., Gibson, 1966, 1977) view of perception and, indirectly, of cognitive categories based on perception. While we are all constrained by what is "out there," a more constructivist position seems to comport best with common sense and with what is known about human cognition (cf. Cohen, 1977, especially pp. 2-11). The term "constructivist" is used to indicate that (1) humans are active information processors rather than passive recipients of structures which are fully encoded in external reality, and (2) human memory consists not just of abstractings from direct experience but also of cognitive reworkings of such experience. (This is not to imply that all such cognitive activity is under conscious control; much information processing proceeds rather automatically by means of well-learned knowledge structures.)

A constructivist stance is particularly likely to be important for understanding social perception and cognition. Intuitively, it seems unikely that social

groups can be specified in terms of "affordances" (Gibson, 1977). For example, although race might seem to be an obvious "natural group" with clear physical identification cues, it is estimated that each year "from a few thousands to tens of thousands" of Blacks "pass" permanently into White society and countless others pass "temporarily or occasionally" (Simpson & Yinger, 1965, p. 379). In addition, there are individual differences in noting racially significant physiognomic features (Secord, Bevan, & Katz, 1956) and in classifying photographs of Negroes and Whites (Secord, 1959). Similarly, "female" and "male" seem to be clear social categories, but there are presently thousands of transsexuals in the United States (Kessler & McKenna, 1978) and probably many more individuals who successfully impersonate the opposite sex. In sum, the perceiver plays an active role in partitioning the social world. While there certainly are "objective" differences in appearance and customs between members of various groups, the perceiver uses some of these differences and ignores others in constructing her or his classification system for grouping other people.

What factors influence the categorical distinctions employed by a perceiver? Certainly culture plays a significant role in determining the cognitive categories of individuals. Since culturally specified social categories are linguistically coded (e.g., "Turks," "men," "criminals"), they are relatively easy to study by means of self-report methods; and, perhaps for this reason, they have received considerable attention from stereotype researchers. Two additional influences on social categorization which have received less attention are self-concept and personal goals. One of the earliest social category distinctions acquired by the child is self versus other (cf. Moerk, 1977, p. 86). The primitive "self-concept" that results from this differentiation is developed through the child's interaction with others; and it, in turn, serves as a significant reference point in the child's partitioning of the social environment. An individual's goals or purposes, which are likely to be related to sense of self, constitute a second factor determining how the social world is partitioned. To shape social categories as relatively enduring cognitive representations, these goals must have some stability. (Here we intend to distinguish, for example, "I want to get an 'A' in my introductory psychology class" from "I want to get good grades.") While a large number of goals might be identified — some very widely shared (e.g., "I want to be liked"), others quite idiosyncratic (e.g., "I want to visit Peru") — it is proposed that the understanding of sex stereotypes would be most enhanced by a consideration of the goals that women and men have at various stages in the life cycle.

Self-concept and personal goals through the life cycle raise two topics virtually ignored by investigators: stereotype acquisition and individual differences in the perception of social groups. The apparent lack of interest in these topics may be attributable to the implicit belief of many researchers that stereotypes are ingrained in culture and that *all members* of a particular society *simply absorb* culturally specified social categories. While such cultural specifications are important, the acquisition of stereotypes is not a simple process of absorption, and there are significant differences among members of a culture in social category definition and stereotype content.

The following are among the more important questions that need to be addressed regarding sex stereotype acquisition: (1) How do the child's early (i.e., preschool) views of mother and father (e.g., Kagan & Lemkin, 1960) shape the nature of later gender-based categories? (2) Do parents use direct verbal instruction to teach "female" and "male" as opposing categories (see Hefner, Rebecca, & Oleshansky, 1975, p. 147)? If so, are the social categories "female" and "male" psychological opposites (i.e., male is not female and female is not male)? (3) How are gender-related categorizations conditioned by social relations between the sexes at various points in the life cycle? An example: In middle childhood, play groups tend to be rigidly sex segregated, but most college students seem to want to form relations with at least some members of the opposite sex. It seems very likely that a 7- or 8-year-old child might simply partition the social world of peers into us (same sex) and them (opposite sex). The college student, however, probably identifies a variety of "them" (e.g., "girls that are too tall for me," "a jock"), and these social categories are probably best understood in terms of actual or potential interpersonal relations.

While research on differences among individuals with respect to sex stereotypes might profitably proceed in a variety of directions, a cognitive—social psychological perspective suggests two high priority questions: (1) How are individual differences in cognitive functioning related to sex stereotypes and stereotyping? Of particular significance here are such variables as cognitive complexity (Bieri, Atkins, Briar, Leaman, Miller, & Tripoldi, 1966; Crockett, 1965) and cognitive style (cf. Klein, 1970, especially pp. 201-205). Also, Scott (1969) has suggested a variety of properties of cognitive structures on which one might expect individual differences. (2) How is an individual's self-concept linked to her or his stereotypes of women and men? There is research indicating a correspondence between sex stereotypes as culturally shared phenomena and the self-concepts of women and men; that is, males and females tend to describe themselves in terms of traits associated with the stereotype of their sex (e.g., Broverman et al., 1972, p. 67). This relationship has been regarded as evidence that sex stereotypes shape self-concept. In this view, stereotypes serve as standards that individuals are motivated to approximate. Both Kagan (1964) and Kohlberg (1966, 1969) have proposed theories of sex-role development that are based on this same logic. These theories assume the existence and nature of sex stereotypes. Learning sex stereotypes needs, however, to be studied in its own right. Also, it is worth considering the possibility that self-concept can shape the perception of social groups (including the sexes) as well as be shaped by such perceptions.

An important implication of recognizing the perceiver's role in partitioning the social environment is the possibility that she or he may not conceive of women and men as homogeneous categories. While extant sex stereotype measures assume category homogeneity, this assumption is not in line with experimental evidence regarding the organization of semantic memory or our cognitive—social

psychological framework based on (wo)man the scientist. An impressive body of evidence from cognitive psychology suggests "that people have strong spontaneous tendencies to organize items into categories *and sub-categories*" (Cohen, 1977, p. 8, italics added). There is no reason to believe that such "tendencies" do not apply to social "items." Our assumptions about the "knowledge function" of stereotypes also suggest that it is very unlikely that an individual's IPT would simply distinguish women from men. An implicit theory that failed to differentate "baby girl" from "wife" from "mother" from "my boss, Susan Baxter" would not be of much help in describing, predicting, and explaining behavior. However, little research has been conducted to ascertain the types of women and men that perceivers distinguish, or the way in which these types are organized within the more general categories of female and male.

In addition to a social category referent, a stereotype comprises a set of personal attributes inferentially related to the social category. The very general term "personal attributes" is used because we believe that the content of stereotypes is not limited to the trait adjectives used in most extant measures. If, as is assumed, stereotypes influence social perception, they must provide the basis for recognizing instances of a social category. It seems appropriate, then, to distinguish between *identifying attributes* that permit the classification of a particular social stimulus and *ascribed attributes* that tend to be inferred on the basis of category membership. This distinction is somewhat similar to that between defining and characteristic features proposed by Smith, Shoben, and Rips (1974). However, unlike the physical concepts studied by these authors, social categories are frequently not defined by the same external features used to identify instances of the category. Thus, it is necessary to differentiate *defining attributes,* the essential criterial featues of a concept's meaning (Smith et al., 1974), from the *identifying attributes* that enable recognition of a social category's exemplars. Stereotypes, then, comprise three classes of personal attributes: defining, identifying, and ascribed. In terms of sex stereotypes, the social categories female and male tend to be defined in terms of biological criteria – chromosomal makeup, genitalia, or reproductive function – while category exemplars are generally identified on the basis of physical cues such as stature, clothing, and style of movement (Kessler & McKenna, 1978).

Even if attention is restricted to ascribed attributes, which extant sex stereotype measures purport to assess, there is reason to believe that the almost exclusive reliance of these measures on trait adjectives is not warranted. First, there is accumulating evidence from person perception researchers (cf. Livesley & Bromley, 1973; Fiske, Note 5) that humans conceive of others in terms of a variety of qualities other than traits. Second, while it is likely that much cognitive activity is language-like, there is no reason to believe that we think in terms of natural language (Fodor, 1975) or that all mental activity is conducted in verbal or symbolic terms. As Posner (1973), Abelson (1976), and others have pointed out, humans seem to have several internal codes, and it is likely that

impressions of others are coded in a variety of ways. Posner (1973) distinguishes visual, verbal, and motor encoding, which are analogous to Bruner, Oliver, and Greenfield's (1966) iconic, symbolic, and enactive. Abelson (1976) adds the possibility of affective encoding. Whether these codes actually represent "separate boxes in an architectural memory structure" (Newell, 1973, p. 292) is not of concern here. What is important is that humans behave as if they have access to internal information that is affective, image-like, and behavioral as well as verbal. It is likely that individuals code some attributes of social categories in non-linguistic terms. Thus, sex stereotypes may contain components which are pictorial (e.g., the visage of Robert Redford standing for " handsome"), behavioral (e.g., a sequence of stored actions which might be translated, "A college boy opens the door for me, but I pay for dinner; and then I have to work like hell to keep his paws off me at the movies"), and affective (e.g., a set of re-membered feelings which could be expressed by the sentence, "Career women make me feel, well, just sort of confused"). While words have been used to illus-trate all of these types of encoding, it is important to note that the perceiver does not necessarily have the ability to verbalize visual, behavioral, or affective codings.

Since it is possible that significant aspects of stereotypes are coded in be-havioral and affective terms, these types of codings of stereotype content need to be subjected to empirical examination. Some pioneering work on the relation-ships among traits and affects in the implicit personality theories of individuals has been done by Rosenberg (1977). This work might be profitably extended to the study of stereotypes to understand the role that affects play in social categorization and trait ascription.

The concept of "cognitive scripts" (Abelson, 1976; Schank & Abelson, 1977) represents one possible approach to the study of the behavioral encoding of stereotypes. According to Abelson (1976), a script is a "coherent sequence of events expected by the individual, involving him either as a participant or an ob-server" (p. 33). In other words, it is a knowledge structure which describes appropriate sequences of events for particular situations. Scripts are composed of slots and requirements about how these slots can be filled (Schank & Abelson, 1977). To the extent that members of a particular social category tend to be regarded as occupants of a particular role slot, the script may be thought of as inferentially related to that category, and the expected behavior of category members as an element of a stereotype. An illustration: When the senior author was a teenager, he and most of his peers shared a script for "making a date." In part, this script specified that "the boy asks the girl for the date (except on Sadie Hawkins Day)." In addition to describing an action sequence, this script element implies a sex-linked personal attribute that can be described in trait terms as "boys are more active than girls."

In studying affective and behavioral encoding of social experience, Rosen-berg (1977) and Schank and Abelson (1977), respectively, have used respon-

dents' verbal behavior. While the approaches taken by these researchers can be fruitfully applied to the topic of sex stereotypes, the implementation of methodologies that do not rely on verbal response to index affect or behavior should be a high priority. We offer two possibilities. Affective experience can be discerned from facial, postural, and extralinguistic cues, as well as spatial behavior (see Weick, 1968, pp. 381-396). With regard to behavior it may be possible to employ role play situations (Cook & Selltiz, 1964), "contrived observation" (Webb, Campbell, Schwartz, & Sechrest, 1964) or observational rating schemes for behavior in natural settings to uncover the assumed characteristics of social groups as participants (stereotypes) in expected sequences of social action (scripts).

Having discussed the nature of a social category and the personal attributes comprised by a stereotype, we must now consider the ways in which these cognitive elements are linked. In our working conceptualization, cognitions are interconnected by a set of inferential relations. The term "inferential relation" is used to denote any rule specifying the relationship between cognitive elements. Inferential relations have three basic properties: (1) the nature of the association rule, (2) direction, and (3) strength of association. The extant self-report methods portray sex stereotypes as comprising an unstructured list of simple, unidirectional, single-valued inferential relations (e.g., if "female" then *submissive, warm,* etc.). Multidimensional scaling can depict cognitive structure and clearly indicates varying degrees of strength of association. This technique, however, cannot depict complex rules of association and assumes that inferential relations are bidirectional (i.e., since the distance from A to B equals the distance from B to A the inferential relations of A to B and B to A must be identical). Tversky (1977) has presented a compelling logical and empirical critique of this assumption. It seems necessary, then, to develop more sophisticated methods of assessing and depicting the inferential relations involved in sex stereotypes. Recent work by D'Andrade (1976) and Schank (1972), as well as Tversky (1977), may provide useful leads for such research.

Stereotyping: Stereotypes and the Processing of Social Information

Stereotyping refers to the operation of stereotypes in the perception of people and interpersonal events. The processes involved in person perception are similar, although not necessarily identical (see footnote 7), to those implicated in the perception of nonsocial objects (Hastorf et al., 1970). With respect to the physical environment, the perceiver attends to cues that permit her or him to identify an object as an instance of a cognitive category (Neisser, 1967). Having classified the object, the perceiver may infer other unobservable characteristics (e.g., the object's function). In stereotyping, stereotypes influence the attention, categorization, and inference processes that occur in response to a social stimu-

lus. Stereotypes direct the search for, and the selective attention to, cues that signify category membership, and they specify the rule by which cues are combined to determine category placement. The inferential relations comprised by the stereotype govern the ascription of personal attributes. In the context of social interaction, stereotypes can generate expectancies that affect the attribution processes involved in the explanation of causality. They may also directly influence the behavior of the perceiver and, in turn, that of the target. The behavioral response of the target may then reinforce or modify the perceiver's stereotype. Thus, stereotypes as cognitive structures influence person perception processes and behavioral events, and stereotyping can provide feedback that affects stereotypes.

Before describing stereotyping more fully, it is necessary to underline two points made earlier. First, not all of the cognitive activity involved in this process is under conscious control, and the individual may be unaware of her or his role in the structuring of experience. In fact, the stereotypes held by most adults are probably overlearned. One consequence of overlearning is that the internal responses (e.g., words) that are used to guide the individual's information processing during early learning gradually drop out (Dollard & Miller, 1950, pp. 214-216), and holistic cognitive structures control thought and other action. Neisser (1976) has termed this "schematic processing." Thus, it is likely that stereotypes operate in an automatic (i.e., non-conscious, habitual) rather than a controlled (i.e., conscious, deliberate) manner (cf. W. Schneider & Shiffrin, 1977, especially pp. 2-3). Second, while the various cognitive activities subsumed under the rubric "stereotyping" will be discussed sequentially, these processes are actually interpenetrating and interdependent (cf. Neisser, 1976, especially Chapter 2).

At its core, sex stereotyping involves the ascription of personal attributes on the basis on a target's perceived membership in a gender-based social category. Gender categorization is an essential component of the sex stereotyping process. Classification of a target into a gender-based category requires both that the perceiver identify the person's sex and that the perceiver use this information in category assignment. The recognition of sex as a specific feature of a social target does not by itself imply the use of this information in social categorization. Hence, it is important to distinguish the recognition process of *gender identification* from *gender categorization,* the process of psychologically representing a target as a member of a gender-based cognitive category.

Phenomenologically, gender identification seems simple, easy, and certain. However, this process is considerably more complex than it appears. Since the defining features of sex (e.g., genitalia) are generally not visible in social interaction, the perceiver must rely on a variety of observable gender-relevant cues, most of which are not unambiguously displayed by a majority of either sex (Kessler & McKenna, 1978). Much of the ease with which gender identification

occurs may, in fact, be due to the target's active (though not necessarily conscious) presentation of self as a female or a male (Kessler & McKenna, 1978). Most individuals dress, style their hair, and behave in ways that are considered gender appropriate (Mintz, 1974). Further, since gender presentation involves virtually all facets of physical appearance as well as many aspects of behavior, there is considerable redundancy of sex-relevant information in most stimulus arrays.

In addition to facilitating gender identification, the self-presentation of social targets exerts a powerful influence on social categorization. Goffman (1961) and other sociologists concerned with face-to-face interaction (e.g., Cicourel, 1974; Garfinkel, 1967) have demonstrated that an individual "negotiates," by means of impression management, her or his own social category placement with the perceiver. Lyman and Douglass (1973) have applied this approach to understanding ethnic relations by showing how different types of group and individual images are communicated by enhancing or minimizing attributes associated with group membership. With respect to the social categorization of women and men, attire and adornment represent one important aspect of impression management. Women, for example, wearing plain skirted suits present an upper-class, professional image; "trendy" clothing, on the other hand, is likely to result in assignment to a clerical or secretarial category (Molloy, 1977).

What perceptual strategy characterizes the process of social categorization? Work in cognitive psychology suggests that recognition of class membership occurs by comparing an object to a series of prototypes. This process involves the search for object features that are shared by an exemplar and a prototypic standard (cf. Vurpillot, 1976, pp. 195-209). Thus, the identification of attributes that signify category memberships appears to involve prototype comparison and a perceptual strategy of attending to common, rather than distinctive, features.

Two different types of structures have been labeled as prototypes by investigators in cognitive psychology. Rosch (1975; Rosch & Mervis, 1975) has described object prototypes as the "most typical" or "best examples" of a concept and used Wittgenstein's notion (1953) of "family resemblance" to express the relationship between prototypes and other objects comprised by a category. In this view, prototypic objects are those which tend to possess features that are widely distributed within a set, but which have few characteristics in common with members of contrasting categories. Other investigators (e.g., Posner & Keele, 1968; Reed, 1972) have construed prototypes as abstract composites that represent the central tendencies of each feature in a set of visual displays.

The prototype concept may be of considerable value in furthering understanding of social categorization and of the formation and organization of social categories. However, three caveats must be mentioned. First, cognitive psychologists concerned with prototypes have dealt with nonhuman objects, often using simple visual displays. It would seem much easier to identify and measure the

important features of such objects than to do so for social stimuli.[9] Second, the "family resemblance" and central tendency formulations of prototype are different and when applied to specific domains can point to different entities as most prototypic. In addition, Tversky (1977) has suggested a more general cognitive model which subsumes the prototype concept; and Medin and Schaffer (1978) have argued that the learning theory principles of generalization and discrimination account better for classification phenomena than do the prototype formulations. These various structural models have different implications for the processing of stimuli. Third, the way in which prototypes are represented in long-term semantic memory is at present vague. Thus, the exact nature and form of prototypes is unclear. However, with the exception of Medin and Schaffer (1978), these seems to be general agreement that a prototype functions as a holistic standard of comparison for the identification of nonidentical exemplars of a category. While the areas of uncertainty suggest the need for caution, the prototype construct certainly seems worthy of the attention of those concerned with social categorization in general and sex stereotyping in specific.

Presumably, then, there are prototypic standards that direct attention to gender-relevant cues (e.g., physical stature, expressive style), allow the perceiver to identity a person's sex, and govern the use of this information in social categorization. In everyday social interaction, gender identification is a ubiquitous, automatic process (Kessler & McKenna, 1978). As noted above, however, gender identification does not necessarily imply that the perceiver will code a target as a member of the social category "female" or "male" or as an instance of any other gender-based cognitive category. Gender categorization is analogous to psychologically representing an individual as a member of an ethnic group, and the applied form of Ehrlich's "principle of category placement" (1973) summarizes this process: "Ascribing ethnic group membership to an individual is contingent on the joint effects of that person's characteristics, the criteria of ethnic classification, his eligibility for other social categories, and the social context in which he appears" (p. 39).

Rosch's work (Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976) on prototypes of object categories (e.g., "tree," "chair") suggest that category exemplars vary in terms of "prototypicality"; that is, some instances of a category are regarded as more representative or typical of a concept than others (e.g., "robin" is more prototypical of the category "bird" than is "chicken" or "penguin"). Such good examples of a concept are easier to learn and to categorize than less prototypical items. Thus far, little research has directly addressed the question of social category prototypes. It seems reasonable to suspect, however, that social targets also differ in the degree to which they provide good "fits" with a perceiver's category prototypes. For example, an individual who is tall

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[9] Recent work by Cantor and Mischel (Note 12), however, demonstrates that the concept has heuristic value in the field of person perception.

and muscular with a craggy square face more closely approximates the male prototypic standard than one who is small in stature with delicate facial features. (It is relatively easy to name specific examples of more prototypic instances, e.g., John Wayne, Jim Brown.) Consistent with this hypothesis, Lippa (1978) has shown that stimulus persons vary in terms of perceived femininity and masculinity and that subjects ratings with respect to these traits have high interjudge reliability.

The social category system of the perceiver is a major determinant of the way in which a social target is classified. Person perception research indicates that perceivers contribute more to the variability in personality descriptions of stimulus targets than do the targets themselves (Dornbusch, Hastorf, Richardson, Muzzy, & Vreeland, 1965). The implicit personality theories of individuals vary considerably in terms of the number and nature of social categories distinguished, as well as in the content of the personal attributes associated with each (Rosenberg, 1977). The nature of the social category prototypes of the perceiver, in combination with attributes of a social stimulus, jointly determine the target's eligibility for assignment to various categories. Most individuals probably exhibit numerous characteristics beyond gender-cues, making them eligible for any number of the categories in a particular perceiver's IPT. As noted above, gender-based category systems have not received much research attention; hence, it is difficult to assess the degree to which such categories pre-empt other classifications in the social categorization process. If, as proposed earlier, stereotypes, as components of IPT, function to simplify the social environment and guide behavior, it seems likely that attributes other than sex (e.g., age) will be factors in the perceiver's category system and play a critical role in the social category assignment of individual targets. An infant, even when dressed in pink or blue, is as likely to be placed in a category which is not gender specific (e.g., "cuddly baby") as one that is (e.g., "baby boy" or 'baby girl"). When gender categorization does occur, most social targets seem unlikely to be assigned to the broad social categories "female" and "male." Farrah Fawcett-Majors, for example, may be assigned to a category such as "beautiful women." Although this classification is specific to women, it probably implies a somewhat different set of personal attributes than the social category "female."

The variability among perceivers in terms of available social categories raises an important question about the assessment techniques typically used in sex stereotype research: What category prototypes do individuals access when asked to describe "women" and "men" (e.g., McKee & Sherriffs, 1957) or the "typical adult female (male)" (e.g., Rosenkrantz et al., 1968)? Although no research has addressed this question directly, the results of a recent study by Cowan and Stewart (1977) are suggestive. These investigators found considerable variability among respondents in terms of the cognitive categories activated by such instructions. For example, 82% of the female subjects who completed the Sex-Role Stereotype Questionnaire (Rosenkrantz et al., 1968) reported visual

imagery of a specific individual when responding to the male stimulus. And, these "imagined" individuals were highly variable, ranging from parents and friends to mass media personalities.

To this point, we have considered the joint contribution of the individual's IPT and the characteristics of the stimulus person in determining social category placement. Stereotyping occurs, however, in a social context, and this context is critical for understanding the social categorization process. The context of interaction serves to make particular social categories more "accessible" (cf. Bruner, 1957) in at least two ways. First, the physical setting may serve to make specific features of a target perceptually salient. A lone woman in an otherwise all-male group is attended to more than the men (Taylor, Fiske, Close, Anderson, & Ruderman, Note 6). Second, certain situations may arouse specific goals or purposes of the perceiver. Given that women and men are attracted to one another as sexual beings, one relatively stable goal that is likely to be aroused in mixed-sex interactions is the desire for an intimate relationship with someone of the opposite sex.[10] Social categories relevant to this goal are likely to be differentially available depending on the situation, and particular target characteristics are likely to be more or less salient. Thus, it might be expected that perceivers would classify members of the opposite sex differently in a library than at a dance, and that a target's physical attractiveness would become a more salient stimulus characteristic at a mixer than in a biology lab.

To what extent does social categorization influence the actual ascription of personal attributes? The predominate view among stereotype researchers seems to be that once a social target has been categorized, the perceiver will tend to ascribe traits almost solely on the basis of the target's group assignment. The degree to which perceived group memberships influence the ascription of personal attributes has, however, been rarely studied. Some evidence suggests a basis cognitive bias on the part of perceivers to minimize differences among objects identified as members of a group. This tendency has been demonstrated for both social (Tajfel, Sheikh, & Gardner, 1964) and nonsocial (Tajfel & Wilkes, 1963) stimuli. Some writers (e.g., Cauthen et al., 1971) have argued that this tendency is likely to be diminished when perceivers have access to information beyond that which serves to identify a target as a member of a group. Again, this proposition has not received much study. With respect to trait inferences based on stimulus sex, research of our own (Del Boca & Ashmore, in press) suggests that when other meaningful stimulus information is made salient (e.g., whether a target is warm or cold), sex may be a relatively less important factor in trait ascription.

[10] Here we are making the obvious, though generally overlooked, point that sex stereotypes and sexual behavior are psychologically interconnected and that this interconnection must somehow be reflected in our conceptualizations of these phenomena (Lipman-Blumen and Tickameyer, 1975, pp. 55-56 in mimeographed version, make the parallel argument for sex roles and sexual behavior.)

In addition to attention, categorization, and inference processes, stereo-types affect cognitive functioning in other ways as well. As indicated earlier, our cognitive—social psychological framework assumes that one function of stereo-types is to provide the perceiver with causal explanations for human behavior. The field of attribution theory in social psychology is concerned with the study of such causal explanations. Drawing on the application of attribution theory to the topic of achievement behavior (cf. Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1972), Deaux (1976) has developed a model of the way in which sex stereotypes influence attributions regarding successful and unsuccessful task performance. According to this framework, performance consistent with sex-stereotypic expectations is likely to be attributed to a stable cause (usually ability), while behavior inconsistent with stereotype-based expectations is likely to be explained in terms of temporary causes (luck or effort). Thus, for example, success at a task stereotypically associated with masculine competence (e.g., mathmatical or scientific problem solving) is likely to be attributed to ability when the actor is male, and to luck when the actor is a female. Deaux's model is partially supported by empirical evidence (e.g., Deaux & Emswiller, 1974; Feldman-Summers & Kiesler, 1974).

In addition to attribution processes, evidence suggests that stereotypes also influence the retention and recall of social information. Using a videotaped fe-male stimulus identified either as a waitress or a librarian, Cohen (Note 7) found that subjects were more accurate in recognizing information when it was con-gruent with the stereotype associated with the target's occupation. Other find-ings suggest that perceivers tend to overestimate their exposure to information that is consistent with group stereotypes and to underestimate events that tend to disconfirm stereotype-based expectations (Hamilton & Rose, Note 8; Roth-bart, Note 9). These studies, together with those reviewed thus far, make it clear that stereotypes do indeed play an important role in the cognitive processing of information regarding people and interpersonal events.

Thus far our discussion has been restricted to the influence of stereotypes on the cognitive processes involved in person perception. As noted above, how-ever, one reason why stereotypes are of interest to the social scientist is that they are assumed to influence behavior. Recently, Snyder and his associates (cf. Snyder, Note 10) have conducted a series of studies concerned with the cog-nitive and behavioral consequences of widely accepted stereotypes regarding physical attractiveness (e.g., beliefs that physically attractive people are more warm and interesting than the unattractive). These studies indicate that when perceivers interact with targets whom they believe to be physically attractive, they influence the target (irrespective of the target's actual attractiveness) to act in ways that confirm the perceivers' stereotypes (the target does, in fact, behave in a more friendly and likable manner).

Sex stereotypes also seem likely to affect the behavior of both perceiver and target. Thus, for example, a male perceiver may associate the trait *indecisive*

with the social category "female." In interacting with a specific woman, this perceiver is likely to behave in a manner consistent with his stereotype (e.g., taking charge of planning a joint activity). Further, the perceiver is likely to expect that his own behavior will be anticipated and appreciated. A particular target may respond to the perceiver's actions in a way which tends either to challenge (e.g., she may have already formulated a tentative plan herself) or reinforce (e.g., she may simply wait for him to propose a course of action) his stereotypic expectations. Snyder's research suggests that targets may often be led to behave in line with expectations; and, as a consequence, their behavior may reinforce stereotypes. It must be noted, however, that Snyder's work dealt only with the positive expectations associated with the physical attractiveness stereotype. (Other well-known examples of the self-fulfilling prophecy have also employed positive expectations, e.g., Rosenthal & Jacobson, 1968.) It remains to be seen whether individuals are equally likely to fulfill negative as well as positive expectations. This is quite important to the topic of female-male relations, since the content of sex stereotypes is not unambiguously positive or negative for either sex.

The self-fulfilling nature of stereotypes is only one factor which tends to make these cognitive structures relatively resistant to change. Although we have conceptualized stereotypes as potentially flexible (we rejected the notion that stereotypes are *by definition* "rigid"), we feel that in actual practice, the stereotypes held by an individual may remain relatively unchanged for long periods of time. One major factor which may account for this rigidity is that implicit theories, as cognitive constructions, deviate from explicit scientific theories in three important ways. First, implicit theories are constrained by the inherent limited capacity of humans to process and store information (cf. Carroll & Payne, 1976, pp. x-xi). The tendency to minimize within-group variability and exaggerate the differences between groups is but one manifestation of this limited capability. (This is also one of the undesirable aspects of stereotypes in Campbell's 1967 analysis.) The cognitive processing limitations of the naive scientist contrast markedly with the powerful means of data storage and analysis (e.g., computers) available to the professional scientist. Second, there is considerable evidence from a variety of fields that cognitive categories lead the perceiver to selectively attend to information that tends to confirm the category (cf. W. Mischel, 1970). Although scientific theories are analogous in that they shape questions asked in research, such theories are ideally regarded as constructions to be tested. Further, since such theories are explicit, verification must withstand public scrutiny. The lay person assumes that her or his implicit theory is *the* way the world is (Wegner & Vallacher, 1977). That is, implicit theories are phenomenologically regarded as true rather than as possibly falsifiable constructions. (Campbell, 1967, views this human quality, which he terms "phenomenological absolutism," as another reason why stereotypes are undesirable.)

Third, the concepts comprised by an individual's IPT — social categories and personal attributes — have two properties that make a theory difficult to test: (1) They are not observable, and (2) they are vaguely defined (Wegner & Vallacher, 1977). Thus, if a target is encountered who behaves inconsistently with the expectations created by category placement, the target may in many cases be reassigned to another category. Personality traits, in particular, are problematic in terms of theory testing. They are broadly defined semantically and they tend to have diverse behavioral referents (W. Mischel, 1970). The all-encompassing nature of these attributes allows the perceiver to reinterpret ambiguous information in ways that are congruent with her or his theory. W. Mischel (1970) provides a good example of the relative stability of sex stereotypes over time, despite shifts in traditional sex roles: When large numbers of women joined the labor force, the nurturant image of women was maintained by the belief that they were primarily motivated to provide material benefits for their children.

Motivational factors also contribute to the stability of stereotypes. First, it seems likely that there will be some motivation to resist change in the implicit structures that guide perception and behavior, especially in the structures we rely on most often. Because they are organized, changes in one element almost always have implications for changes in other aspects of the system. An implicit theory which was completely responsive to the nuances of experience would probably produce chaotic perceptions. Since most of us encounter targets of both sexes frequently, sex stereotypes might be expected to be particularly impervious to change. Second, perceivers may avoid testing their implicit theories because a challenge to the validity of stereotypic beliefs might have negative implications for self-regard. Thus, a male who views himself first and foremost as a "real man" might be expected to avoid interaction with assertive, independent women because they would challenge his beliefs about women and indirectly pose a potential threat to his self-concept. Third, temporary motivational states of the organism may affect attentional processes. Research indicates, for example, that emotional arousal restricts the range of cues that the organism responds to (Easterbrook, 1959). Thus, emotional arousal may be one factor that contributes to the perceiver's failure to attend to and process information that tends to disconfirm stereotypic beliefs. Events that tend to disconfirm stereotypic beliefs may themselves produce emotional arousal. In addition, representatives of particular social groups are likely to arouse strong feelings, both positive (e.g., patriotism) and negative (e.g., racial prejudice).

Finally, in addition to the psychological factors already discussed, existing societal arrangements serve to perpetuate individual-level stereotypes in two ways. First, the social structuring of female and male roles and relationships is congruent with sex stereotypes. Thus, the nature of societal arrangements provides the perceiver with indirect "evidence" that sustains traditional sex-stereotypic beliefs. Second, because individual women and men have been socialized to fit

existing sex roles, they are likely to behave in ways that can be interpreted as confirming sex stereotypes. This article has not addressed the social, cultural, and institutional factors which condition female-male relations. Any "complete explanation" of sex stereotypes must encompass not only the individual-level variables we have discussed but also societal-level factors and the interplay between these two elements (cf. Ashmore & Del Boca, 1976).

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